

# INSTRUCTIONAL MATERIALS ADMINISTRATOR

BID 3379

## Recommendation

No

**Comments:** This material would be excellent for an academy class but it does not satisfy enough standards to merit being utilized for a science class. Teacher expertise in planning and execution of high-quality standards-based instruction would be needed to merit the use of this textbook.

## Material for Review

**Course:** Forensic Sciences 1 (2002480)

**Title:** Forensic Science: Fundamentals and Investigations , Edition: 2

**Copyright:** 2016

**Author:** Bertino

**Grade Level:** 9 - 12

## Content

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To answer each item, select the appropriate rating from the following scale:

- 5 - VERY GOOD ALIGNMENT
- 4 - GOOD ALIGNMENT
- 3 - FAIR ALIGNMENT
- 2 - POOR ALIGNMENT
- 1 - VERY POOR/NO ALIGNMENT

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- Additional information regarding the Content, Presentation, and Learning requirements are located in the Science K-12 Specifications for the 2017-18 Florida State Adoption of Instructional Materials.

Each set of materials submitted for adoption is evaluated based on each benchmark for that course and the Content, Presentation, and Learning items included in this rubric.

**A. Alignment with curriculum**  
1. A. The content aligns with the state's standards and benchmarks for subject, grade level and learning outcomes.

- VERY GOOD ALIGNMENT
  GOOD ALIGNMENT
  **FAIR ALIGNMENT**
 POOR ALIGNMENT
  VERY POOR/NO ALIGNMENT

Justification:

Ten of the forty-six science standards for this course are not addressed by this textbook.

2. A. The content is written to the correct skill level of the standards and benchmarks in the course.

- VERY GOOD ALIGNMENT
  **GOOD ALIGNMENT**
 FAIR ALIGNMENT
  POOR ALIGNMENT
  VERY POOR/NO ALIGNMENT

Justification:

9th grade reading level according to readability calculator.

3. A. The materials are adaptable and useful for classroom instruction.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  **FAIR ALIGNMENT**  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

Materials require teacher expertise in lesson planning.

**B. Level of Treatment** 4. B. The materials provide sufficient details for students to understand the significance of topics and events.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

Chapters are devoted to specific important topics of forensic science.

5. B. The level (complexity or difficulty) of the treatment of content matches the standards.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

9th grade reading level according to readability calculator and standards for grades 9-12 science (Florida Standards).

6. B. The level (complexity or difficulty) of the treatment of content matches the student abilities and grade level.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

9th grade reading level according to readability calculator and standards for grades 9-12 science (Florida Standards).

7. B. The level (complexity or difficulty) of the treatment of content matches the time period allowed for teaching.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:

No pacing provided

**C. Expertise for Content Development** 8. C. The primary and secondary sources cited in the materials reflect expert information for the subject.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:

Could not locate this bibliography list.

9. C. The primary and secondary sources contribute to the quality of the content in the materials.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:

Could not locate this bibliography list.

**D. Accuracy of Content** 10. D. The content is presented accurately. (Material should be devoid of typographical or visual errors).

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

No glaring errors found.

11. D. The content of the material is presented objectively. (Material should be free of bias and contradictions and is noninflammatory in nature).

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  **POOR ALIGNMENT**  VERY POOR/NO ALIGNMENT

Justification:

Most examples in case studies are males.

12. D. The content of the material is representative of the discipline? (Material should include prevailing theories, concepts, standards, and models used with the subject area).

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  **FAIR ALIGNMENT**  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

DNA and entomology chapters show current advances but will need teacher to supplement material.

13. D. The content of the material is factual accurate. (Materials should be free of mistakes and inconsistencies).

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

No glaring errors found.

**E. Currency of Content** 14. E. The content is up-to-date according to current research and standards of practice.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  **FAIR ALIGNMENT**  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

DNA and entomology chapters show current advances but will need teacher to supplement material.

15. E. The content is presented to the curriculum, standards, and benchmarks in an appropriate and relevant context.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  **POOR ALIGNMENT**  VERY POOR/NO ALIGNMENT

Justification:

See Standards section for missed opportunities to address standards.

16. E. The content is presented in an appropriate and relevant context for the intended learners.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  **POOR ALIGNMENT**  VERY POOR/NO ALIGNMENT

Justification:

No ESE/ESOL accommodations.

