

Arizona Academic Standards Crosswalk

Agricultural Business Management - Agriscience Power, Structural, & Technical Systems - Option E CIP No. 01.0100.60

The Arizona Academic Standards Crosswalk is designed to provide a resource/tool to assist CTE teachers integrating academic standards into their teaching strategies. The identified Academic Standards' Performance Objectives aligned with standards/ measurement criteria are highly recommended although not required. Teachers may select from this crosswalk for the most applicable Performance Objectives as well as using alternative or additional Performance Objectives from the complete list of ADE Academic Standards.

SAE and FFA Integrated Skills (Options A-G)

CIP No. 01.0100

1.0 DEVELOP A PLAN FOR A CAREER IN AGRICULTURAL BUSINESS AND MANAGEMENT

1.1 Analyze the variety of career options in: agribusiness systems; animal systems; environmental service systems; food products & processing systems; natural resource systems; plant systems; and power, structural & technical systems.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).

PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

PO 1 Interpret data that show a variety of possible relationships between variables, including: *positive relationship *negative relationship *no relationship

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

1.2 Develop career goals based on interests, attitudes and research, and record in the long-ranged annual Supervised Agricultural Experience (SAE) program plan.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C1

Concept 1: Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.

PO 2 Develop questions from observations that transition into testable hypotheses.

PO 3 Formulate a testable hypothesis.

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

PO 2 Identify the resources needed to conduct an investigation.

PO 5 Record observations, notes, sketches, questions, and ideas using tools such as

journals, charts, graphs, and computers.

Standard: Writing

Strand 1: Writing Process

W09-S1C1

Concept 1: Prewriting (Grades 9-12): includes using strategies to generate, plan, and organize ideas for specific purposes.

- PO 1 Generate ideas through a variety of activities (e.g., brainstorming, notes and logs, graphic organizers, record of writing ideas and discussion, printed material or other sources).
- PO 2 Determine the purpose (e.g., to entertain, to inform, to communicate, to persuade, to explain) of an intended writing piece.
- PO 3 Determine the intended audience of a writing piece.
- PO 4 Establish a controlling idea appropriate to the type of writing.
- PO 5 Use organizational strategies (e.g., outline, chart, table, graph, Venn Diagram, web, story map, plot pyramid) to plan writing.

W09-S1C2

Concept 2: Drafting (Grades 9-12): incorporates prewriting activities to create a first draft containing necessary elements for a specific purpose.

- PO 1 Use a prewriting plan to develop the main idea(s) with supporting details.
- PO 2 Sequence ideas into a cohesive, meaningful order.

W11-S3C3

Strand: Writing Applications

Concept 3: Functional Writing (Grades 11-12): provides includes specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.

- PO 1 Write a work-related document (e.g., application, minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation, technical manual) that:
 - a. presents information purposefully and succinctly to meet the needs of the intended audience
 - b. follows a conventional format

1.3 Write, review and revise plan/goals through an annual long ranged SAE program plan.

Standard: Writing

Strand 1: Writing Process

W09-S1C1

Concept 1: Prewriting (Grades 9-12): includes using strategies to generate, plan, and organize ideas for specific purposes.

- PO 1 Generate ideas through a variety of activities (e.g., brainstorming, notes and logs, graphic organizers, record of writing ideas and discussion, printed material or other sources).
- PO 2 Determine the purpose (e.g., to entertain, to inform, to communicate, to persuade, to explain) of an intended writing piece. PO 3 Determine the intended audience of a writing piece.
- PO 4 Establish a controlling idea appropriate to the type of writing.

- PO 5 Use organizational strategies (e.g., outline, chart, table, graph, Venn Diagram, web, story map, plot pyramid) to plan writing.

W09-S1C2

Concept 2: Drafting (Grades 9-12): incorporates prewriting activities to create a first draft containing necessary elements for a specific purpose.

- PO 1 Use a prewriting plan to develop the main idea(s) with supporting details.
- PO 2 Sequence ideas into a cohesive, meaningful order.

W09-S1C3

Concept 3: Revising (Grades 9-12): includes evaluating and refining the rough draft for clarity and effectiveness. (Ask: Does this draft say what you want it to say?)

- PO 1 Evaluate the draft for use of ideas and content, organization, voice, word choice, and sentence fluency. (See Strand 2)
- PO 2 Add details to the draft to more effectively accomplish the purpose.
- PO 3 Delete irrelevant and/or redundant information from the draft to more effectively accomplish the purpose.
- PO 4 Rearrange words, sentences, and paragraphs in the draft in order to clarify the meaning or to enhance the writing style.
- PO 5 Add transitional words and phrases to the draft in order to clarify meaning or enhance the writing style.
- PO 6 Use a variety of sentence structures (i.e., simple, compound, complex) to improve sentence fluency in the draft.
- PO 7 Apply appropriate tools or strategies (e.g., peer review, checklists, rubrics) to refine the draft.
- PO 8 Use resources and reference materials (e.g., thesaurus, dictionary) to select more effective and precise language.

W09-S1C4

Concept 4: Editing (Grades 9-12): includes proofreading and correcting the draft for conventions.

- PO 1 Identify punctuation, spelling, and grammar and usage errors in the draft.
- PO 2 Use resources (e.g., dictionary, word lists, spelling/grammar checkers) to correct conventions.
- PO 3 Apply proofreading marks to indicate errors in conventions. PO 4 Apply appropriate tools or strategies (e.g., peer review, checklists, rubrics) to edit the draft.

W09-S1C5

Concept 5: Publishing (Grades 9-12): includes formatting and presenting a final product for the intended audience.

- PO 1 Prepare writing that follows a format appropriate for the purpose (e.g., for display, sharing with others, submitting to a publication).
- PO 2 Include such techniques as principles of design (e.g., margins, tabs, spacing, columns) and graphics (e.g., drawings, charts, graphs), when applicable, to enhance the final product.
- PO 3 Write legibly.

Strand 3: Writing Applications

W11-S3C3

Concept 3: Functional Writing (Grades 11-12): provides includes specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.

- PO 1 Write a work-related document (e.g., application, minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation, technical manual) that:
- a. presents information purposefully and succinctly to meet the needs of the intended audience
 - b. follows a conventional format

1.4 Manage personal and career goals through an annual long ranged SAE program plan.
(standards not identified)

1.5 Describe factors that contribute to job satisfaction & success.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

2.0 PREPARE FOR EMPLOYMENT IN AGRICULTURAL BUSINESS AND MANAGEMENT

2.1 Develop a resume and sample cover letter utilizing data from the SAE Record and Planning book and from the Job Interview CDE.

Standard: Writing

Strand 1: Writing Process

W09-S1C1

Concept 1: Prewriting (Grades 9-12): includes using strategies to generate, plan, and organize ideas for specific purposes.

- PO 1 Generate ideas through a variety of activities (e.g., brainstorming, notes and logs, graphic organizers, record of writing ideas and discussion, printed material or other sources).
- PO 2 Determine the purpose (e.g., to entertain, to inform, to communicate, to persuade, to explain) of an intended writing piece.
- PO 3 Determine the intended audience of a writing piece.
- PO 4 Establish a controlling idea appropriate to the type of writing.
- PO 5 Use organizational strategies (e.g., outline, chart, table, graph, Venn Diagram, web, story map, plot pyramid) to plan writing.

W09-S1C2

Concept 2: Drafting (Grades 9-12): incorporates prewriting activities to create a first draft containing necessary elements for a specific purpose.

- PO 1 Use a prewriting plan to develop the main idea(s) with supporting details.
- PO 2 Sequence ideas into a cohesive, meaningful order.

W09-S1C3

Concept 3: Revising (Grades 9-12): includes evaluating and refining the rough draft for clarity and effectiveness. (Ask: Does this draft say what you want it to say?)

- PO 1 Evaluate the draft for use of ideas and content, organization, voice, word choice, and sentence fluency. (See Strand 2)
- PO 2 Add details to the draft to more effectively accomplish the purpose.
- PO 3 Delete irrelevant and/or redundant information from the draft to more effectively accomplish the purpose.
- PO 4 Rearrange words, sentences, and paragraphs in the draft in order to clarify the meaning or to enhance the writing style.
- PO 5 Add transitional words and phrases to the draft in order to clarify meaning or enhance the writing style.
- PO 6 Use a variety of sentence structures (i.e., simple, compound, complex) to improve sentence fluency in the draft.
- PO 7 Apply appropriate tools or strategies (e.g., peer review, checklists, rubrics) to refine the draft.
- PO 8 Use resources and reference materials (e.g., thesaurus, dictionary) to select more effective and precise language.

W09-S1C4

Concept 4: Editing (Grades 9-12): includes proofreading and correcting the draft for conventions.

- PO 1 Identify punctuation, spelling, and grammar and usage errors in the draft.

(See Strand 2)

- PO 2 Use resources (e.g., dictionary, word lists, spelling/grammar checkers) to correct conventions.
- PO 3 Apply proofreading marks to indicate errors in conventions.
- PO 4 Apply appropriate tools or strategies (e.g., peer review, checklists, rubrics) to edit the draft.

W09-S1C5

Concept 5: Publishing (Grades 9-12): includes formatting and presenting a final product for the intended audience.

- PO 1 Prepare writing that follows a format appropriate for the purpose (e.g., for display, sharing with others, submitting to a publication).
- PO 2 Include such techniques as principles of design (e.g., margins, tabs, spacing, columns) and graphics (e.g., drawings, charts, graphs), when applicable, to enhance the final product.
- PO 3 Write legibly.

Strand 3: Writing Applications

W11-S3C3

Concept 3: Functional Writing (Grades 11-12): provides includes specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.

- PO 1 Write a work-related document (e.g., application, minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation, technical manual) that:
 - a. presents information purposefully and succinctly to meet the needs of the intended audience
 - b. follows a conventional format

2.2 Create a personal portfolio with industry-specific work samples.

Standard: Writing

Strand 1: Writing Process

W09-S1C1

Concept 1: Prewriting (Grades 9-12): includes using strategies to generate, plan, and organize ideas for specific purposes.

- PO 1 Generate ideas through a variety of activities (e.g., brainstorming, notes and logs, graphic organizers, record of writing ideas and discussion, printed material or other sources).
- PO 2 Determine the purpose (e.g., to entertain, to inform, to communicate, to persuade, to explain) of an intended writing piece.
- PO 3 Determine the intended audience of a writing piece.
- PO 4 Establish a controlling idea appropriate to the type of writing.
- PO 5 Use organizational strategies (e.g., outline, chart, table, graph, Venn Diagram, web, story map, plot pyramid) to plan writing.

W09-S1C2

Concept 2: Drafting (Grades 9-12): incorporates prewriting activities to create a first draft containing necessary elements for a specific purpose.

- PO 1 Use a prewriting plan to develop the main idea(s) with supporting details.
- PO 2 Sequence ideas into a cohesive, meaningful order.

W09-S1C3

Concept 3: Revising (Grades 9-12): includes evaluating and refining the rough draft for clarity and effectiveness. (Ask: Does this draft say what you want it to say?)

- PO 1 Evaluate the draft for use of ideas and content, organization, voice, word choice, and sentence fluency. (See Strand 2)
- PO 2 Add details to the draft to more effectively accomplish the purpose.
- PO 3 Delete irrelevant and/or redundant information from the draft to more effectively accomplish the purpose.
- PO 4 Rearrange words, sentences, and paragraphs in the draft in order to clarify the meaning or to enhance the writing style.
- PO 5 Add transitional words and phrases to the draft in order to clarify meaning or enhance the writing style.
- PO 6 Use a variety of sentence structures (i.e., simple, compound, complex) to improve sentence fluency in the draft.
- PO 7 Apply appropriate tools or strategies (e.g., peer review, checklists, rubrics) to refine the draft.
- PO 8 Use resources and reference materials (e.g., thesaurus, dictionary) to select more effective and precise language.

W09-S1C4

Concept 4: Editing (Grades 9-12): includes proofreading and correcting the draft for conventions.

- PO 1 Identify punctuation, spelling, and grammar and usage errors in the draft. (See Strand 2)
- PO 2 Use resources (e.g., dictionary, word lists, spelling/grammar checkers) to correct conventions.
- PO 3 Apply proofreading marks to indicate errors in conventions.
- PO 4 Apply appropriate tools or strategies (e.g., peer review, checklists, rubrics) to edit the draft.

W09-S1C5

Concept 5: Publishing (Grades 9-12): includes formatting and presenting a final product for the intended audience.

- PO 1 Prepare writing that follows a format appropriate for the purpose (e.g., for display, sharing with others, submitting to a publication).
- PO 2 Include such techniques as principles of design (e.g., margins, tabs, spacing, columns) and graphics (e.g., drawings, charts, graphs), when applicable, to enhance the final product.
- PO 3 Write legibly.

Strand 3: Writing Applications

W11-S3C3

Concept 3: Functional Writing (Grades 11-12): provides includes specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.

- PO 1 Write a work-related document (e.g., application, minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation, technical manual) that:
 - a. presents information purposefully and succinctly to meet the needs of the intended audience
 - b. follows a conventional format

2.3 Complete a job application process, including electronic applications.

Standard: Writing

Strand 3: Writing Applications

W11-S3C3

Concept 3: Functional Writing (Grades 11-12): provides includes specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.

