Instructional Materials Administrator

BID 3300

Recommendation

Yes

Comments: This publication had a variety of resources including the science notebook, the use of foldables, videos, stem projects, math practice, higher order questions, historical facts and practical lab applications. The labs are such that the materials were common meaning, it consisted of materials that the teacher probably has on hand and are not tedious or time consuming to set up.

Material for Review

Course: Physical Science (2003310)
Title: Glencoe Physical Science, Florida Edition , Edition: 1
Copyright: 2019
Author: McGraw-Hill Education, LLC
Grade Level: 9 - 12

Content

Answer each item below and select the "Save" button to save your responses. You must select the "Save" button before going to another section or leaving this page to save the answers you have provided. If you are unable to complete the section, you may save your answers and come back to complete at a later time. All items must be answered for a section to be considered complete.
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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

Upon completion of all Areas of Review, the Recommendation link will become available with a record of how you scored each section of the evaluation.

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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 curriculum1. 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:
Yes, the major concepts, and essential questions along with the other materials are aligned with the state benchmarks.

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:
Yes, the material is such that it should be understood by the targeted audience.

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:
Yes, the materials such as the videos and the mini labs are useful for classroom instruction to reinforce the various topics.

B. Level of Treatment4. 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:
Yes, there were many examples of real world applications and how they affect the environment. For example, one of the stem projects was to create a recycling program at the student's school.

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:
Yes, some of the labs were very simple and the answer is apparent, but there were other tools present to create a challenge for the students like creating their own mag lev train. In addition, the section review questions were challenging and I think they will cause the students to think before they answer.

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:
Yes, the material was challenging enough, yet not overwhelming for the current grade level.

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:
Yes, the mini labs and videos for example were such that they could be completed in a typical block of class time.

C. Expertise for Content Development8. 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:
Yes, one of the videos I viewed was from Bozeman science. Paul Anderson is a teacher of varied subjects. I have used his videos and examples to explain concepts to my students. There are also other sources and historical aspects of the book that add to the value of the resources.

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:
Yes, all the resources reinforce the benchmarks.

D. Accuracy of Content10. 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:
I did not see any errors in this publication.

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:
Yes, all material was presented objectively. The publication exhibited the content of the benchmarks.

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:
This publication made good use of real world models to reinforce the 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:
Yes, the material was factual based on my studies and experience as a physical science teacher.

E. Currency of Content14. 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:
The content is very up to date. It included technology that I had not heard of before such as parabolic troughs. The use of technology is a relevant theme throughout the text.

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:
Yes, the content is presented to the curriculum standards and benchmarks. The higher ordered questions, foldables, mini labs, stem projects and science notebook are all aligned.

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:
Yes, the information is presented in a format that could be understood by the intended learners. The material is chunked into sections for ease of understanding. Also, the content is presented in a variety of ways.

F. Authenticity of Content17. 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:
Yes, the material is varied with real world examples. The pictures, labs and questions are related to real world phenomena such as calculating the cost of the use of home appliances.

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:
Yes, the material connects to other subjects such as math (calculating Newton's laws), writing (recording lab information) and reading, (reading for understanding).

G. Multicultural Representation19. 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:
I did not see any visuals that were biased toward a particular group of people. The representation of various groups were varied and fair.

H. Humanity and Compassion20. 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:
Materials were appropriately displayed.

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:
Yes, the benchmarks were thoroughly covered.

Presentation

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A. Comprehensiveness of Student and Teacher Resources1. 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:
The resources are varied and coincide with the benchmarks.

B. Alignment of Instructional Components2. 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:
Yes, all the materials reinforce the major tool.

C. Organization of Instructional Materials3. 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:
Yes all the materials are logically organized to maximize student understanding.

D. Readability of Instructional Materials4. 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:
Visuals are appropriate to keep students engaged. The activities range from simple on the mini labs to complex on the stem unit projects.

E. Pacing of Content5. 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:
The pace is such that the students can grasp the information. Each section is divided properly and focuses on various subtopics.

Accessibility6. 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:
Yes the material contain videos, minl labs, science notebook, foldables, higher order questions, and practice problems to reinforce each topic.

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:
The presentation of the content is visually appealing, relate to the content and would stimulate curiosity in the students. The visuals relate well with the topics and relate to real world situations.

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:
Yes, the visuals were appealing and incite curiosity.

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:
Yes, the materials for each subject were thoroughly displayed and taught.

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:
Yes, the text was clear and concepts were explained well. The information was challenging, but not too difficult.

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:
Yes, the materials were very supportive of student learning. The resources were varied. Students could gain understanding through videos, mini labs, science notebooks, foldables, math practice and questioning.

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:
Yes, this publication is adaptable to varied learning styles. the book had resources for ESOL learners as well.

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:
Yes, the information, pictures, historical facts, technology and fusion of real life applications will engage the students.

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:
This publication included varied materials that were an extension of the content outlined by the benchmarks. As stated previously, the resources were varied, allowing the student to understand the information in various ways.

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:
Yes, I like the use of foldables in which the students categorize information to help them understand how ideas are related. The end of each chapter also consisted of a concept map to help the students understand the main idea of the teach topic.