**F. Authenticity of Content** 17. F. The content includes connections to life in a context that is meaningful to students.

**VERY GOOD ALIGNMENT**  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

Students who take forensic science are interested.

18. F. The material includes interdisciplinary connections which are intended to make the content meaningful to students.

**VERY GOOD ALIGNMENT**  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

Students who take forensic science are interested.

**G. Multicultural Representation** 19. G. The portrayal of gender, ethnicity, age, work situations, cultural, religious, physical, and various social groups are fair and unbiased. (Please explain any unfair or biased portrayals in the comments section).

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  **FAIR ALIGNMENT**  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

Attempts are made to be fair and unbiased.

**H. Humanity and Compassion** 20. H. The materials portray people and animals with compassion, sympathy, and consideration of their needs and values and exclude hard-core pornography and inhumane treatment. (An exception may be necessary for units covering animal welfare).

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  **FAIR ALIGNMENT**  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

Attempts are made to be fair and unbiased.

21. In general, is the content of the benchmarks and standards for this course covered in the material.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  **FAIR ALIGNMENT**  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

Materials do not ease the burden of lesson planning.

## Presentation

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**A. Comprehensiveness of Student and Teacher Resources**1. A. The comprehensiveness of the student resources address the targeted learning outcomes without requiring the teacher to prepare additional teaching materials for the course.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  **POOR ALIGNMENT**  VERY POOR/NO ALIGNMENT

Justification:

While some support is provided, teacher will need to supplement material.

**B. Alignment of Instructional Components**2. B. All components of the major tool align with the curriculum and each other.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  **FAIR ALIGNMENT**  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

The components align with each other; however, this textbook is designed for an academy class and not a science class.

**C. Organization of Instructional Materials**3. C. The materials are consistent and logical organization of the content for the subject area.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

Materials are consistent with various aspects of forensic science - reporting, investigating, types of situations.

**D. Readability of Instructional Materials**4. D. Narrative and visuals engage students in reading or listening as well as in understanding of the content at a level appropriate to the students' abilities.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

9th grade reading level according to readability calculator.

**E. Pacing of Content**5. E. The amount of content presented at one time or the pace at which it is presented must be of a size or rate that allows students to perceive and understand it.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:

No pacing provided.

**Accessibility**6. The material contains presentation, navigation, study tool and assistive supports that aid students, including those with disabilities, to access and interact with the material. (For assistance refer to the answers on the UDL questionnaire).

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:

No ESE/ESOL accommodations.

7. In general, how well does the submission satisfy PRESENTATION requirements? (The comments should support your responses to the questions in the Presentation section).

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  **POOR ALIGNMENT**  VERY POOR/NO ALIGNMENT

Justification:

This textbook will be more useful in an academy class rather than a science class.

## Learning

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**A. Motivational Strategies**1. A. Instructional materials include features to maintain learner motivation.

**VERY GOOD ALIGNMENT**  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

Students enrolled in this class are already engaged.

**B. Teaching a Few "Big Ideas"**2. B. Instructional materials thoroughly teach a few important ideas, concepts, or themes.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  **POOR ALIGNMENT**  VERY POOR/NO ALIGNMENT

Justification:

Standards are not identified with each chapter (point of instruction).

**C. Explicit Instruction**3. C. The materials contain clear statements of information and outcomes.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

Information and outcomes are provided at the beginning of each chapter and, in each chapter as section dividers.

**D. Guidance and Support**4. D. The materials provide guidance and support to help students safely and successfully become more independent learners and thinkers.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  **POOR ALIGNMENT**  VERY POOR/NO ALIGNMENT

Justification:

Teacher expertise will be required to provide meaningful instruction to promote independent learning and thinking.

5. D. Guidance and support must be adaptable to developmental differences and various learning styles.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  **POOR ALIGNMENT**  VERY POOR/NO ALIGNMENT

Justification:

No ESE/ESOL accommodations.

**E. Active Participation of Students**6. E. The materials engage the physical and mental activity of students during the learning process.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  **POOR ALIGNMENT**  VERY POOR/NO ALIGNMENT

Justification:

Teacher expertise will be required to engage students during the learning process.