- PO 1 Write a work-related document (e.g., application, minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation, technical manual) that:
 - a. presents information purposefully and succinctly to meet the needs of the intended audience
 - b. follows a conventional format

2.4 Demonstrate customer service skills.

(standards not identified)

2.5 Demonstrate interviewing skills utilized in any FFA Career Development Event (CDE).

(standards not identified)

2.6 Apply researched company/agency information for the purpose of preparing for the interview process.

Standard: Reading

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Critique the consistency and clarity of the text’s purpose.
- PO 1 Critique the effectiveness of the organizational pattern (e.g., logic, focus, consistency, coherence, visual appeal) of expository text.
- PO 2 Distinguish among different kinds of evidence used to support conclusions (e.g., logical, empirical, anecdotal).
- PO 2 Determine the accuracy and truthfulness of one source of information by examining evidence offered in the material itself and by referencing and comparing the evidence with information available from multiple sources.
- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)

- PO 3 Evaluate the evidence used to support the author’s perspective contained within both primary and secondary sources. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.

3.0 PARTICIPATE IN SUPERVISED AGRICULTURAL EXPERIENCES [SAE]

3.1 Demonstrate understanding and use of technology appropriate for the SAE or career goals.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).

PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.

3.2 Demonstrate workplace leadership and teamwork skills and behaviors.

(standards not identified)

3.3 Demonstrate positive attitudes in person and through communication technology.

(standards not identified)

3.4 Demonstrate positive interpersonal behaviors.

(standards not identified)

3.5 Demonstrate safe and healthy workplace behaviors.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

PO 1 Demonstrate safe and ethical procedures (e.g., use and care of technology, materials, organisms) and behavior in all science inquiry.

3.6 Recognize and adapt to changes in the workplace.

(standards not identified)

3.7 Participate in a variety of SAE paid or non-paid work experiences.

(standards not identified)

3.8 List skills and competencies for selected SAE or career.

Standard: Writing

Strand 1: Writing Process

W09-S1C1

Concept 1: Prewriting (Grades 9-12): includes using strategies to generate, plan, and organize ideas for specific purposes.

PO 1 Generate ideas through a variety of activities (e.g., brainstorming, notes and logs, graphic organizers, record of writing ideas and discussion, printed material or other sources).

3.9 Complete Arizona SAE Record and Planning book.

Standard: Writing

Strand 3: Writing Applications

W11-S3C3

Concept 3: Functional Writing (Grades 11-12): provides specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.

- PO 1 Write a work-related document (e.g., application, minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation, technical manual) that:
- a. presents information purposefully and succinctly to meet the needs of the intended audience
 - b. follows a conventional format

4.0 DEMONSTRATE ORAL COMMUNICATION SKILLS

4.1 Through research, collect appropriate topical information and data as would be utilized for any FFA CDE that would require oral communication skills

Standard: Reading

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Critique the effectiveness of the organizational pattern (e.g., logic, focus, consistency, coherence, visual appeal) of expository text.
- PO 2 Distinguish among different kinds of evidence used to support conclusions (e.g., logical, empirical, anecdotal).
- PO 2 Determine the accuracy and truthfulness of one source of information by examining evidence offered in the material itself and by referencing and comparing the evidence with information available from multiple sources.
- PO 3 Evaluate the evidence used to support the author's perspective contained within both primary and secondary sources. (Connected to Research Strand in Writing)

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze the structures of functional text (e.g., their format, graphics and headers) to determine how authors use these features to achieve their purposes.
- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 1 Demonstrate safe and ethical procedures (e.g., use and care of technology, materials, organisms) and behavior in all science inquiry.

Standard: Writing

Strand 3: Writing Applications

W09-S3C6

Concept 6: Research Writing (Grades 9-12): is a process in which the writer identifies a topic or question to be answered. The writer locates and evaluates

information about the topic or question, and then organizes, summarizes, and synthesizes the information into a finished product.

- PO 1 Write a research product that:
- incorporates evidence in support of a thesis or claim
 - integrates information and ideas from multiple primary and secondary sources
 - makes distinctions between the relative value and significance of specific data, facts, and ideas
 - includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - integrates direct quotes
 - uses internal citations
 - includes a works cited, bibliography, or reference page

4.2 Use questioning techniques to obtain needed information from audience.
(standards not identified)

4.3 Interpret verbal and nonverbal communications of audience.
(standards not identified)

4.4 Demonstrate active listening skills.
(standards not identified)

4.5 Demonstrate use of technologies for a formal presentation.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C4

Concept 4: Communication: Communicate results of investigations.

- PO 1 For a specific investigation, choose an appropriate method for communicating the results.
- PO 2 Produce graphs that communicate data. (See MHS-S2C1-02)
- PO 3 Communicate results clearly and logically.

4.6 Deliver presentation incorporating verbal and nonverbal communication techniques.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C4

Concept 4: Communication: Communicate results of investigations.

- PO 1 For a specific investigation, choose an appropriate method for communicating the results.
- PO 2 Produce graphs that communicate data. (See MHS-S2C1-02)
- PO 3 Communicate results clearly and logically.

4.7 Communicate using effective and suitable language for a diverse audience.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C4

Concept 4: Communication: Communicate results of investigations.

- PO 1 For a specific investigation, choose an appropriate method for

communicating the results.

PO 2 Produce graphs that communicate data. (See MHS-S2C1-02)

PO 3 Communicate results clearly and logically.

4.8 Demonstrate effective telephone techniques.

(standards not identified)

4.9 List appropriate skills for oral customer communication.

Standard: Writing

Strand 1: Writing Process

W09-S1C1

Concept 1: Prewriting (Grades 9-12): includes using strategies to generate, plan, and organize ideas for specific purposes.

PO 1 Generate ideas through a variety of activities (e.g., brainstorming, notes and logs, graphic organizers, record of writing ideas and discussion, printed material or other sources).

4.10 Participate in any FFA CDE that requires oral communication.

(standards not identified)

5.0 DEMONSTRATE WRITTEN COMMUNICATION SKILLS

5.1 Through research, collect appropriate topical information and data as would be utilized in any FFA CDE event that would require written communication skills.

Standard: Reading

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Critique the effectiveness of the organizational pattern (e.g., logic, focus, consistency, coherence, visual appeal) of expository text.
- PO 2 Distinguish among different kinds of evidence used to support conclusions (e.g., logical, empirical, anecdotal).
- PO 2 Determine the accuracy and truthfulness of one source of information by examining evidence offered in the material itself and by referencing and comparing the evidence with information available from multiple sources.
- PO 3 Evaluate the evidence used to support the author's perspective contained within both primary and secondary sources. (Connected to Research Strand in Writing)

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze the structures of functional text (e.g., their format, graphics and headers) to determine how authors use these features to achieve their purposes.
- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.
- PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

Standard: Writing

Strand 3: Writing Applications

W09-S3C6

Concept 6: Research Writing (Grades 9-12): is a process in which the writer identifies a topic or question to be answered. The writer locates and evaluates information about the topic or question, and then organizes, summarizes, and synthesizes the information into a finished product.

- PO 1 Write a research product that:
- incorporates evidence in support of a thesis or claim
 - integrates information and ideas from multiple primary and secondary sources
 - makes distinctions between the relative value and significance of specific data, facts, and ideas
 - includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - integrates direct quotes
 - uses internal citations
 - includes a works cited, bibliography, or reference page

5.2 Organize information and develop an outline.

Standard: Writing

Strand 1: Writing Process

W09-S1C1

Concept 1: Prewriting (Grades 9-12): includes using strategies to generate, plan, and organize ideas for specific purposes.

- PO 1 Generate ideas through a variety of activities (e.g., brainstorming, notes and logs, graphic organizers, record of writing ideas and discussion, printed material or other sources).
- PO 2 Determine the purpose (e.g., to entertain, to inform, to communicate, to persuade, to explain) of an intended writing piece.
- PO 3 Determine the intended audience of a writing piece.
- PO 4 Establish a controlling idea appropriate to the type of writing.
- PO 5 Use organizational strategies (e.g., outline, chart, table, graph, Venn Diagram, web, story map, plot pyramid) to plan writing.

W09-S1C2

Concept 2: Drafting (Grades 9-12): incorporates prewriting activities to create a first draft containing necessary elements for a specific purpose.

- PO 1 Use a prewriting plan to develop the main idea(s) with supporting details.
- PO 2 Sequence ideas into a cohesive, meaningful order.

W11-S3C3

Concept 3: Functional Writing (Grades 11-12): provides specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.

- PO 1 Write a work-related document (e.g., application, minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation, technical manual) that:
- presents information purposefully and succinctly to meet the needs of the intended audience
 - follows a conventional format

5.3 Credit sources of information in appropriate written format.

Standard: Writing

Strand 1: Writing Process

W09-S2C6

Concept 6: Conventions (Grades 9-12): addresses the mechanics of writing, including capitalization, punctuation, spelling, grammar and usage, and paragraph breaks.

- PO 12 Use appropriate format, according to type of writing, to cite sources (e.g., Chicago, APA, MLA, UPI, any other recognized style manual).

5.4 Prepare business communication using appropriate written format for the situation.

Standard: Writing

Strand 1: Writing Process

W11-S3C3

Concept 3: Functional Writing (Grades 11-12): provides specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.

- PO 1 Write a work-related document (e.g., application, minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation, technical manual) that:
- a. presents information purposefully and succinctly to meet the needs of the intended audience
 - b. follows a conventional format

5.5 Prepare draft document using established rules for grammar, spelling and sentence construction.

Standard: Writing

Strand 1: Writing Process

W09-S1C4

Concept 4: Editing (Grades 9-12) includes proofreading and correcting the draft for conventions.

- PO 1 Identify punctuation, spelling, and grammar and usage errors in the draft. (See Strand 2)
- PO 2 Use resources (e.g., dictionary, word lists, spelling/grammar checkers) to correct conventions.
- PO 3 Apply proofreading marks to indicate errors in conventions.
- PO 4 Apply appropriate tools or strategies (e.g., peer review, checklists, rubrics) to edit the draft.

W09-S2C6

Concept 6: Conventions (Grades 9-12): addresses the mechanics of writing, including capitalization, punctuation, spelling, grammar and usage, and paragraph breaks.

- PO 1 Use capitals correctly for:
- a. proper nouns:
 - holidays
 - place/regional names

- languages
- historical events
- organizations
- academic courses (e.g., algebra/Algebra I)
- product names
- b. words used as names (e.g., Grandpa, Aunt Lyn)
- c. literary titles (book, story, poem, play, song)
- d. titles
- e. abbreviations
- f. proper adjectives (e.g., German shepherd, Chinese restaurant)
- PO 2 Use commas to correctly punctuate:
 - a. items in a series
 - b. greetings and closing of letters
 - c. introductory words, phrases and clauses
 - d. direct address
 - e. interrupters
 - f. compound sentences
 - g. appositives
 - h. dialogue
- PO 3 Use quotation marks to punctuate:
 - a. dialogue
 - b. titles
 - c. exact words from sources
- PO 4 Use underlining or italics to correctly identify titles and vessels (e.g., ships, spacecrafts, planes, trains).
- PO 5 Use colons to punctuate business letter salutations and sentences introducing lists.
- PO 6 Use semicolons to punctuate compound and compound-complex sentences when appropriate.
- PO 7 Use apostrophes to punctuate:
 - a. contractions
 - b. singular possessives
 - c. plural possessives
- PO 8 Use hyphens, dashes, parentheses, ellipse, and brackets correctly.
- PO 9 Spell words correctly.
- PO 10 Use paragraph breaks to reinforce the organizational structure, including dialogue.
- PO 11 Demonstrate control of grammar and usage in writing:
 - a. parts of speech
 - b. verb forms and tenses
 - c. subject/verb agreement
 - d. pronoun/antecedent agreement
 - e. parallel structure
 - f. comparative and superlative degrees of adjectives
 - g. modifier placement
 - h. homonyms
- PO12 Use appropriate format, according to type of writing, to cite sources (e.g., Chicago, APA, MLA, UPI, any other recognized style manual).

5.6 List appropriate skills for written customer communication.

Standard: Writing

Strand 1: Writing Process

W09-S1C1

Concept 1: Prewriting (Grades 9-12): includes using strategies to generate, plan, and organize ideas for specific purposes.

- PO 1 Generate ideas through a variety of activities (e.g., brainstorming, notes and logs, graphic organizers, record of writing ideas and discussion, printed material or other sources).

5.7 Utilize electronic format for written and presentation communications.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C4

Concept 4: Communication: Communicate results of investigations.

- PO 1 For a specific investigation, choose an appropriate method for communicating the results.
- PO 2 Produce graphs that communicate data. (See MHS-S2C1-02)
- PO 3 Communicate results clearly and logically.

5.8 Participate in any FFA CDE that requires written communication.

(standards not identified)

6.0 EVALUATE THE ROLE OF AGRICULTURAL BUSINESS AND MANAGEMENT INDUSTRIES IN THE ECONOMY

6.1 Evaluate the roles of agricultural business and management industries in local, state, national and international economies.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of

key ideas, syntax, and word choice influence the clarity and understandability of functional text.

- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 1 Interpret data that show a variety of possible relationships between variables, including:
 - *positive relationship
 - *negative relationship
 - *no relationship

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

6.2 Compare and contrast the advantages and disadvantages of sole proprietorships, partnerships and corporations.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant

contexts.

- PO 5 Identify the meaning, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spelling by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 1 Interpret data that show a variety of possible relationships between variables, including:
- *positive relationship
 - *negative relationship
 - *no relationship

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - a. includes a topic sentence for each body paragraph
 - b. includes relevant factors and variables that need to be considered
 - c. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - d. includes an effective conclusion
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - h. includes an effective conclusion

6.3 Develop a business plan.

Standard: Writing

Strand 1: Writing Process

W09-S1C1

Concept 1: Prewriting (Grades 9-12): includes using strategies to generate, plan, and organize ideas for specific purposes.

- PO 1 Generate ideas through a variety of activities (e.g., brainstorming, notes and logs, graphic organizers, record of writing ideas and discussion, printed material or other sources).
- PO 2 Determine the purpose (e.g., to entertain, to inform, to communicate, to

- persuade, to explain) of an intended writing piece.
- PO 3 Determine the intended audience of a writing piece.
- PO 5 Use organizational strategies (e.g., outline, chart, table, graph, Venn Diagram, web, story map, plot pyramid) to plan writing.

W09-S1C2

Concept 2: Drafting (Grades 9-12): incorporates prewriting activities to create a first draft containing necessary elements for a specific purpose.

- PO 1 Use a prewriting plan to develop the main idea(s) with supporting details.
- PO 2 Sequence ideas into a cohesive, meaningful order.

W11-S3C3

Concept 3: Functional Writing (Grades 11-12): provides specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.

- PO 1 Write a work-related document (e.g., application, minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation, technical manual) that:
 - a. presents information purposefully and succinctly to meet the needs of the intended audience
 - b. follows a conventional format

6.4 Conduct an employee needs analysis for the organization based upon a business plan.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 1 Formulate questions to collect data in contextual situations.
- PO 2 Organize collected data into an appropriate graphical representation.
- PO 8 Make reasonable predictions for a set of data, based on patterns.
- PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.
- PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.
- PO 12 Recognize and explain the impact of interpreting data (making) inferences or drawing conclusions) from a biased sample.

6.5 Research business locations, facilities and equipment needs for the organization based upon the business plan.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 1 Formulate questions to collect data in contextual situations.
- PO 2 Organize collected data into an appropriate graphical representation.
- PO 8 Make reasonable predictions for a set of data, based on patterns.
- PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.
- PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.

- PO 12 Recognize and explain the impact of interpreting data (making inferences or drawing conclusions) from a biased sample.

Standard: Reading Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
PO 3 Identify the objective(s) of functional text (e.g., warranties, product

information, technical manuals, consumer publications, workplace documents).

- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.
PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

6.6 Analyze the relationship of customer service and customer satisfaction on the success of a business.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 1 Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise.
PO 3 Write an appropriate conjecture given a certain set of circumstances.
PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 1 Interpret data that show a variety of possible relationships between variables, including:

- *positive relationship
- *negative relationship
- *no relationship

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

- 6.7 Participate in any FFA CDE that requires knowledge or use of business plans, customer service skills and/or, customer satisfaction data.**
(standards not identified)

7.0 DEMONSTRATE BUSINESS AND FINANCIAL MANAGEMENT PRACTICES NEEDED IN AGRICULTURAL BUSINESS AND MANAGEMENT INDUSTRIES

7.1 Research and identify costs associated with supplying services in the Agricultural Business and Management field.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 1 Formulate questions to collect data in contextual situations.
- PO 2 Organize collected data into an appropriate graphical representation.
- PO 8 Make reasonable predictions for a set of data, based on patterns.
- PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.
- PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams,

illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)

- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt related and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing Strand 3: Writing Applications

W09-S3C6

Concept 6: Research Writing (Grades 9-12): is a process in which the writer identifies a topic or question to be answered. The writer locates and evaluates information about the topic or question, and then organizes, summarizes, and synthesizes the information into a finished product.

- PO 1 Write a research product that:
 - a. incorporates evidence in support of a thesis or claim
 - b. integrates information and ideas from multiple primary and secondary sources
 - c. makes distinctions between the relative value and significance of specific data, facts, and ideas
 - d. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - e. integrates direct quotes
 - f. uses internal citations
 - g. includes a works cited, bibliography, or reference page

7.2 Interpret financial information for decision making and planning.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.
- PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 1 Interpret data that show a variety of possible relationships between variables, including:
- *positive relationship
 - *negative relationship
 - *no relationship

7.3 Monitor and adjust business operation based on financial performance.

(standards not identified)

7.4 Demonstrate knowledge of checking and savings accounts and the ability to balance a checkbook.

(standards not identified)

7.5 Develop a Risk Management plan for SAE or business.

Standard: Writing

Strand 1: Writing Process

W09-S1C1

Concept 1: Prewriting (Grades 9-12): includes using strategies to generate, plan, and organize ideas for specific purposes.

- PO 1 Generate ideas through a variety of activities (e.g., brainstorming, notes and logs, graphic organizers, record of writing ideas and discussion, printed material or other sources).
- PO 2 Determine the purpose (e.g., to entertain, to inform, to communicate, to persuade, to explain) of an intended writing piece.
- PO 3 Determine the intended audience of a writing piece.
- PO 5 Use organizational strategies (e.g., outline, chart, table, graph, Venn Diagram, web, story map, plot pyramid) to plan writing.

W09-S1C2

Concept 2: Drafting (Grades 9-12): incorporates prewriting activities to create a first draft containing necessary elements for a specific purpose.

- PO 1 Use a prewriting plan to develop the main idea(s) with supporting details.
- PO 2 Sequence ideas into a cohesive, meaningful order.

W11-S3C3

Concept 3: Functional Writing (Grades 11-12): provides specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.

- PO 1 Write a work-related document (e.g., application, minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation, technical manual) that:
- a. presents information purposefully and succinctly to meet the needs of the

- b. intended audience
- b. follows a conventional format

7.6 Utilize the SAE record and planning book to record the business and financial management practices for all SAEs.

Standard: Writing

Strand 1: Writing Process

W11-S3C3

Concept 3: Functional Writing (Grades 11-12): provides specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.

- PO 1 Write a work-related document (e.g., application, minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation, technical manual) that:
- a. presents information purposefully and succinctly to meet the needs of the intended audience
 - b. follows a conventional format

8.0 EVALUATE LEADERSHIP STYLES APPROPRIATE FOR THE WORKPLACE

8.1 Describe how personal characteristics affect leadership ability.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered
 - includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - includes an effective conclusion

8.2 Investigate and evaluate leadership and management styles.

Standard: Reading

Strand 3: Comprehending Informational Text

R10-S3C1

Concept 1: Expository Text: (Grades 10-11) Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 4 Organize information from both primary and secondary sources by taking notes, outlining ideas, paraphrasing information; and by making charts, conceptual maps, learning logs and/or timelines for a research document or other assigned tasks. (Connected to Research Strand in Writing)
- PO 7 Make relevant inferences by synthesizing concepts and ideas from a single reading selection.
- PO 2 Distinguish among different kinds of evidence used to support conclusions (e.g., logical, empirical, anecdotal).
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.

8.3 Describe how cultural and ethnic differences affect leadership styles within a group.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing

supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

8.4 Describe how cultural and ethnic differences affect interpersonal interactions, teamwork and communications within a group.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

8.5 Describe different business etiquette practices.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential

- question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered
- h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
- i. includes an effective conclusion

9.0 PARTICIPATE IN LEADERSHIP ACTIVITIES AS PROVIDED BY THE FFA ORGANIZATION

9.1 Describe roles and responsibilities that FFA leaders and members bring to an organization.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered
 - includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - includes an effective conclusion

9.2 Evaluate characteristics and importance of an effective team player.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 1 Draw a simple valid conclusion from a given if . . . then statement and a minor premise.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.
- PO 2 Distinguish among different kinds of evidence used to support conclusions (e.g., logical, empirical, anecdotal).
- PO 3 Determine the accuracy and truthfulness of one source of information by examining evidence offered in the material itself and by referencing and comparing the evidence with information available from multiple sources.
- PO 4 Evaluate the evidence used to support the author’s perspective contained within both primary and secondary sources. (Connected to Research Strand in Writing)

Standard: Writing

Strand 3: Writing Applications

W09-S3C6

Concept 6: Research Writing (Grades 9-12): is a process in which the writer identifies a topic or question to be answered. The writer locates and evaluates information about the topic or question, and then organizes, summarizes, and synthesizes the information into a finished product.

- PO 1 Write a research product that:
 - a. incorporates evidence in support of a thesis or claim
 - b. integrates information and ideas from multiple primary and secondary sources
 - c. makes distinctions between the relative value and significance of specific data, facts, and ideas
 - d. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - e. integrates direct quotes
 - f. uses internal citations
 - g. includes a works cited, bibliography, or reference page

9.3 Evaluate characteristics of effective teams.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 1 Draw a simple valid conclusion from a given if . . . then statement and a minor premise.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.
- PO 2 Distinguish among different kinds of evidence used to support conclusions (e.g., logical, empirical, anecdotal).
- PO 3 Determine the accuracy and truthfulness of one source of information by examining evidence offered in the material itself and by referencing and comparing the evidence with information available from multiple sources.
- PO 4 Evaluate the evidence used to support the author’s perspective contained within both primary and secondary sources. (Connected to Research Strand in Writing)

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

9.4 Demonstrate teamwork through participation in CDE teams.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text

features (e.g., illustrations, titles, topic sentences, key words).

- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.
- PO 2 Distinguish among different kinds of evidence used to support conclusions (e.g., logical, empirical, anecdotal).
- PO 3 Determine the accuracy and truthfulness of one source of information by examining evidence offered in the material itself and by referencing and comparing the evidence with information available from multiple sources.
- PO 4 Evaluate the evidence used to support the author's perspective contained within both primary and secondary sources. (Connected to Research Strand in Writing)

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

9.5 Practice techniques to involve each member of the team.

(standards not identified)

9.6 Practice effective meeting management through participation at FFA meetings.

(standards not identified)

9.7 Develop and implement a personal and professional improvement plan as shown in the SAE Record and Planning book.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.
- PO 2 Distinguish among different kinds of evidence used to support conclusions (e.g., logical, empirical, anecdotal).
- PO 2 Determine the accuracy and truthfulness of one source of information by examining evidence offered in the material itself and by referencing and comparing the evidence with information available from multiple sources.
- PO 3 Evaluate the evidence used to support the author’s perspective contained within both primary and secondary sources. (Connected to Research Strand in Writing)

Standard: Writing

Strand 3: Writing Applications

W09-S3C6

Concept 6: Research Writing (Grades 9-12): is a process in which the writer identifies a topic or question to be answered. The writer locates and evaluates information about the topic or question, and then organizes, summarizes, and synthesizes the information into a finished product.

- PO 1 Write a research product that:
 - a. incorporates evidence in support of a thesis or claim
 - b. integrates information and ideas from multiple primary and secondary sources
 - c. makes distinctions between the relative value and significance of specific data, facts, and ideas
 - d. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - e. integrates direct quotes
 - f. uses internal citations
 - g. includes a works cited, bibliography, or reference page

9.8 Participate in FFA Career Development Events.
(standards not identified)

9.9 Practice decision-making process.
(standards not identified)

9.10 Participate in leadership activities through FFA offices and committees.
(standards not identified)

Applied Biological Systems (ABS) Agriculture
CIP No. 01.0101.10 (Introduction to Applied Biological Systems)
CIP No. 01.0101.11 (Applied Biological Systems)

10.0 DEMONSTRATE LABORATORY PROCEDURES AND SAFETY PRACTICES

10.1 Demonstrate safe practices in a home, classroom, laboratory and work situation.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 1 Demonstrate safe and ethical procedures (e.g., use and care of technology, materials, organisms) and behavior in all science inquiry.

10.2 Identify careers that involve working with hazardous biological materials.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order,

comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.

PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).

PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.

PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).

PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

PO 2 Identify the resources needed to conduct an investigation.

PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

Standard: Writing Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

PO 1 Write an explanatory, multi-paragraph essay that:

- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

10.3 Know the value of safety to employees (standards not identified)

10.4 Discuss the impact of safety compliance on business.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

PO 1 Write an explanatory, multi-paragraph essay that:

- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

10.5 Identify safety precautions associated with biotechnology.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) reading on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence,

- reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
 - PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
 - PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
 - PO 8 Support conclusions drawn from ideas and concepts on expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C1

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 1 Demonstrate safe and ethical procedures (e.g., use and care of technology, materials, organisms) and behavior in all science inquiry.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph

g. includes relevant factors and variables that need to be considered

10.6 Safely operate and maintain equipment.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C1

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

PO 1 Demonstrate safe and ethical procedures (e.g., use and care of technology, materials, organisms) and behavior in all science inquiry.

11.0 DESCRIBE ANIMAL HEALTH NEEDS

11.1 Explore the cells, tissues and organs in animals.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

- PO 5 Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.