7. E. Rate how well the materials include organized activities that are logical extensions of content, goals, and objectives.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

In-text labs follow progression of the book but are prescriptive in nature.

**F. Targeted Instructional Strategies**8. F. Instructional materials include the strategies known to be successful for teaching the learning outcomes targeted in the curriculum requirements.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  **FAIR ALIGNMENT**  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

Teacher expertise will be required to provide meaningful instruction to reach learning outcomes.

9. F. The instructional strategies incorporated in the materials are effective in teaching the targeted outcomes.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  **POOR ALIGNMENT**  VERY POOR/NO ALIGNMENT

Justification:

The 5E model of instruction is not addressed in the textbook at all.

**G. Targeted Assessment Strategies**10. G. The materials correlate assessment strategies to the desired learning outcomes.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  **POOR ALIGNMENT**  VERY POOR/NO ALIGNMENT

Justification:

A few assessments are embedded in the text.

11. G. the assessment strategies incorporated in the materials are effective in assessing the learners' performance with regard to the targeted outcomes.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:

No connection is provided between the assessment and the standards/outcomes.

**Universal Design for Learning**12. This submission incorporates strategies, materials, activities, etc., that consider the needs of all students.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:

No ESE/ESOL accommodations.

**Mathematical Practice**13. Do you observe the appropriate application of Mathematical Practices (MP) as applicable?

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  **POOR ALIGNMENT**  VERY POOR/NO ALIGNMENT

Justification:

Only two of the eight mathematical practices are addressed.

14. In general, does the submission satisfy LEARNING requirements? (The comments should support your responses to the questions in the Learning section.)

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  **POOR ALIGNMENT**  VERY POOR/NO ALIGNMENT

Justification:

Teacher expertise will be needed to supplement what is provided.

## Standards

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When looking at standards alignment reviewers should consider not only the robustness of the standard coverage but also the content complexity (depth of knowledge level) if appropriate. More information on content complexity as it relates to Florida standards can be found at: [http://www.cpalms.org/Uploads/docs/CPALMS/initiatives/contentcomplexity/CPALMS\\_ccdefinitions\\_140711.pdf](http://www.cpalms.org/Uploads/docs/CPALMS/initiatives/contentcomplexity/CPALMS_ccdefinitions_140711.pdf) For example, if the standard is marked as a level 3 (strategic reasoning and complex thinking) then the materials coverage should reflect this. If the materials coverage is only sufficient to allow for recall (level 1) then this should be reflected in the points assigned.

1. **SC.912.E.5.8:** Connect the concepts of radiation and the electromagnetic spectrum to the use of historical and newly-developed observational tools.

### Remarks/Examples:

Describe how frequency is related to the characteristics of electromagnetic radiation and recognize how spectroscopy is used to detect and interpret information from electromagnetic radiation sources.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

pp. 77-78 in textbook.

2. **SC.912.L.14.1:** Describe the scientific theory of cells (cell theory) and relate the history of its discovery to the process of science.

### Remarks/Examples:

Describe how continuous investigations and/or new scientific information influenced the development of the cell theory. Recognize the contributions of scientists in the development of the cell theory.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:  
Not addressed in textbook.

3. **SC.912.L.14.2:** Relate structure to function for the components of plant and animal cells. Explain the role of cell membranes as a highly selective barrier (passive and active transport).

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:  
Not addressed in textbook.

4. **SC.912.L.14.4:** Compare and contrast structure and function of various types of microscopes.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 73-75 in textbook.

5. **SC.912.L.14.6:** Explain the significance of genetic factors, environmental factors, and pathogenic agents to health from the perspectives of both individual and public health.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 289-290 in textbook.

6. **SC.912.L.14.11:** Classify and state the defining characteristics of epithelial tissue, connective tissue, muscle tissue, and nervous tissue.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 175-177 in textbook.

7. **SC.912.L.14.12:** Describe the anatomy and histology of bone tissue.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  **FAIR ALIGNMENT**  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 165 in textbook.

8. **SC.912.L.14.34:** Describe the composition and physiology of blood, including that of the plasma and the formed elements.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 164-167 in textbook.

9. **SC.912.L.14.35:** Describe the steps in hemostasis, including the mechanism of coagulation. Include the basis for blood typing and transfusion reactions.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 4, 228 in textbook.