11.2 Describe the epidermis system.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

- PO 5 Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential

- question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

11.3 Describe the musculoskeletal system.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

PO 5 Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

11.4 Describe the nervous system.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

PO 5 Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to

ecosystem.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

11.5 Describe the circulatory system.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

- PO 5 Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

11.6 Describe the respiratory system.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

- PO 5 Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

11.7 Describe the digestive system.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

- PO 5 Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:

- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

11.8 Describe the urinary system

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

- PO 5 Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

11.9 Describe the reproductive system

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

- PO 5 Describe the levels of organization of living things from cells, through

tissues, organs, organ systems, organisms, populations, and communities to ecosystems.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

11.10 Describe the endocrine system

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

- PO 5 Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. Attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph

- g. includes relevant factors and variables that need to be considered.

11.11 Discuss how biotechnology has influenced animal health.

Standard: Science (High School)

SCHS-S2C1

Strand 2: History and Nature of Science

Concept 1: History of Science as a Human Endeavor

- PO 3 Analyze how specific changes in science have affected society.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

11.12 Explain how biotechnology has influenced animal medicines.

Standard: Science (High School)

Strand 2: History and Nature of Science

SCHS-S2C1

Concept One: History of Science as a Human Endeavor

- PO 3 Analyze how specific changes in science have affected society.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate

- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

11.13 Compare the impact of biotechnology on the length and quality of animal life.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 8 Make reasonable predictions for a set of data, based on patterns.
- PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.
- PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.
- PO 14 Determine whether a displayed data has positive, negative, or no correlation.

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide

words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)

- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 1 Interpret data that show a variety of possible relationships between variables, including:
 - *positive relationship
 - *negative relationship
 - *no relationship

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a

- thesis based on research, observation, and/or experience.
- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

11.14 Explore careers in the health care field and/or veterinary care field.

Standard: Reading

Strand 3: Comprehending Informational Text

R10-S3C1

Concept 1: Expository Text: (Grade 10) Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 4 Organize information from both primary and secondary sources by taking notes, outlining ideas, paraphrasing information; and by making charts, conceptual maps, learning logs and/or timelines for a research document or other assigned tasks. (Connected to Research Strand in Writing)
- PO 7 Make relevant inferences by synthesizing concepts and ideas from a single reading selection.
- PO 2 Distinguish among different kinds of evidence used to support conclusions (e.g., logical, empirical, anecdotal).
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.
- PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

11.15 Explore benefits to health care that have resulted from advances in technology.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 8 Make reasonable predictions for a set of data, based on patterns.

- PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.
- PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.
- PO 14 Determine whether a displayed data has positive, negative, or no correlation.

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.

12.0 DESCRIBE BASIC PRINCIPLES OF NUTRITION

12.1 Define the essential nutrients.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

Strand 3: Comprehending Informational Text

R10-S3C1

Concept 1: Expository Text: (Grade 10): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 4 Organize information from both primary and secondary sources by taking notes, outlining ideas, paraphrasing information; and by making charts, conceptual maps, learning logs and/or timelines for a research document or other assigned tasks. (Connected to Research Strand in Writing)
- PO 7 Make relevant inferences by synthesizing concepts and ideas from a single reading selection.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes. PO 1 Describe the role of energy in cellular growth, development, and repair. PO 3 Explain the importance of water to cells.

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

- PO 2 Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.

Standard Writing

Strand 1:

W09-S1C3

Concept 3: Revising (Grades 9-12): Revising includes evaluating and refining the rough draft for clarity and effectiveness. (Ask: Does this draft say what you want it to say?)

- PO 8 Use resources and reference materials (e.g., thesaurus, dictionary) to select more effective and precise language.

12.2 Explore the nutritional needs of humans.

Standard: Reading

Strand 3: Comprehending Informational Text

R10-S3C1

Concept 1: Expository Text: (Grade 10) Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 4 Organize information from both primary and secondary sources by taking notes, outlining ideas, paraphrasing information; and by making charts, conceptual maps, learning logs and/or timelines for a research document or other assigned tasks. (Connected to Research Strand in Writing)
- PO 7 Make relevant inferences by synthesizing concepts and ideas from a single reading selection.
- PO 2 Distinguish among different kinds of evidence used to support conclusions (e.g., logical, empirical, anecdotal).
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes.

- PO 1 Describe the role of energy in cellular growth, development, and repair.
- PO 3 Explain the importance of water to cells.

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

- PO 2 Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.

12.3 Explore the nutritional needs of animals.

Standard: Reading

Strand 3: Comprehending Informational Text

R10-S3C1

Concept 1: Expository Text: (Grade 10) Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 4 Organize information from both primary and secondary sources by taking notes, outlining ideas, paraphrasing information; and by making charts, conceptual maps, learning logs and/or timelines for a research document or other assigned tasks. (Connected to Research Strand in Writing)
- PO 7 Make relevant inferences by synthesizing concepts and ideas from a single reading selection.
- PO 2 Distinguish among different kinds of evidence used to support conclusions (e.g., logical, empirical, anecdotal).
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes.

- PO 1 Describe the role of energy in cellular growth, development, and repair.
- PO 3 Explain the importance of water to cells.

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

- PO 2 Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.

12.4 Explore the nutritional needs of plants.

Standard: Reading

Strand 3: Comprehending Informational Text

R10-S3C1

Concept 1: Expository Text: (Grades 10-11) Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 4 Organize information from both primary and secondary sources by taking notes, outlining ideas, paraphrasing information; and by making charts, conceptual maps, learning logs and/or timelines for a research document or other assigned tasks. (Connected to Research Strand in Writing)
- PO 7 Make relevant inferences by synthesizing concepts and ideas from a single reading selection.
- PO 2 Distinguish among different kinds of evidence used to support conclusions (e.g., logical, empirical, anecdotal).
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes.

- PO 1 Describe the role of energy in cellular growth, development, and repair.
- PO 3 Explain the importance of water to cells.

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

- PO 2 Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.

12.5 Explain the process of food digestion.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe

- solutions and recognize their applications.
- PO 2 List related if . . . then statements in logical order.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

12.6 Describe nutrient absorption.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes.

- PO 4 Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells:
- *passive transport
 - *active transport

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

12.7 Identify common nutrient problems.
Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

PO 1 Draw a simple valid conclusion from a given if . . . then statement and a minor premise.

PO 2 List related if . . . then statements in logical order.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).

PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)

PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.

PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)

PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.

PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).

PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.

PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).

PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

12.8 Compare the impact of biotechnology on the production, processing, storage and preparation of food.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ

strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

PO 1 Interpret data that show a variety of possible relationships between variables, including:

- *positive relationship
- *negative relationship
- *no relationship

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

PO 1 Write an explanatory, multi-paragraph essay that:

- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered
- h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
- i. includes an effective conclusion

12.9 Discuss how biotechnology has improved nutrition.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.

PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.

PO 14 Determine whether a displayed data has positive, negative, or no correlation.

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

PO 3 Write an appropriate conjecture given a certain set of circumstances.

PO 4 Analyze assertions related to a contextual situation by using principles of

logic.

Standard: Science (High School)

SCHS-S2C1

Strand 2: History and Nature of Science

Concept 1: History of Science as a Human Endeavor

PO 3 Analyze how specific changes in science have affected society.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential questions) as appropriate.
 - b. states a thesis (Hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

12.10 Explore careers in the field of nutrition.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes.

PO 1 Describe the role of energy in cellular growth, development, and repair.

PO 3 Explain the importance of water to cells.

12.11 Report new agricultural products developed as a result of advances in technology

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

PO 1 Write an explanatory, multi-paragraph essay that:

- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

13.0 EXAMINE THE INTERACTION OF BIOLOGICAL SYSTEMS WITHIN THE ENVIRONMENT

13.1 Discuss the different classifications of natural resources in the environment.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

13.2 Identify fossil fuels found in the environment.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)

- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

13.3 Describe soil resources found in the environment.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

13.4 Identify the effects of pest control methods on the environment.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.
PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.
PO 14 Determine whether a displayed data has positive, negative, or no correlation.

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 1 Draw a simple valid conclusion from a given if . . . then statement and a minor premise.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
PO 4 Connect information and events in text to experience and to related text and

sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 3: Science in Personal and Social Perspectives

S09-S3C1

Concept 1: Changes in Environments: Describe the interactions between human populations, natural hazards, and the environment.

- PO 1 Evaluate how the processes of natural ecosystems affect, and are affected by humans.

Standard: Writing Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes,

explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

13.5 Discuss environmental issues related to water resources.

Standard: Science (High School)

Strand 6: Earth and Space Science

SCHS-S6C1

Concept 1: Geochemical Cycles: Analyze the interactions between the Earth's structures, atmosphere, and geochemical cycles.

PO 5 Describe factors that impact current and future water quantity and quality including surface, ground, and local water issues.

PO 6 Analyze methods of reclamation and conservation of water.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

13.6 Identify air and atmospheric resources.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meaning, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spelling by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 6: Earth and Space Science

SCHS-S6C2

Concept 2: Energy in the Earth System (Both Internal and External): Understand the relationships between the Earth's land masses, oceans, and atmosphere.

PO 11 Describe the origin, life cycle, and behavior of weather systems (i.e., air mass, front, high and low systems, pressure gradients).

PO 14 Analyze how weather is influenced by both natural and artificial earth features (e.g., mountain ranges, bodies of water, cities, air pollution).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

PO 1 Write an explanatory, multi-paragraph essay that:

- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

13.7 Describe the effects of technology and biotechnology on the environment.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.

PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.

PO 14 Determine whether a displayed data has positive, negative, or no correlation.

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

PO 1 Draw a simple valid conclusion from a given if . . . then statement and a minor premise.

Standard: Science (High School)

Strand 3: Science in Personal and Social Perspectives

SCHS-S3C1

Concept 1: Changes in Environments: Describe the interactions between human populations, natural hazards, and the environment.

- PO 1 Evaluate how the processes of natural ecosystems affect, and are affected by humans.
- PO 2 Describe the environmental effects of the following natural and/or human-caused hazards:
 - *flooding
 - *drought
 - *earthquakes
 - *fires
 - *pollution
 - *extreme weather
- PO 3 Assess how human activities (e.g., clear cutting, water management, tree thinning) can affect the potential for hazards.
- PO 4 Evaluate the following factors that affect the quality of the environment:
 - *urban development
 - *smoke
 - *volcanic dust
- PO 5 Evaluate the effectiveness of conservation practices and preservation techniques on environmental quality and biodiversity.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

13.8 Explore careers related to natural resources and the environment.

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.
- PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

13.9 Describe benefits to the environment as a result of advances in technology.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection,

organization and representation to analyze and sort data.

PO 8 Make reasonable predictions for a set of data, based on patterns.

PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.

PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.

PO 14 Determine whether a displayed data has positive, negative, or no correlation.

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

PO 3 Write an appropriate conjecture given a certain set of circumstances.

PO 4 Analyze assertions related to a contextual situation by using principles of logic.

PO 1 Draw a simple valid conclusion from a given if . . . then statement and a minor premise.

PO 2 List related if . . . then statements in logical order.

PO 3 Write an appropriate conjecture given a certain set of circumstances.

PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

PO 1 Write an explanatory, multi-paragraph essay that:

a. includes background information to establish the thesis (hypothesis, essential question) as appropriate

b. states a thesis (hypothesis, essential question) with a narrow focus

c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons

d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate

e. attributes sources of information as appropriate

f. includes a topic sentence for each body paragraph

g. includes relevant factors and variables that need to be considered

14.0 DESCRIBE PRINCIPLES OF PLANT GROWTH PRODUCTION

14.1 Identify parts of plants and their functions.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product

- information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

14.2 Explore methods of classifying plants.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C4

- PO 6 Analyze, using a biological classification system (i.e., cladistics, phylogeny, morphology, DNA analysis), the degree of relatedness among various species.

14.3 Recognize the physiological needs of plants.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product

information, technical manuals, consumer publications, workplace documents).

- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes.

- PO 1 Describe the role of energy in cellular growth, development, and repair.
PO 3 Explain the importance of water to cells.

SCHS-S4C5

Concept 5: Matter, Energy and Organization in Living Systems (Including Humans Systems): Understand the organization of living systems and the role of energy within those systems.

- PO 2 Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

14.4 Explain plant reproduction.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus

- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

14.5 Investigate plant tissue culture techniques.

(standards not identified)

14.6 Explore careers that utilize biotechnology skills in the growth and production of plants.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.
- PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

14.7 Discuss the effects of plant biotechnology in sustainable agriculture systems.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 8 Make reasonable predictions for a set of data, based on patterns.
- PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.
- PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.
- PO 14 Determine whether a displayed data has positive, negative, or no

correlation.

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

PO 3 Write an appropriate conjecture given a certain set of circumstances.

PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Writing Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

PO 1 Write an explanatory, multi-paragraph essay that:

- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

15.0 DESCRIBE PRINCIPLES OF ANIMAL GROWTH AND PRODUCTION

15.1 Recognize the physiological needs of living animals.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12):

Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.

- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes.

- PO 1 Describe the role of energy in cellular growth, development, and repair.
- PO 3 Explain the importance of water to cells.

SCHS-S4C5

Concept 5: Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.