10. **SC.912.L.14.51:** Describe the function of the vertebrate integumentary system.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  **FAIR ALIGNMENT**  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 244-249 in textbook.

11. **SC.912.L.15.15:** Describe how mutation and genetic recombination increase genetic variation.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 289-290 in textbook.

12. **SC.912.L.16.2:** Discuss observed inheritance patterns caused by various modes of inheritance, including dominant, recessive, codominant, sex-linked, polygenic, and multiple alleles.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 290 in textbook.

13. **SC.912.L.16.9:** Explain how and why the genetic code is universal and is common to almost all organisms.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 289 in textbook.

14. **SC.912.L.16.10:** Evaluate the impact of biotechnology on the individual, society and the environment, including medical and ethical issues.

**Remarks/Examples:**

Annually assessed on Biology EOC.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:

Not addressed in textbook.

15. **SC.912.L.16.11:** Discuss the technologies associated with forensic medicine and DNA identification, including restriction fragment length polymorphism (RFLP) analysis.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

pp. 292-293 in textbook.

16. **SC.912.L.16.12:** Describe how basic DNA technology (restriction digestion by endonucleases, gel electrophoresis, polymerase chain reaction, ligation, and transformation) is used to construct recombinant DNA molecules (DNA cloning).

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

pp. 292-295 in textbook.

17. **SC.912.L.17.1:** Discuss the characteristics of populations, such as number of individuals, age structure, density, and pattern of distribution.

**Remarks/Examples:**

Florida Standards Connections: MAFS.K12.MP.7: Look for and make use of structure.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 293 in textbook.

18. **SC.912.L.18.1:** Describe the basic molecular structures and primary functions of the four major categories of biological macromolecules.

**Remarks/Examples:**

Annually assessed on Biology EOC. Also assesses SC.912.L.18.11.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:

Not addressed in textbook.

19. **SC.912.N.1.1:** Define a problem based on a specific body of knowledge, for example: biology, chemistry, physics, and earth/space science, and do the following:

1. Pose questions about the natural world, (Articulate the purpose of the investigation and identify the relevant scientific concepts).
2. Conduct systematic observations, (Write procedures that are clear and replicable. Identify observables and examine relationships between test (independent) variable and outcome (dependent) variable. Employ appropriate methods for accurate and consistent observations; conduct and record measurements at appropriate levels of precision. Follow safety guidelines).
3. Examine books and other sources of information to see what is already known,
4. Review what is known in light of empirical evidence, (Examine whether available empirical evidence can be interpreted in terms of existing knowledge and models, and if not, modify or develop new models).
5. Plan investigations, (Design and evaluate a scientific investigation).
6. Use tools to gather, analyze, and interpret data (this includes the use of measurement in metric and other systems, and also the generation and interpretation of graphical representations of data, including data tables and graphs), (Collect data or evidence in an organized way. Properly use instruments, equipment, and materials (e.g., scales, probeware, meter sticks, microscopes, computers) including set-up, calibration, technique, maintenance, and storage).
7. Pose answers, explanations, or descriptions of events,
8. Generate explanations that explicate or describe natural phenomena (inferences),
9. Use appropriate evidence and reasoning to justify these explanations to others,
10. Communicate results of scientific investigations, and
11. Evaluate the merits of the explanations produced by others.

**Remarks/Examples:**

Florida Standards Connections for 6-12 Literacy in Science

For Students in Grades 9-10

LAFS.910.RST.1.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of



explanations or descriptions.

LAFS.910.RST.1.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks attending to special cases or exceptions defined in the text.

LAFS.910.RST.3.7 Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

LAFS.910.WHST.1.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

LAFS.910.WHST.3.9 Draw evidence from informational texts to support analysis, reflection, and research.

For Students in Grades 11-12

LAFS.1112.RST.1.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

LAFS.1112.RST.1.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks analyze the specific results based on explanations in the text.

LAFS.1112.RST.3.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

LAFS.1112.WHST.1.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

LAFS.1112.WHST.3.9 Draw evidence from informational texts to support analysis, reflection, and research.

Florida Standards Connections for Mathematical Practices

MAFS.K12.MP.1: Make sense of problems and persevere in solving them.

MAFS.K12.MP.2: Reason abstractly and quantitatively.

MAFS.K12.MP.3: Construct viable arguments and critique the reasoning of others. [Viable arguments include evidence.]

MAFS.K12.MP.4: Model with mathematics.

MAFS.K12.MP.5: Use appropriate tools strategically.

MAFS.K12.MP.6: Attend to precision.

MAFS.K12.MP.7: Look for and make use of structure.

MAFS.K12.MP.8: Look for and express regularity in repeated reasoning.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 486 in textbook.

20. **SC.912.N.1.2:** Describe and explain what characterizes science and its methods.

**Remarks/Examples:**

Science is characterized by empirical observations, testable questions, formation of hypotheses, and experimentation that results in stable and replicable results, logical reasoning, and coherent theoretical constructs.

Florida Standards Connections: MAFS.K12.MP.3: Construct viable arguments and critique the reasoning of others.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 3 in textbook.

21. **SC.912.N.1.3:** Recognize that the strength or usefulness of a scientific claim is evaluated through scientific argumentation, which depends on critical and logical thinking, and the active consideration of alternative scientific explanations to explain the data presented.

**Remarks/Examples:**

Assess the reliability of data and identify reasons for inconsistent results, such as sources of error or uncontrolled conditions.

Florida Standards Connections: MAFS.K12.MP.2: Reason abstractly and quantitatively MAFS.K12.MP.3: Construct viable arguments and critique the reasoning of others

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 45 in textbook.

22. **SC.912.N.1.4:** Identify sources of information and assess their reliability according to the strict standards of scientific investigation.

**Remarks/Examples:**

Read, interpret, and examine the credibility and validity of scientific claims in different sources of information, such as scientific articles, advertisements, or media stories. Strict standards of science include controlled variables, sufficient sample size, replication of results, empirical and measurable evidence, and the concept of falsification.

Florida Standards Connections: LAFS.910.RST.1.1 / LAFS.1112.RST.1.1.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 15 in textbook.

23. **SC.912.N.1.6:** Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied.

**Remarks/Examples:**

Collect data/evidence and use tables/graphs to draw conclusions and make inferences based on patterns or trends in the data.

Florida Standards Connections: MAFS.K12.MP.1: Make sense of problems and persevere in solving them.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 497 in textbook.

24. **SC.912.N.2.1:** Identify what is science, what clearly is not science, and what superficially resembles science (but fails to meet the criteria for science).

**Remarks/Examples:**

Science is the systematic and organized inquiry that is derived from observations and experimentation that can be verified or tested by further investigation to explain natural phenomena (e.g. Science is testable, pseudo-science is not science seeks falsifications, pseudo-science seeks confirmations.)

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 41 in textbook.

25. **SC.912.N.2.4:** Explain that scientific knowledge is both durable and robust and open to change. Scientific knowledge can change because it is often examined and re-examined by new investigations and scientific argumentation. Because of these frequent examinations, scientific knowledge becomes stronger, leading to its durability.

**Remarks/Examples:**

Recognize that ideas with the most durable explanatory power become established theories, but scientific explanations are continually subjected to change in the face of new evidence.

Florida Standards Connections: MAFS.K12.MP.1: Make sense of problems and persevere in solving them MAFS.K12.MP.3: Construct viable arguments and critique the reasoning of others.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 3 in textbook.

26. **SC.912.N.3.1:** Explain that a scientific theory is the culmination of many scientific investigations drawing together all the current evidence concerning a substantial range of phenomena; thus, a scientific theory represents the most powerful explanation scientists have to offer.

**Remarks/Examples:**

Explain that a scientific theory is a well-tested hypothesis supported by a preponderance of empirical evidence.

Florida Standards Connections: MAFS.K12.MP.1: Make sense of problems and persevere in solving them and, MAFS.K12.MP.3: Construct viable arguments and critique the reasoning of others.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 497-498 in textbook.

27. **SC.912.N.3.2:** Describe the role consensus plays in the historical development of a theory in any one of the disciplines of science.

**Remarks/Examples:**

Recognize that scientific argument, disagreement, discourse, and discussion create a broader and more accurate understanding of natural processes and events.

Florida Standards Connections: MAFS.K12.MP.3: Construct viable arguments and critique the reasoning of others.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 498-499 in textbook.

28. **SC.912.N.3.5:** Describe the function of models in science, and identify the wide range of models used in science.