- PO 2 Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

15.2 Explore animal health control practices.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and

sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.

15.3 Explain animal reproduction practices.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

PO 1 Write an explanatory, multi-paragraph essay that:

- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

15.4 Describe the use of biotechnology in animal growth and reproduction

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

PO 1 Write an explanatory, multi-paragraph essay that:

- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

15.5 Explore careers in animal growth and production

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.
- PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

16.0 USE SCIENTIFIC PROCESSES TO ANALYZE DATA

16.1 Formulate predictions, questions, or hypotheses based on observations.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

PO 1 Formulate questions to collect data in contextual situations.

PO 8 Make reasonable predictions for a set of data, based on patterns.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C1

Concept 1: Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.

PO 2 Develop questions from observations that transition into testable hypotheses.

PO 3 Formulate a testable hypothesis.

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

PO 2 Identify the resources needed to conduct an investigation.

PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

PO 7 Propose further investigations based on the findings of a conducted investigation.

SCHS-S1C4

Concept 4: Communication: Communicate results of investigations.

PO 1 For a specific investigation, choose an appropriate method for communicating the results.

PO 3 Communicate results clearly and logically.

Standard: Writing

Strand 1: Writing Process

W09-S1C1

Concept 1: Prewriting (Grades 9-12): includes using strategies to generate, plan, and organize ideas for specific purposes.

PO 1 Generate ideas through a variety of activities (e.g., brainstorming, notes and logs, graphic organizers, record of writing ideas and discussion, printed material or other sources).

PO 2 Determine the purpose (e.g., to entertain, to inform, to communicate, to persuade, to explain) of an intended writing piece.

- PO 3 Determine the intended audience of a writing piece.
- PO 4 Establish a controlling idea appropriate to the type of writing.
- PO 5 Use organizational strategies (e.g., outline, chart, table, graph, Venn Diagram, web, story map, plot pyramid) to plan writing.

16.2 Evaluate appropriate resources.

Standard: Reading

Strand 3: Comprehending Informational Text

R10-S3C1

Concept 1: Expository Text: (Grade 10) Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 2 Distinguish among different kinds of evidence used to support conclusions (e.g., logical, empirical, anecdotal).
- PO 2 Determine the accuracy and truthfulness of one source of information by examining evidence offered in the material itself and by referencing and comparing the evidence with information available from multiple sources.
- PO 3 Evaluate the evidence used to support the author’s perspective contained within both primary and secondary sources. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C1

Concept 1: Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.

- PO 2 Develop questions from observations that transition into testable hypotheses.
- PO 3 Formulate a testable hypothesis.

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.
- PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 7 Propose further investigations based on the findings of a conducted investigation.

SCHS-S1C4

Concept 4: Communication: Communicate results of investigations.

- PO 1 For a specific investigation, choose an appropriate method for communicating the results.

PO 3 Communicate results clearly and logically.

16.3 Illustrate the scientific method.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C1

Concept 1: Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.

PO 2 Develop questions from observations that transition into testable hypotheses.

PO 3 Formulate a testable hypothesis.

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

PO 2 Identify the resources needed to conduct an investigation.

PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

PO 7 Propose further investigations based on the findings of a conducted investigation.

SCHS-S1C4

Concept 4: Communication: Communicate results of investigations.

PO 1 For a specific investigation, choose an appropriate method for communicating the results.

PO 3 Communicate results clearly and logically.

16.4 Design and conduct controlled investigations.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C1

Concept 1: Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.

PO 2 Develop questions from observations that transition into testable hypotheses.

PO 3 Formulate a testable hypothesis.

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

PO 2 Identify the resources needed to conduct an investigation.

PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design

models.

- PO 7 Propose further investigations based on the findings of a conducted investigation.

SCHS-S1C4

Concept 4: Communication: Communicate results of investigations.

- PO 1 For a specific investigation, choose an appropriate method for communicating the results.

- PO 3 Communicate results clearly and logically.

16.5 Evaluate experimental design.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C1

Concept 1: Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.

- PO 2 Develop questions from observations that transition into testable hypotheses.

- PO 3 Formulate a testable hypothesis.

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.

- PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 7 Propose further investigations based on the findings of a conducted investigation.

SCHS-S1C4

Concept 4: Communication: Communicate results of investigations.

- PO 1 For a specific investigation, choose an appropriate method for communicating the results.

- PO 3 Communicate results clearly and logically.

16.6 Analyze data to explain results and propose further investigations.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 8 Make reasonable predictions for a set of data, based on patterns.

- PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.

- PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.

- PO 12 Recognize and explain the impact of interpreting data (making inferences or drawing conclusions) from a biased sample.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C1

Concept 1: Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.

- PO 2 Develop questions from observation that transition into testable hypotheses.
PO 3 Formulate a testable hypothesis.

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.
PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 7 Propose further investigations based on the findings of a conducted investigation.

SCHS-S1C4

Concept 4: Communication: Communicate results of investigations.

- PO 1 For a specific investigation, choose an appropriate method for communicating the results.
PO 3 Communicate results clearly and logically.

Standard: Reading Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository

text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph

- g. includes relevant factors and variables that need to be considered

16.6 Design models.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C1

Concept 1: Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.

PO 2 Develop questions from observations that transition into testable hypotheses.

PO 3 Formulate a testable hypothesis.

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

PO 2 Identify the resources needed to conduct an investigation.

PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

PO 7 Propose further investigations based on the findings of a conducted investigation.

SCHS-S1C4

Concept 4: Communication: Communicate results of investigations.

PO 1 For a specific investigation, choose an appropriate method for communicating the results.

PO 3 Communicate results clearly and logically.

16.7 Communicate results of investigations.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C4

Concept 4: Communication: Communicate results of investigations.

PO 1 For a specific investigation, choose an appropriate method for communicating the results.

PO 3 Communicate results clearly and logically.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

PO 1 Write an explanatory, multi-paragraph essay that:

a. includes background information to establish the thesis (hypothesis, essential

- question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in
- d. communicated information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

17.0 ANALYZE THE RELATIONSHIPS WITHIN LIVING SYSTEMS

17.1 Explain the role of the cell and cellular processes.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes.

- PO 1 Describe the role of energy in cellular growth, development, and repair.
- PO 2 Compare the form and function of prokaryotic and eukaryotic cells and their cellular components.
- PO 3 Explain the importance of water to cells.
- PO 4 Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells:
 - *passive transport
 - *active transport
- PO 5 Describe the purposes and processes of cellular reproduction.

SCHS-S4C2

Concept 2: Molecular Basis of Heredity: Understand the molecular basis of heredity and resulting genetic diversity.

- PO 1 Analyze the relationships among nucleic acids (DNA, RNA), genes, and chromosomes.
- PO 2 Describe the molecular basis of heredity, in viruses and living things, including DNA replication and protein synthesis.
- PO 3 Explain how genotypic variation occurs and results in phenotypic diversity.
- PO 4 Describe how meiosis and fertilization maintain genetic variation.

SCHS-S4C3

Concept 3: Interdependence of Organisms: Analyze the relationships among various organisms and their environment.

- PO 1 Identify the relationships among organisms within populations, communities, ecosystems, and biomes.
- PO 2 Describe how organisms are influenced by a particular combination of biotic (living) and abiotic (nonliving) factors in an environment.
- PO 3 Assess how the size and the rate of growth of a population are determined by birth rate, death rate, immigration, emigration, and carrying capacity of the environment.

SCHS-S4C5

Concept 5: Matter, Energy and Organization in Living Systems (Including Humans Systems): Understand the organization of living systems and the role of energy within those systems.

- PO 2 Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

17.2 Examine the molecular basis of heredity and resulting genetic diversity.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy,

definition, narrative) to interpret text.

PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).

PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.

PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).

PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes.

PO 1 Describe the role of energy in cellular growth, development, and repair.

PO 2 Compare the form and function of prokaryotic and eukaryotic cells and their cellular components.

PO 3 Explain the importance of water to cells.

PO 4 Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells:

*passive transport

*active transport

PO 5 Describe the purposes and processes of cellular reproduction.

SCHS-S4C2

Concept 2: Molecular Basis of Heredity: Understand the molecular basis of heredity and resulting genetic diversity.

PO 1 Analyze the relationships among nucleic acids (DNA, RNA), genes, and chromosomes.

PO 2 Describe the molecular basis of heredity, in viruses and living things, including DNA replication and protein synthesis.

PO 3 Explain how genotypic variation occurs and results in phenotypic diversity.

PO 4 Describe how meiosis and fertilization maintain genetic variation.

SCHS-S4C3

Concept 3: Interdependence of Organisms: Analyze the relationships among various organisms and their environment.

PO 1 Identify the relationships among organisms within populations, communities, ecosystems, and biomes.

PO 2 Describe how organisms are influenced by a particular combination of biotic (living) and abiotic (nonliving) factors in an environment.

PO 3 Assess how the size and the rate of growth of a population are determined by

birth rate, death rate, immigration, emigration, and carrying capacity of the environment.

SCHS-S4C5

Concept 5: Matter, Energy and Organization in Living Systems (Including Humans Systems): Understand the organization of living systems and the role of energy within those systems.

PO 2 Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

17.3 Analyze the relationships among various organisms and their environment.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

PO 3 Write an appropriate conjecture given a certain set of circumstances.

PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ

strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes.

- PO 1 Describe the role of energy in cellular growth, development, and repair.

- PO 2 Compare the form and function of prokaryotic and eukaryotic cells and their cellular components.
- PO 3 Explain the importance of water to cells.
- PO 4 Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells:
 - *passive transport
 - *active transport
- PO 5 Describe the purposes and processes of cellular reproduction.

SCHS-S4C2

Concept 2: Molecular Basis of Heredity: Understand the molecular basis of heredity and resulting genetic diversity.

- PO 1 Analyze the relationships among nucleic acids (DNA, RNA), genes, and chromosomes.
- PO 2 Describe the molecular basis of heredity, in viruses and living things, including DNA replication and protein synthesis.
- PO 3 Explain how genotypic variation occurs and results in phenotypic diversity.
- PO 4 Describe how meiosis and fertilization maintain genetic variation.

SCHS-S4C3

Concept 3: Interdependence of Organisms: Analyze the relationships among various organisms and their environment.

- PO 1 Identify the relationships among organisms within populations, communities, ecosystems, and biomes.
- PO 2 Describe how organisms are influenced by a particular combination of biotic (living) and abiotic (nonliving) factors in an environment.
- PO 3 Assess how the size and the rate of growth of a population are determined by birth rate, death rate, immigration, emigration, and carrying capacity of the environment.

SCHS-S4C5

Concept 5: Matter, Energy and Organization in Living Systems (Including Humans Systems): Understand the organization of living systems and the role of energy within those systems.

- PO 2 Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.

Standard: Writing Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate

- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

17.4 Portray the scientific principles and processes involved in biological evolution.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C4

Concept 4: Biological Evolution: Understand the scientific principles and processes involved in biological evolution.

- PO 1 Identify the following components of natural selection, which can lead to speciation:
 - *potential for a species to increase its numbers
 - *genetic variability and inheritance of offspring due to mutation and recombination of genes
 - *finite supply of resources required for life
 - *selection by the environment of those offspring better able to survive and produce offspring
- PO 2 Explain how genotypic and phenotypic variation can result in adaptations that influence an organism's success in an environment.
- PO 3 Describe how the continuing operation of natural selection underlies a population's ability to adapt to changes in the environment and leads to biodiversity and the origin of new species.
- PO 4 Predict how a change in an environmental factor (e.g., rainfall, habitat loss, non-native species) can affect the number and diversity of species in an ecosystem.
- PO 5 Analyze how patterns in the fossil record, nuclear chemistry, geology, molecular biology, and geographical distribution give support to the theory of organic evolution through natural selection over billions of years and the resulting present day biodiversity.
- PO 6 Analyze, using a biological classification system (i.e., cladistics, phylogeny, morphology, DNA analysis), the degree of relatedness among various species.

17.5 Analyze the organization of living systems.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).

- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes.

- PO 1 Describe the role of energy in cellular growth, development, and repair.
- PO 2 Compare the form and function of prokaryotic and eukaryotic cells and their cellular components.
- PO 3 Explain the importance of water to cells.
- PO 4 Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells:

*passive transport

*active transport

PO 5 Describe the purposes and processes of cellular reproduction.

SCHS-S4C2

Concept 2: Molecular Basis of Heredity: Understand the molecular basis of heredity and resulting genetic diversity.

PO 1 Analyze the relationships among nucleic acids (DNA, RNA), genes, and chromosomes.

PO 2 Describe the molecular basis of heredity, in viruses and living things, including DNA replication and protein synthesis.

PO 3 Explain how genotypic variation occurs and results in phenotypic diversity.

PO 4 Describe how meiosis and fertilization maintain genetic variation.

SCHS-S4C3

Concept 3: Interdependence of Organisms: Analyze the relationships among various organisms and their environment.

PO 1 Identify the relationships among organisms within populations, communities, ecosystems, and biomes.

PO 2 Describe how organisms are influenced by a particular combination of biotic (living) and abiotic (nonliving) factors in an environment.

PO 3 Assess how the size and the rate of growth of a population are determined by birth rate, death rate, immigration, emigration, and carrying capacity of the environment.

SCHS-S4C5

Concept 5: Matter, Energy and Organization in Living Systems (Including Humans Systems): Understand the organization of living systems and the role of energy within those systems.

PO 2 Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

17.6 Recognize the role of energy within living systems.

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes.

- PO 1 Describe the role of energy in cellular growth, development, and repair.
- PO 2 Compare the form and function of prokaryotic and eukaryotic cells and their cellular components.
- PO 3 Explain the importance of water to cells.
- PO 4 Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells: · passive transport · active transport
- PO 5 Describe the purposes and processes of cellular reproduction.

SCHS-S4C2

Concept 2: Molecular Basis of Heredity: Understand the molecular basis of heredity and resulting genetic diversity.

- PO 1 Analyze the relationships among nucleic acids (DNA, RNA), genes, and chromosomes.
- PO 2 Describe the molecular basis of heredity, in viruses and living things, including DNA replication and protein synthesis.
- PO 3 Explain how genotypic variation occurs and results in phenotypic diversity.
- PO 4 Describe how meiosis and fertilization maintain genetic variation.

SCHS-S4C3

Concept 3: Interdependence of Organisms: Analyze the relationships among various organisms and their environment.

- PO 1 Identify the relationships among organisms within populations, communities, ecosystems, and biomes.
- PO 2 Describe how organisms are influenced by a particular combination of biotic (living) and abiotic (nonliving) factors in an environment.
- PO 3 Assess how the size and the rate of growth of a population are determined by birth rate, death rate, immigration, emigration, and carrying capacity of the environment.

SCHS-S4C5

Concept 5: Matter, Energy and Organization in Living Systems (Including Humans Systems): Understand the organization of living systems and the role of energy within those systems.

- PO 2 Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.

18.0 DISCUSS BIOETHICAL ISSUES

18.1 Explore the ethical considerations related to using biotechnology to improve human health.

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.
- PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

18.2 Discuss ethical considerations related to using biotechnology to produce and process human food.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph

- g. includes relevant factors and variables that need to be considered

18.3 Identify ethical considerations related to using biotechnology to improve the production of animals.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability

- of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

18.4 Describe the ethical considerations businesses face when deciding to sell food produced using biotechnology.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

Laboratory-Based Integrated Science I

CIP No. 01.0100.10

19.0 DESCRIBE FOOD SAFETY AND PROCESSING PRACTICES

19.1 Identify food safety practices.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

19.2 Describe food-processing practices.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

19.3 Examine the effects of biotechnology on food safety and processing techniques.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.
- PO 1 Draw a simple valid conclusion from a given if . . . then statement and a minor premise.
- PO 2 List related if . . . then statements in logical order.

- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

19.4 Explore careers in the food industry

Standard: Reading

Strand 1: Reading Process

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Compare (and contrast) original text to a summary for accuracy of the main ideas, inclusion of critical details, and the extent to which it conveys the underlying meaning of the original text.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.
- PO 5 Record observations, notes, sketches, questions, and ideas using tools such as

journals, charts, graphs, and computers.

19.5 Identify new and innovative food products developed as a result of advances in technology

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 8 Make reasonable predictions for a set of data, based on patterns.
- PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.
- PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.
- PO 14 Determine whether a displayed data has positive, negative, or no correlation.

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.
- PO 1 Draw a simple valid conclusion from a given if . . . then statement and a minor premise.
- PO 2 List related if . . . then statements in logical order.
- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meaning, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spelling by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-12): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate

- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

20.0 INVESTIGATE ETHICS IN THE AGRICULTURE INDUSTRY

20.1 Assess ethics
(standards not identified)

20.2 Evaluate business dealings with friends, family, or competitors
(standards not identified)

20.3 Evaluate pricing and sales incentives

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.

PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

PO 1 Write an explanatory, multi-paragraph essay that:

- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

20.4 Analyze potential environmental damage of agriculture practices.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Science (High School)

Strand 3: Science in Social and Personal Perspectives

SCHS-S3C1

Concept 1: Changes in Environments: Describe the interactions between human

- populations, natural hazards, and the environment.
- PO 1 Evaluate how the processes of natural ecosystems affect, and are affected by, humans.
- PO 3 Assess how human activities (e.g., clear cutting, water management, tree thinning) can affect the potential for hazards.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

20.5 Describe sustainable agriculture.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, and word choice influence the clarity and understandability of functional text.
- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its states purpose(s).

21.0 INVESTIGATE APPROVED BIOTECHNOLOGY TECHNIQUES

21.1 Specify methods and requirements by which an organism's genetic code can be altered using biotechnology techniques.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and

- understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

21.2 Explain the process of embryo transfer techniques.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

21.3 Demonstrate propagation techniques using tissue culture.

(standards not identified)

21.4 Detect biotechnology techniques that have contributed to improve health.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).

PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)

PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.

PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)

PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.

PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).

PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.

PO 3 Identify the objective(s) of functional text (e.g., warranties, product information,

- technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

21.5 Explore methods of using biotechnology to improve production.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the

- purpose, structures, clarity, and relevancy of functional text.
- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

21.6 Justify the purposes and processes of growth regulators.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

21.7 Describe how scientists continue to investigate and critically analyze DNA cloning.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph

- g. includes relevant factors and variables that need to be considered

21.8 Express the use of jumping genes.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

PO 1 Write an explanatory, multi-paragraph essay that:

- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

21.9 Examine careers in the biotechnology industry.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)

- PO 4 Compare (and contrast) reading on the same topic, by explaining how authors reach the same or different conclusion based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt related and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

21.10 Analyze how specific cultural and/or social issues promote or hinder scientific advancements.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meaning, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spelling by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).

- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate states a thesis (hypothesis, essential question) with a narrow focus
 - b. includes evidence in support of a thesis (hypothesis, essential question) in the form a details, facts, examples or reasons
 - c. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - d. includes a topic sentence for each body paragraph
 - e. includes relevant factors and variables that need to be considered.

22.0 INVESTIGATE APPROVED PRACTICES OF DISEASE CONTROL

22.1 Differentiate between common diseases.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 1 Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise.
- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

22.2 Assess symptoms of common diseases and parasites.

(standards not identified)

22.3 Evaluate economic impact of diseases on production.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide

words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)

- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 1 Interpret data that show a variety of possible relationships between variables, including:
 - *positive relationship
 - *negative relationship
 - *no relationship

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:

- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
- b. states a thesis (hypothesis, essential question) with a narrow focus
- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph

22.4 Compare methods by which diseases are spread

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

PO 1 Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise.

PO 3 Write an appropriate conjecture given a certain set of circumstances.

PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

PO 1 Interpret data that show a variety of possible relationships between variables, including:

*positive relationship

*negative relationship

*no relationship

22.5 Evaluate the most economical and environmentally safe disease control and prevention methods.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

PO 8 Make reasonable predictions for a set of data, based on patterns.

PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.

PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.

PO 12 Recognize and explain the impact of interpreting data (making inferences or drawing conclusions) from a biased sample.

Standard: Reading Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meaning, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spelling by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).

- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 1 Interpret data that show a variety of possible relationships between variables, including:
- *positive relationship
 - *negative relationship
 - *no relationship

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

22.5 Conduct an investigation on an infected field/organism.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.

22.7 Record observations, notes, sketches, questions, and ideas during the investigation.

Standard: Science (High School)

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct

controlled investigations.

PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

22.8 Propose corrective actions needed to treat an infected field/organism.
(standards not identified)

23.0 INVESTIGATE APPROVED NUTRITIONAL PRACTICES

23.1 Determine the essential nutrients for organisms and describe their importance.

Standard: Reading

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes.

PO 1 Describe the role of energy in cellular growth, development, and repair.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

23.2 Research common nutrient deficiency symptoms and treatment options.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 1 Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise.
- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations,

- titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.
- PO 5 Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.

23.4 Evaluate diagnosis, treatment, and prevention of nutrient deficiency.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.
- PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the

- d. form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 1 Interpret data that show a variety of possible relationships between variables, including:
 - *positive relationship
 - *negative relationship
 - *no relationship

23.5 Inspect supplemental and additive ration/fertilizer composition.
(standards not identified)

23.6 Prepare tissue samples for testing and diagnosis.
(standards not identified)

23.7 Test methods of fertilizer/nutrient application.
(standards not identified)

23.8 Compare the relationship between nutrient practices and yield amounts.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 1 Interpret data that show a variety of possible relationships between variables, including:
 - *positive relationship
 - *negative relationship
 - *no relationship

24.0 ANALYZE THE INTERACTION AMONG ENVIRONMENTAL AND NATURAL RESOURCES SCIENCES

24.1 Evaluate environmental and natural resource sciences.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and

- understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered

24.2 Demonstrate how dynamic processes such as weathering, erosion, and sedimentation relate to redistribution of materials in the earth system.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 1 Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise.
- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Science (High School)

Strand 6: Earth and Space Science

SCHS-S6C1

Concept One: Analyze the interactions between the Earth's structures, atmosphere, and geochemical cycles.

- PO 5 Describe factors that impact current and future water quantity, quality including surface, ground and local water issues

24.3 Investigate soil morphology.
(standards not identified)

24.4 Illustrate land-use and water-use planning.
(standards not identified)

24.5 Explain factors that impact current and future water quantity and quality including surface, ground, and local water issues.

Standard: Science (High School)

Strand 6: Earth and Space Science

SCHS-S6C1

Concept One: Analyze the interactions between the Earth’s structures, atmosphere, and geochemical cycles

PO 5 Describe factors that impact current and future water quantity, quality including surface, ground and local water issues.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

24.6 Define bio-fuels and how they are affecting the environment.
(standards not identified)

24.7 Describe how human activities and natural causes can lead to pollution.

Standard: Science (High School)

Strand 3: Science in Social and Personal Perspectives

SCHS-S3C1

Concept 1: Changes in Environments: Describe the interactions between human populations, natural hazards, and the environment.

PO 1 Evaluate how the processes of natural ecosystems affect, and are affected by humans.

PO 2 Describe the environmental effects of the following natural and/or human-caused hazards:

- *flooding
 - *drought
 - *earthquakes
 - *fires
 - *pollution
 - *extreme weather
- PO 3 Assess how human activities (e.g., clear cutting, water management, tree thinning) can affect the potential for hazards.
- PO 4 Evaluate the following factors that affect the quality of the environment:
- *urban development
 - *smoke
 - *volcanic dust
- PO 5 Evaluate the effectiveness of conservation practices and preservation techniques on environmental quality and biodiversity.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

24.8 Evaluate the effectiveness of conservation practices on environmental quality and biodiversity.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.
- PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.

Standard: Science (High School)

Strand 3: Science in Social and Personal Perspectives

SCHS-S3C1

Concept 1: Changes in Environments: Describe the interactions between human

- populations, natural hazards, and the environment.
- PO 5 Evaluate the effectiveness of conservation practices and preservation techniques on environmental quality and biodiversity.

Standard: Reading Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meaning, pronunciations, syllabication, synonyms, antonyms, part of speech, and correct spelling by using resources such as general and specialized dictionaries, thesauri, glossaries, and the CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.

- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

24.9 Research careers in environmental sciences.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of

contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)

- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

25.0 INVESTIGATE ENVIRONMENTAL AND ECONOMICAL IMPACTS OF INTEGRATED PEST MANAGEMENT OPTIONS

25.1 Classify common pests, including insects and noxious weeds.

Standard: Reading

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

25.2 Evaluate economic impact of pests on plant production.

Standard: Mathematics (High School)

Strand 2: Data Analysis, Probability, and Discrete Mathematics

MHS-S2C1

Concept 2: Data Analysis (Statistics): Understand and apply data collection, organization and representation to analyze and sort data.

- PO 9 Draw inferences from charts, tables, graphs, plots, or data sets.

PO 11 Evaluate the reasonableness of conclusions drawn from data analysis.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meaning, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spelling by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product

information, technical manuals, consumer publications, workplace documents).

- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

25.3 Predict methods by which pests spread.

(standards not identified)

25.3 Recognize signs of pest damage.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 1 Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise.
- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

25.5 Identify thresholds created for specific pests.

(standards not identified)

25.6 Select and purpose the most economical and environmentally safe pest control method.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs: Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

PO 1 Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise.

PO 3 Write an appropriate conjecture given a certain set of circumstances.

PO 4 Analyze assertions related to a contextual situation by using principles of logic.

25.7 Identify GMO crops and their role in the agriculture industry.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).

PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)

PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, biases and arguments.

PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)

PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.

PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).

PO 8 Support conclusions drawn from ideas and concepts in expository text.
R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository writing (Grades 9-10): includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question) as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

25.8 Read and interpret pesticide labels.

Standard: Reading

Strand 3: Informative text

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).

25.9 Select and wear protective clothing for applying pesticides.
(standards not identified)

25.10 Apply pesticide effectively.
(standards not identified)

26.0 DEMONSTRATE AGRISCIENCE MECHANIC APPLICATIONS

26.1 Demonstrate personal and group safety.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (investigating and Modeling): Design and conduct controlled investigations.

- PO 1 Demonstrate safe and ethical procedures (e.g., use and care if technology materials, organisms) and behavior in all science inquiry.