**Remarks/Examples:**

Describe how models are used by scientists to explain observations of nature.

Florida Standards Connections: MAFS.K12.MP.4: Model with mathematics.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 499 in textbook.

29. **SC.912.N.4.1:** Explain how scientific knowledge and reasoning provide an empirically-based perspective to inform society's decision making.

**Remarks/Examples:**

Recognize that no single universal step-by-step scientific method captures the complexity of doing science. A number of shared values and perspectives characterize a scientific approach.

MAFS.K12.MP.1: Make sense of problems and persevere in solving them, and MAFS.K12.MP.2: Reason abstractly and quantitatively.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 498-499 in textbook.

30. **SC.912.N.4.2:** Weigh the merits of alternative strategies for solving a specific societal problem by comparing a number of different costs and benefits, such as human, economic, and environmental.

**Remarks/Examples:**

Identify examples of technologies, objects, and processes that have been modified to advance society, and explain why and how they were modified. Discuss ethics in scientific research to advance society (e.g. global climate change, historical development of medicine and medical practices).

Florida Standards Connections: MAFS.K12.MP.1: Make sense of problems and persevere in solving them, and MAFS.K12.MP.2: Reason abstractly and quantitatively.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 15 in textbook.

31. **SC.912.P.8.1:** Differentiate among the four states of matter.

**Remarks/Examples:**

Differentiate among the four states of matter (solid, liquid, gas and plasma) in terms of energy, particle motion, and phase transitions. (Note: Currently five states of matter have been identified.)

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:  
Not addressed in textbook.

32. **SC.912.P.8.2:** Differentiate between physical and chemical properties and physical and chemical changes of matter.

**Remarks/Examples:**

Discuss volume, compressibility, density, conductivity, malleability, reactivity, molecular composition, freezing, melting and boiling points. Describe simple laboratory techniques that can be used to separate homogeneous and heterogeneous mixtures (e.g. filtration, distillation, chromatography, evaporation).

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 106-108 in textbook.

33. **SC.912.P.8.7:** Interpret formula representations of molecules and compounds in terms of composition and structure.

**Remarks/Examples:**

Write chemical formulas for simple covalent (HCl, SO<sub>2</sub>, CO<sub>2</sub>, and CH<sub>4</sub>), ionic (Na<sup>+</sup> + Cl<sup>-</sup> + NaCl) and molecular (O<sub>2</sub>, H<sub>2</sub>O) compounds. Predict the formulas of ionic compounds based on the number of valence electrons and the charges on the ions.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 106-108 in textbook.

34. **SC.912.P.8.11:** Relate acidity and basicity to hydronium and hydroxyl ion concentration and pH.

**Remarks/Examples:**

Use experimental data to illustrate and explain the pH scale to characterize acid and base solutions. Compare and contrast the strengths of various common acids and bases.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:  
Not addressed in textbook.

35. **SC.912.P.8.12:** Describe the properties of the carbon atom that make the diversity of carbon compounds possible.

**Remarks/Examples:**

Explain how the bonding characteristics of carbon lead to a large variety of structures ranging from simple hydrocarbons to complex polymers and biological molecules.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 504-507 in textbook.

36. **SC.912.P.10.1:** Differentiate among the various forms of energy and recognize that they can be transformed from one form to others.

**Remarks/Examples:**

Differentiate between kinetic and potential energy. Recognize that energy cannot be created or destroyed, only transformed. Identify examples of transformation of energy: Heat to light in incandescent electric light bulbs Light to heat in laser drills Electrical to sound in radios Sound to electrical in microphones Electrical to chemical in battery rechargers Chemical to electrical in dry cells Mechanical to electrical in generators [power plants] Nuclear to heat in nuclear reactors Gravitational potential energy of a falling object is converted to kinetic energy then to heat and sound energy when the object hits the ground.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:  
Not addressed in textbook.

37. **SC.912.P.10.18:** Explore the theory of electromagnetism by comparing and contrasting the different parts of the electromagnetic spectrum in terms of wavelength, frequency, and energy, and relate them to phenomena and applications.

**Remarks/Examples:**

Describe the electromagnetic spectrum (i.e., radio waves, microwaves, infrared, visible light, ultraviolet, X-rays and gamma rays) in terms of frequency, wavelength and energy. Solve problems involving wavelength, frequency, and energy.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 71 in textbook.