26.2 Develop a bill of materials for a specific task.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (investigating and Modeling): Design and conduct controlled investigations.

- PO 2 Identify the resources needed to conduct an investigation.

26.3 Develop a structural plan for a specific task.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (investigating and Modeling): Design and conduct controlled investigations.

- PO 3 Design an appropriate protocol (written plan of action) for testing a hypothesis:
- Identify dependent and independent variables in a controlled investigation.
 - Determine an appropriate method for data collection (e.g., using balances, thermometers, microscopes, spectrophotometer, using qualitative changes).
 - Determine an appropriate method for recording data (e.g., notes, sketches, photographs, videos, journals (logs), charts, computers/calculators).

Strand 4: Geometry and Measurement

SCHS-S4C1

Concept 1: Geometric Properties

- PO 5 Draw 2-dimensional and 3-dimensional figures with appropriate labels.

26.4 Demonstrate appropriate wood fabrication techniques.

Standard: Science (High School)

Strand 5: Physical Science

SCHS-S5C1

Concept 1: Structure and Properties of Matter: Understand physical, chemical, and atomic properties of matter.

- PO 1 Describe substances based on their physical properties.
PO 2 Describe substances based on their chemical properties.

Standard: Mathematics (High School)

Strand 4: Geometry and Measurement

MHS-S4C4

Concept 4: Measurement – Unit of Measure – Geometric Objects

PO 2 Calculate the volumes of 3-dimensional geometric figures.

PO 3 Calculate the surface areas of 3-dimensional geometric figures.

Standard: Reading

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text: Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)

26.5 Demonstrate appropriate metal fabrication techniques.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.

PO 2 Identify the resources needed to conduct an investigation.

PO 3 Design an appropriate protocol (written plan of action) for testing a hypothesis:

- Identify dependent and independent variables in a controlled investigation.
- Determine an appropriate method for data collection (e.g., using balances, thermometers, microscopes, spectrophotometer, using qualitative changes).
- Determine an appropriate method for recording data (e.g., notes, sketches, photographs, videos, journals (logs), charts, computers/calculators).

Strand 5: Physical Science

SCHS-S5C1

Concept 1: Structure and Properties of Matter: Understand physical, chemical, and atomic properties of matter.

PO 1 Describe substances based on their physical properties.

PO 2 Describe substances based on their chemical properties.

Standard: Reading

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text: Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)

26.6 Demonstrate appropriate oxy-fuel cutting techniques used in agriculture.

Standard: Science (High School)

Strand 5: Physical Science

SCHS-S5C1

Concept 1: Structure and Properties of Matter: Understand physical, chemical, and atomic properties of matter.

PO 1 Describe substances based on their physical properties.

PO 2 Describe substances based on their chemical properties.

26.7 Demonstrate appropriate plasma cutting techniques used in agriculture.

Standard: Science (High School)

Strand 5: Physical Science

SCHS-S5C1

Concept 1: Structure and Properties of Matter: Understand physical, chemical, and atomic properties of matter.

PO 1 Describe substances based on their physical properties.

PO 2 Describe substances based on their chemical properties.

26.8 Demonstrate appropriate plumbing fabrication techniques used in agriculture.

Standard: Science (High School)

Strand 6: Earth and Space Science

SCHS-S6C1

Concept 1: Geochemical Cycles: Analyze the interactions between the Earth's structures, atmosphere, and geochemical cycles.

PO 5 Describe factors that impact current and future water quantity and quality including surface, ground, and local water issues.

Standard: Reading

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text: Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)

26.9 Demonstrate appropriate safe connection of electrical components including motors, timers, and values in both high and low voltage circuits used in agriculture.

Standard: Science (High School)

Strand 5: Physical Science

SCHS-S5C1

Concept 1: Structure and Properties of Matter: Understand physical, chemical, and atomic properties of matter.

PO 5 Describe the properties of electric charge and the conservation of electric charge.

Standard: Reading

Strand 1: Reading Process

R09-S1C3

Concept 4: Vocabulary: Acquire and use new vocabulary in relevant contexts.

PO 5 Identify the meaning, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spelling by using resources such as general and

specialized dictionaries thesauri, glossaries, CD-ROM and the in Internet when available.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text: Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)

26.10 Demonstrate appropriate concrete and masonry practices commonly used in agriculture.

Standard: Mathematics (High School)

Strand 4: Geometry and Measurement

MHS-S4C4

Concept 4: Measurement – Unit of Measure – Geometric Objects

- PO 2 Calculate the volumes of 3-dimensional geometric figures.
PO 3 Calculate the surface areas of 3-dimensional geometric figures.

26.11 Demonstrate operation and maintenance of appropriate mechanical systems used in agriculture.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs. Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 1 Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise.
PO 2 List related *if . . . then* statements in logical order.
PO 3 Write an appropriate conjecture given a certain set of circumstances.
PO 4 Analyze assertions related to a contextual situation by using principles of logic.

26.12 Demonstrate service and repair of appropriate mechanical systems.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs. Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 1 Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise.
PO 2 List related *if . . . then* statements in logical order.
PO 3 Write an appropriate conjecture given a certain set of circumstances.
PO 4 Analyze assertions related to a contextual situation by using principles of logic.

26.13 Demonstrate appropriate land measurement and construction techniques commonly used in agriculture which is to include optical, laser, and global positioning satellite systems.

Standard: Reading

Strand 1: Reading Process

R09-S1C3

Concept 4: Vocabulary: Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meaning, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spelling by using resources such as general and specialized dictionaries thesauri, glossaries, CD-ROM and the in Internet when available.

26.14 Demonstrate principles and applications of various engines and machinery used in agriculture.

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C2

Concept 2: Scientific Testing (investigating and Modeling): Design and conduct controlled investigations.

- PO 1 Demonstrate safe and ethical procedures (e.g., use and care if technology materials, organisms) and behavior in all science inquiry.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs. Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 1 Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise.
- PO 2 List related *if . . . then* statements in logical order.
- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Laboratory-Based Integrated Science II
Power, Structural, & Technical Systems - Option E
CIP NO. 01.0100.60

27.E APPLY PHYSICAL SCIENCE PRINCIPLES TO ENGINEERING APPLICATIONS WITH MECHANICAL EQUIPMENT, STRUCTURES, BIOLOGICAL SYSTEMS, LAND TREATMENT, POWER UTILIZATION, AND TECHNOLOGY

27.1e Relate power generation to energy sources.

27.1.1e Identify petroleum sources (e.g., gasoline, diesel).

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

27.1.2e Identify alternative sources (e.g., ethanol, bio-diesel, air, wood, geothermal, solar).

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).

- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the

- d. form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered
- h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
- i. includes an effective conclusion

27.1.3e Compare environmental impact of energy sources.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

Strand 4: Life Science

SCHS-S4C1

Concept 1: The Cell: Understand the role of the cell and cellular processes

- PO 1 Describe the role of energy in cellular growth, development, and repair.
- PO 3 Explain the importance of water to cells

SCHS-S4C5

Concept 5: Matter, Energy and Organization in Living Systems (Including Humans Systems); Understand the organization of living systems and the role of energy within those systems.

- PO 2 Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

27.1.4e Compare efficiency of energy source.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

SCHS-S1C3

Strand 1: Inquiry Process

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 1 Interpret data that show a variety of possible relationships between variables, including:
- *positive relationship
 - *negative relationship
 - *no relationship

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

27.1.5e Compare characteristics of energy sources.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).

- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Science (High School)

SCHS-S1C3

Strand 1: Inquiry Process

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 1 Interpret data that show a variety of possible relationships between variables, including:
- *positive relationship
 - *negative relationship
 - *no relationship

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

27.1.6e Discuss efficiency of systems (e.g., fuel cells, chemical, wind, hydro, nuclear, electric, mechanical, solar, biological).

Standard: Science (High School)

Strand 1: Inquiry Process

SCHS-S1C3

Concept 3: Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.

- PO 1 Interpret data that show a variety of possible relationships between variables, including:
- *positive relationship
 - *negative relationship
 - *no relationship

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate

- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered
- h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
- i. includes an effective conclusion

27.2e Apply principles of lubricants to sort and classify lubricants.

27.2.1e Classify lubricants and determine applications.

(standards not identified)

27.2.2e Identify viscosity and strengths of lubricants.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).

PO 8 Support conclusions drawn from ideas and concepts in expository text.
R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

27.2.3e Describe properties of lubricants.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources

- accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered
- h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
- i. includes an effective conclusion

28.E APPLY PRINCIPLES OF OPERATION AND MAINTENANCE TO MECHANICAL EQUIPMENT, STRUCTURES, BIOLOGICAL SYSTEMS, LAND TREATMENT, POWER UTILIZATION, AND TECHNOLOGY

28.1e Perform scheduled service routines to maintain machinery and equipment.

28.1.1e Lubricate machinery and equipment.

(standards not identified)

28.1.2e Ensure presence and function of safety systems and hardware.

(standards not identified)

28.1.3e Service electrical systems.

(standards not identified)

28.1.4e Perform machine adjustments (e.g., belts, drive chains).

(standards not identified)

28.1.5e Service filtration systems.

(standards not identified)

28.1.6e Maintain fluid levels.

(standards not identified)

28.1.7e Maintain vehicle, machinery and equipment cleanliness and appearance.

(standards not identified)

28.1.8e Maintain fluid conveyance components, (e.g., hoses and lines, valves, nozzles).

(standards not identified)

28.1.9e Design a preventive maintenance schedule.

(standards not identified)

28.1.10e Identify causes of malfunctions and failures.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs. Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

PO 1 Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise.

PO 2 List related *if . . . then* statements in logical order.

PO 3 Write an appropriate conjecture given a certain set of circumstances.

PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

28.1.11e Calibrate metering, monitoring, and sensing equipment.
(standards not identified)

28.2e Observe rules of the road to operate machinery and equipment.

28.2.1e Describe function of machine controls and Instrumentation.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

28.2.2e Perform appropriate start-up procedures.

(standards not identified)

28.2.3e Select proper machine(s) for specific task(s).

(standards not identified)

28.2.4e Safely operate equipment.

(standards not identified)

28.2.5e Perform pre-operation inspection.

(standards not identified)

28.2.6e List applicable laws for on- and off-highway operation.

(standards not identified)

29.E APPLY PRINCIPLES OF SERVICE AND REPAIR TO MECHANICAL EQUIPMENT, STRUCTURES, BIOLOGICAL SYSTEMS, LAND TREATMENT, POWER UTILIZATION, AND TECHNOLOGY

29.1e Troubleshoot problems and evaluate performance to service and repair the components of internal combustion engines.

29.1.1e Describe principles of operation.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered
 - includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - includes an effective conclusion

29.1.2e Identify engine systems and components.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of

contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)

- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate

- i. includes an effective conclusion

29.1.3e Analyze and troubleshoot engine.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs. Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 1 Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise.
- PO 2 List related *if . . . then* statements in logical order.
- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

29.1.4e Perform overhaul procedures.

(standards not identified)

29.1.5e Evaluate engine performance through post-rebuild testing.

(standards not identified)

29.2e Follow manufacturers' guidelines to service and repair power transmission systems.

29.2.1e Describe features, benefits, and applications of various power transmission systems.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

29.2.2e Describe principles of operation of various power transmission systems.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

29.2.3e Perform calculations involving speed, torque and power relationships.
(standards not identified)

29.2.4e Describe features, benefits, and applications of mechanical transmission components (e.g., belts, chains, gears, bearings, seals, universals).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

29.2.5e Inspect, analyze, and repair hydrostatic transmissions.
(standards not identified)

29.2.6d Inspect, analyze, and repair differentials and final drives.

(standards not identified)

29.2.7e Inspect, analyze, and repair clutches and brakes.

(standards not identified)

29.2.8e Inspect, analyze, and repair gear-type transmissions including power shift.

(standards not identified)

29.2.9e Inspect, analyze, and repair auxiliary drives

(standards not identified)

29.3e Evaluate performance and check maintenance manuals to service and repair hydraulic systems.

29.3.1e Describe features, benefits, and applications of types of hydraulic systems.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

29.3.2e Describe physical principles of operation.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the

- d. form of details, facts, examples, or reasons
- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered
- h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
- i. includes an effective conclusion

29.3.3e Interpret symbols and schematic drawings.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs. Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

29.3.4e Describe the application and operation of major components.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

29.3.5e Inspect, analyze, and repair hydraulic components (e.g., pumps, valves).
(standards not identified)

29.3.6e Inspect, analyze, and repair fluid conveyance components (e.g., hoses, lines).
(standards not identified)

29.3.7e Evaluate system cleanliness.

(standards not identified)

29.3.8e Identify hydraulic fittings and ports.

(standards not identified)

29.3.9e Inspect, analyze, and repair auxiliary drives.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of

- key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

29.4e Troubleshoot from schematics to service vehicle electrical systems.

29.4.1e Describe features and applications of electrical systems.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

- h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
- i. includes an effective conclusion

29.4.2e Interpret symbols and wiring diagrams.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs. Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

29.4.3e Test and troubleshoot electrical systems and components (e.g., battery, charging, starting, lighting, instrumentation, accessories).

(standards not identified)

29.4.4e Troubleshoot and install instrumentation and data acquisition system (e.g., Global Positioning System (GPS), spraying, planting, harvesting monitors).