38. **SC.912.P.10.20:** Describe the measurable properties of waves and explain the relationships among them and how these properties change when the wave moves from one medium to another.

**Remarks/Examples:**

Describe the measurable properties of waves (velocity, frequency, wavelength, amplitude, period, reflection and refraction) and explain the relationships among them. Recognize that the source of all waves is a vibration and waves carry energy from one place to another.

Distinguish between transverse and longitudinal waves in mechanical media, such as springs and ropes, and on the earth (seismic waves). Describe sound as a longitudinal wave whose speed depends on the properties of the medium in which it propagates.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 77 in textbook.

39. **SC.912.P.10.21:** Qualitatively describe the shift in frequency in sound or electromagnetic waves due to the relative motion of a source or a receiver.

**Remarks/Examples:**

Describe the apparent change in frequency of waves due to the motion of a source or a receiver (the Doppler effect).

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 77 in textbook.

40. **SC.912.P.12.1:** Distinguish between scalar and vector quantities and assess which should be used to describe an event.

**Remarks/Examples:**

Distinguish between vector quantities (e.g., displacement, velocity, acceleration, force, and linear momentum) and scalar quantities (e.g., distance, speed, energy, mass, work).

MAFS.912.N-VM.1.3 (+) Solve problems involving velocity and other quantities that can be represented by vectors.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:  
Not addressed in textbook. This standard is an example of a missed opportunity in discussions about collisions in forensic science.

41. **SC.912.P.12.2:** Analyze the motion of an object in terms of its position, velocity, and acceleration (with respect to a frame of reference) as functions of time.

**Remarks/Examples:**

Solve problems involving distance, velocity, speed, and acceleration. Create and interpret graphs of 1-dimensional motion, such as position versus time, distance versus time, speed versus time, velocity versus time, and acceleration versus time where acceleration is constant.

Florida Standards Connections: MAFS.912.N-VM.1.3 (+) Solve problems involving velocity and other quantities that can be represented by vectors.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 171 in textbook.

42. **SC.912.P.12.3:** Interpret and apply Newton's three laws of motion.

**Remarks/Examples:**

Explain that when the net force on an object is zero, no acceleration occurs thus, a moving object continues to move at a constant speed in the same direction, or, if at rest, it remains at rest (Newton's first law). Explain that when a net force is applied to an object its motion will change, or accelerate (according to Newton's second law,  $F = ma$ ). Predict and explain how when one object exerts a force on a second object, the second object always exerts a force of equal magnitude but of opposite direction and force back on the first:  $F_1 \text{ on } 2 = -F_1 \text{ on } 1$  (Newton's third law).

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 380 in textbook.

43. **SC.912.P.12.5:** Apply the law of conservation of linear momentum to interactions, such as collisions between objects.

**Remarks/Examples:**

(e.g. elastic and completely inelastic collisions).

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 369 in textbook.

44. **SC.912.P.12.7:** Recognize that nothing travels faster than the speed of light in vacuum which is the same for all observers no matter how they or the light source are moving.

**Remarks/Examples:**

Recognize that regardless of the speed of an observer or source, in a vacuum the speed of light is always  $c$ .

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:

Not addressed in textbook.

45. **SC.912.P.12.9:** Recognize that time, length, and energy depend on the frame of reference.

**Remarks/Examples:**

The energy  $E$  and the momentum  $p$  depend on the frame of reference in which they are measured (e.g. Lorentz contraction).

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:

Not addressed in textbook.

46. **SC.912.P.12.12:** Explain how various factors, such as concentration, temperature, and presence of a catalyst affect the rate of a chemical reaction.

**Remarks/Examples:**

Various factors could include: temperature, pressure, solvent and/or solute concentration, sterics, surface area, and catalysts. The rate of reaction is determined by the activation energy, and the pathway of the reaction can be shorter in the presence of enzymes or catalysts. Examples may include: decomposition of hydrogen peroxide using manganese (IV) oxide nitration of benzene using concentrated sulfuric acid hydrogenation of a  $C=C$  double bond using nickel.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

pp. 508-512 in textbook.

47. **LAFS.1112.RST.1.1:** Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 97 in textbook.