(standards not identified)

29.4.5e Diagnose and repair control systems and sensors (e.g., engine, transmission, implement).

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs. Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

- PO 1 Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise.
- PO 2 List related *if . . . then* statements in logical order.
- PO 3 Write an appropriate conjecture given a certain set of circumstances.
- PO 4 Analyze assertions related to a contextual situation by using principles of logic.

29.5e Use company diagrams and schematics to service vehicle heating and air conditioning systems.

29.5.1e Describe physical principles of operation.

(standards not identified)

29.5.2e Interpret symbols and diagrams.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs. Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe

solutions and recognize their applications.

PO 4 Analyze assertions related to a contextual situation by using principles of logic.

29.5.3e Test, troubleshoot, and replace heating and air-conditioning components (e.g., compressor, expansion valve, receiver dryer, pump, hoses).
(standards not identified)

29.5.4e Evacuate and charge air conditioning systems.
(standards not identified)

29.6e Check performance parameters to service and repair steering, suspension, traction, and vehicle performance systems.

29.6.1e Evaluate traction, ballasting, and weight transfer.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs. Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

PO 3 Write an appropriate conjecture given a certain set of circumstances.

PO 4 Analyze assertions related to a contextual situation by using principles of logic.

29.6.2e Evaluate vehicle stability.
(standards not identified)

29.6.3e Determine optimum vehicle performance, e.g., horsepower management, fuel efficiency.
(standards not identified)

29.6.4e Troubleshoot, adjust, and repair suspension systems.
(standards not identified)

29.6.5e Inspect and repair steering systems.
(standards not identified)

29.7e Use tools in the workplace to demonstrate safe use and proper skills with construction/fabrication hand tools.

29.7.1e Demonstrate proper use of measurement and layout tools.
(standards not identified)

29.7.2e Apply proper use of measurement and layout tools in construction/fabrication of an actual project.
(standards not identified)

29.7.3e Demonstrate safe and proper techniques in using hand and power tools in construction/fabrication.
(standards not identified)

29.7.4e Demonstrate hand and power tool use to construct/fabricate an actual project according to blueprints or plans.
(standards not identified)

29.7.5e Identify and demonstrate proper hand and power tool maintenance procedures.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of

- key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

30.E EXERCISE BASIC SKILLS IN BLUEPRINT AND DESIGN DEVELOPMENT TO CREATE SKETCHES, DRAWINGS AND PLANS

30.1e Use computer skills to develop simple sketches and plans.

30.1.1e Use current technology to develop simple plans and sketches.

(standards not identified)

30.1.2e Identify symbols and drawing techniques used to develop simple plans and sketches.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

30.1.3e Use scale measurement and dimension to develop simple plans and sketches.

Standard: Mathematics (High School)

Strand 4: Geometry and Measurement

MHS-S4C4

Concept 4: Measurement - Units of Measure - Geometric Objects: Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

- PO 9 Solve scale factor problems using ratios and proportions. tios and proportions.

31.E READ AND RELATE STRUCTURAL PLANS TO SPECIFICATIONS AND BUILDING CODES

31.1e Examine blueprints and local codes to develop a logical construction plan.

31.1.1e Identify parts of a plan or blueprint.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product

- information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered
 - includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - includes an effective conclusion

31.1.2e Identify criteria for different views of a plan or blueprint.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of

contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)

- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate

- i. includes an effective conclusion

31.1.3e Locate elements of a construction plan and develop a construction plan.
(standards not identified)

31.1.4e Identify local code enforcement agencies and procedures.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability

- of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

31.1.5e Read and interpret local code information.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply

knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

32.E EXAMINE STRUCTURAL REQUIREMENTS TO ESTIMATE PROJECT COSTS

32.1e Use bids and billing information to develop a complete materials list and project cost estimate.

32.1.1e Identify materials used in agricultural construction/fabrication.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product

information, technical manuals, consumer publications, workplace documents).

- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

32.1.2e Explain proper criteria for material use.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

32.1.3e Identify elements of project cost estimate (materials, labor, administrative, etc.).

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).

- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered
 - includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - includes an effective conclusion

32.1.4e Explain selection process of all construction materials.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
- includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - states a thesis (hypothesis, essential question) with a narrow focus
 - includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - attributes sources of information as appropriate
 - includes a topic sentence for each body paragraph
 - includes relevant factors and variables that need to be considered
 - includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - includes an effective conclusion

32.1.5e Estimate and select type and quantities of material and other costs associated

with a specified project plan.
(standards not identified)

32.1.6e Prepare a bid package for a planned project.
(standards not identified)

33.E DEVELOP SKILLS REQUIRED TO USE CONSTRUCTION/FABRICATION EQUIPMENT AND TOOLS

33.1e Use tools in the workplace to demonstrate safe use and proper skills with construction/fabrication hand tools.

33.1.1e Demonstrate proper use of measurement and layout tools.

(standards not identified)

33.1.2e Apply proper use of measurement and layout tools in construction/fabrication of an actual project.

(standards not identified)

33.1.3e Demonstrate safe and proper techniques in using hand and power tools in construction/fabrication.

(standards not identified)

33.1.4e Demonstrate hand and power tool use to construct/fabricate an actual project according to blueprints or plans.

(standards not identified)

33.1.5e Identify and demonstrate proper hand and power tool maintenance procedures.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).

PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)

PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases

- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

34.E PLAN, IMPLEMENT, MANAGE, AND/OR PROVIDE SUPPORT SERVICES TO FACILITY DESIGN AND CONSTRUCTION; EQUIPMENT DESIGN, MANUFACTURE, REPAIR, AND SERVICE; AND AGRICULTURAL TECHNOLOGY

34.1e Design machinery and equipment including vehicles, implements, building, and facilities (e.g., feeding, feed storage).

34.1.1e Analyze site/equipment/permit requirements.
(standards not identified)

34.1.2e Develop drawings.

Standard: Mathematics (High School)

Strand 4: Geometry and Measurement

MHS-S4C4

Concept 4: Measurement - Units of Measure - Geometric Objects: Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

PO 9 Solve scale factor problems using ratios and proportions.

34.1.3e Estimate material needs and costs.

(standards not identified)

34.1.4e Operate Computer Aided Drafting Design (CADD) Software.

(standards not identified)

34.2e Follow architectural and mechanical plans to construct buildings and facilities.

34.2.1e Identify and select appropriate building materials.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).

PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes,

bibliographic references) in expository text. (Connected to Research Strand in Writing)

- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

34.2.2e Install plumbing equipment and fixtures.

(standards not identified)

34.2.3e Construct with wood and metal.

(standards not identified)

34.2.4e Install electrical wiring components and fixtures.

(standards not identified)

34.2.5e Paint or protect with coatings.

(standards not identified)

34.2.6e Insulate facility.

(standards not identified)

34.2.7e Install fencing.

(standards not identified)

34.2.8e Install glass, ridged plastic panels and/or film plastic.

(standards not identified)

34.2.9e Construct with concrete, stone, and brick.
(standards not identified)

35.E USE THE VARIETY OF TOOLS AVAILABLE IN COMPUTER SYSTEMS TO ACCOMPLISH FAST, ACCURATE PRODUCTION IN THE WORKPLACE

35.1e Identify and explain various types of hardware systems to show their applications potential.

35.1.1e Identify and describe individual components of each system.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.

- PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
- PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

35.1.2e Discuss various types of diagnostic equipment.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

35.1.3e Be able to show aptitude in use of various equipment.
(standards not identified)

35.1.4e Demonstrate competency on cable through put and set up.
(standards not identified)

36.E USE AVAILABLE POWER SOURCES TO PLAN AND APPLY CONTROL SYSTEMS

36.1e Measure with selected instruments to demonstrate knowledge of basic electricity.

36.1.1e Show proficiency in use of various meters.

(standards not identified)

36.1.2e Discuss importance of and techniques for grounding.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

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- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered
- h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
- i. includes an effective conclusion

36.1.3e Show understanding of codes and regulations.

(standards not identified)

36.1.4e Discuss various energy sources.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

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- d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

- h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
- i. includes an effective conclusion

36.2e Reference electrical drawings to design, install, and troubleshoot control systems.

36.2.1e Develop and read schematic drawings for a control system.

(standards not identified)

36.2.2e Identify and describe uses of various components of control systems; i.e., transistors, relays, HVAC, logic controllers.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

- PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

- PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).
- PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

- PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)
- PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases
- PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)
- PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.
- PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).
- PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

- Concept 2: Functional Text (Grades 9-12):** Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.
- PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.
 - PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
 - PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
 - a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
 - b. states a thesis (hypothesis, essential question) with a narrow focus
 - c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered
 - h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
 - i. includes an effective conclusion

36.2.3e Discuss the importance of maintenance schedules.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

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 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate

- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered
- h. includes visual aids to organize and record information on charts, data tables, maps and graphs, as appropriate
- i. includes an effective conclusion

36.2.4e Identify system performance problems and apply troubleshooting techniques.

Standard: Mathematics (High School)

Strand 5: Structure and Logic

MHS-S5C2

Concept 2: Logic, reasoning, Arguments, and Mathematical Proofs. Evaluate, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.

PO 3 Write an appropriate conjecture given a certain set of circumstances.

PO 4 Analyze assertions related to a contextual situation by using principles of logic.

Standard: Reading

Strand 1: Reading Process

R09-S1C4

Concept 4: Reading Process (Grade 9): Acquire and use new vocabulary in relevant contexts.

PO 5 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, parts of speech, and correct spellings by using resources such as general and specialized dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.

R09-S1C6

Concept 6: Comprehension Strategies (Grades 9-12): Employ strategies to comprehend text.

PO 1 Predict text content using prior knowledge and text features (e.g., illustrations, titles, topic sentences, key words).

PO 4 Connect information and events in text to experience and to related text and sources.

Strand 3: Comprehending Informational Text

R09-S3C1

Concept 1: Expository Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

PO 3 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/ guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text. (Connected to Research Strand in Writing)

PO 4 Compare (and contrast) readings on the same topic, by explaining how authors reach the same or different conclusions based upon differences in evidence, reasoning, assumptions, purposes, beliefs, or biases

PO 5 Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas. (Connected to Research Strand in Writing)

PO 6 Use knowledge of modes of expository writing (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order, classification schemes, sequence-time order, problem-solving, analogy, definition, narrative) to interpret text.

PO 7 Explain how one excerpt relates and contributes to the reading selection (e.g., sentence to paragraph, paragraph to selection).

PO 8 Support conclusions drawn from ideas and concepts in expository text.

R09-S3C2

Concept 2: Functional Text (Grades 9-12): Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

PO 1 Analyze how the patterns of organization, hierarchic structures, repetition of key ideas, syntax, and word choice influence the clarity and understandability of functional text.

PO 3 Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).

PO 3 Analyze the effectiveness of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents) to achieve its stated purpose(s).

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

PO 1 Write an explanatory, multi-paragraph essay that:

- a. includes background information to establish the thesis (hypothesis, essential question), as appropriate
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- c. includes evidence in support of a thesis (hypothesis, essential question) in the form of details, facts, examples, or reasons
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- e. attributes sources of information as appropriate
- f. includes a topic sentence for each body paragraph
- g. includes relevant factors and variables that need to be considered

37.E EXPLAIN GEOSPATIAL TECHNOLOGY TO DEMONSTRATE ITS APPLICATIONS.

37.1e Employ appropriate techniques to demonstrate application of GIS/GPS systems principles.

37.1.1e Explain the concept and principles.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

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 - e. attributes sources of information as appropriate
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 - g. includes relevant factors and variables that need to be considered

37.1.2e Describe equipment.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

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 - d. communicates information and ideas from primary and/or secondary sources accurately and coherently, as appropriate
 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

37.1.3e List techniques used.

Standard: Writing

Strand 1: Writing Process

W09-S1C1

Concept 1: Prewriting (Grades 9-12): includes using strategies to generate, plan, and organize ideas for specific purposes.

- PO 1 Generate ideas through a variety of activities (e.g., brainstorming, notes and logs, graphic organizers, record of writing ideas and discussion,

printed material or other sources).

37.1.4e Explain the application of GIS/GPS systems with map development output.

Standard: Writing

Strand 3: Writing Applications

W09-S3C2

Concept 2: Expository (Grades 9-10): writing includes non-fiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.

- PO 1 Write an explanatory, multi-paragraph essay that:
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 - e. attributes sources of information as appropriate
 - f. includes a topic sentence for each body paragraph
 - g. includes relevant factors and variables that need to be considered

37.2e Use computer applications to produce maps that reflect surveying and mapping principles.

37.2.1e Understand and use various equipment.

(standards not identified)

37.2.2e Perform survey and produce map using computer techniques.

Standard: Mathematics (High School)

Strand 4: Geometry and Measurement

MHS-S4C4

Concept 4: Measurement - Units of Measure - Geometric Objects: Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

- PO 9 Solve scale factor problems using ratios and proportions.

37.3e Select an area of personal expertise to demonstrate knowledge of end applications.

37.3.1e Apply knowledge and experience to a specific application or project to show competency; i.e., calibration, volumetric controlling, electrical design.

(standards not identified)