48. **LAFS.1112.RST.1.2:** Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 8 in textbook.

49. **LAFS.1112.RST.1.3:** Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

pp. 29-37 in textbook.

50. **LAFS.1112.RST.2.4:** Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 3 in textbook.

51. **LAFS.1112.RST.2.5:** Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

pp. 17-18 in textbook.

52. **LAFS.1112.RST.2.6:** Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 152 in textbook.

53. **LAFS.1112.RST.3.7:** Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 33-34 in textbook.

54. **LAFS.1112.RST.3.8:** Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 15 in textbook.

55. **LAFS.1112.RST.3.9:** Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p.8 in textbook

56. **LAFS.1112.RST.4.10:** By the end of grade 12, read and comprehend science/technical texts in the grades 11–12 text complexity band independently and proficiently.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 6 in textbook.

57. **LAFS.1112.SL.1.1:** Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

- a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.
- b. Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed.
- c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives.
- d. Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 20-21 in textbook.

58. **LAFS.1112.SL.1.2:** Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 33-34 in textbook.

59. **LAFS.1112.SL.1.3:** Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone used.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 116 in textbook.

60. **LAFS.1112.SL.2.4:** Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 33-34 in textbook.

61. **LAFS.1112.SL.2.5:** Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 33-34 in textbook.

62. **LAFS.1112.WHST.1.1:** Write arguments focused on discipline-specific content.

- a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.
- b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.
- c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
- d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
- e. Provide a concluding statement or section that follows from or supports the argument presented.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 45 in textbook.

63. **LAFS.1112.WHST.1.2:** Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

- a. Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
- b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
- c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.
- d. Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.
- e. Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp. 33-34 in textbook.

64. **LAFS.1112.WHST.2.4:** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 94 in textbook.

65. **LAFS.1112.WHST.2.5:** Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 94 in textbook.

66. **LAFS.1112.WHST.2.6:** Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 33 in textbook.

67. **LAFS.1112.WHST.3.7:** Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p. 8 in textbook.



68. **LAFS.1112.WHST.3.8:** Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p.8 in textbook.

69. **LAFS.1112.WHST.3.9:** Draw evidence from informational texts to support analysis, reflection, and research.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 34 in textbook.

70. **LAFS.1112.WHST.4.10:** Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p.45 in textbook.

71. **LAFS.910.RST.1.1:** Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 97 in textbook.

72. **LAFS.910.RST.1.3:** Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

pp. 29-37 in textbook.

73. **LAFS.910.RST.2.4:** Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p.3 in textbook.

74. **LAFS.910.RST.2.5:** Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 135 in textbook.

75. **LAFS.910.RST.3.7:** Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p. 28 in textbook.

76. **LAFS.910.RST.4.10:** By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:

p.6 in textbook.

77. **LAFS.910.WHST.1.2:** Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

a. Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

b. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among

ideas and concepts.

- d. Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers.
- e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
- f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
pp.33-34 in textbook.

78. **LAFS.910.WHST.3.9:** Draw evidence from informational texts to support analysis, reflection, and research.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p.34 in textbook..

79. **MAFS.912.F-IF.3.7:** Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.

- a. Graph linear and quadratic functions and show intercepts, maxima, and minima.
- b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.
- c. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.
- d. Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.
- e. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude, and using phase shift.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:  
Not addressed in textbook.

80. **MAFS.912.N-Q.1.1:** Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:  
Not addressed in textbook.

81. **MAFS.912.N-Q.1.3:** Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p.75 in textbook.

82. **MAFS.912.N-VM.1.3:** Solve problems involving velocity and other quantities that can be represented by vectors.

VERY GOOD ALIGNMENT  **GOOD ALIGNMENT**  FAIR ALIGNMENT  POOR ALIGNMENT  VERY POOR/NO ALIGNMENT

Justification:  
p.171 in textbook.

83. **ELD.K12.ELL.SC.1:** English language learners communicate information, ideas and concepts necessary for academic success in the content area of Science.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:  
No ESOL accommodations.

84. **ELD.K12.ELL.SI.1:** English language learners communicate for social and instructional purposes within the school setting.

VERY GOOD ALIGNMENT  GOOD ALIGNMENT  FAIR ALIGNMENT  POOR ALIGNMENT  **VERY POOR/NO ALIGNMENT**

Justification:  
No ESOL accommodations.