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:
Yes, teachers have access to an electronic book, calendar, lesson planner, videos, & editable quizzes to assess student learning.

G. Targeted Assessment Strategies10. 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:
Yes, there were many assessment strategies such as labs, questioning, quizzes, and the science notebook to assess learning outcomes.

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:
Yes, the questions reflect what was read within the chapter. Additionally, the section review questions were set up in such a way that challenged the students. The questions were not just short answer questions. It is evident that the questions require some thinking.

Universal Design for Learning12. 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:
Yes, the needs of the students are considered. Students learn in variety of ways; therefore the fact that varied resources were used will help the students retain the content.

Mathematical Practice13. 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:
Yes, the mathematical applications were appropriate. Graphs were used in the labs throughout the text. The math problems included steps to solve it and provided practice for the students.

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:
Yes, the submission satisfies the learning requirements. The resources and assessments are appropriate and varied.

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
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.7.1:** Analyze the movement of matter and energy through the different biogeochemical cycles, including water and carbon.

Remarks/Examples:
Describe that the Earth system contains fixed amounts of each stable chemical element and that each element moves among reservoirs in the solid earth, oceans, atmosphere and living organisms as part of biogeochemical cycles (i.e., nitrogen, water, carbon, oxygen and phosphorus), which are driven by energy from within the Earth and from the Sun.

(●) **VERY GOOD ALIGNMENT** ( ) GOOD ALIGNMENT ( ) FAIR ALIGNMENT ( ) POOR ALIGNMENT ( ) VERY POOR/NO ALIGNMENT
Justification:
This information was found in the applying practices worksheet.

2. **SC.912.L.18.7:** Identify the reactants, products, and basic functions of photosynthesis.

(●) **VERY GOOD ALIGNMENT** ( ) GOOD ALIGNMENT ( ) FAIR ALIGNMENT ( ) POOR ALIGNMENT ( ) VERY POOR/NO ALIGNMENT
Justification:
It was seen in the applying practices worksheet.

3. **SC.912.L.18.8:** Identify the reactants, products, and basic functions of aerobic and anaerobic cellular respiration.

(●) **VERY GOOD ALIGNMENT** ( ) GOOD ALIGNMENT ( ) FAIR ALIGNMENT ( ) POOR ALIGNMENT ( ) VERY POOR/NO ALIGNMENT
Justification:
This was found on page 536 and students were directed to the applying practices section for this topic.

4. **SC.912.L.18.12:** Discuss the special properties of water that contribute to Earth's suitability as an environment for life: cohesive behavior, ability to moderate temperature, expansion upon freezing, and versatility as a solvent.

Remarks/Examples:
Annually assessed on Biology EOC.

(●) **VERY GOOD ALIGNMENT** ( ) GOOD ALIGNMENT ( ) FAIR ALIGNMENT ( ) POOR ALIGNMENT ( ) VERY POOR/NO ALIGNMENT
Justification:
This was evident in chapter 8.

5. **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:
This was evident through out this publication. Questions were posed at the beginning and the end of the chapter to synthesize and assess ideas as well as other resources.

6. **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:
This was evident throughout the publication through the use of experiments and mini labs.

7. **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:
This was evident in chapter 1 as well as throughout the entire book.

8. **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:
This was evident on page 771.

9. **SC.912.N.1.5:** Describe and provide examples of how similar investigations conducted in many parts of the world result in the same outcome.

Remarks/Examples:
Recognize that contributions to science can be made and have been made by people from all over the world.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This was evident at the end of each chapter which included an article about something that was discovered in science.

10. **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:
This was evident in chapter 1 and throughout this publication by use of stem projects, experiments and mini labs.

11. **SC.912.N.1.7:** Recognize the role of creativity in constructing scientific questions, methods and explanations.

Remarks/Examples:
Work through difficult problems using creativity, and critical and analytical thinking in problem solving (e.g. convergent versus divergent thinking and creativity in problem solving).

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:
This was evident in chapter 1. Knowledge along with creativity are needed for technology and to create something new.

12. **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:
This was evident in chapter 1 and throughout which mentions starting with a testable hypothesis and attempting to explain it through experimentation.

13. **SC.912.N.2.2:** Identify which questions can be answered through science and which questions are outside the boundaries of scientific investigation, such as questions addressed by other ways of knowing, such as art, philosophy, and religion.

Remarks/Examples:
Identify scientific questions that can be disproved by experimentation/testing. Recognize that pseudoscience is a claim, belief, or practice which is presented as scientific, but does not adhere to strict standards of science (e.g. controlled variables, sample size, replicability,

empirical and measurable evidence, and the concept of falsification).

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:
This was mentioned in chapter 1 that there are some questions or values that cannot be tested such as personal opinion, emotions or values.

14. **SC.912.N.2.3:** Identify examples of pseudoscience (such as astrology, phrenology) in society.

Remarks/Examples:
Determine if the phenomenon (event) can be observed, measured, and tested through scientific experimentation.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This is evident on page 11. Data must be peer reviewed to test its validity.

15. **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:
This was evident in chapter 1 section 4 which focuses on technology. The real world question in the beginning asks the students to imagine life without cell phones or computers.

16. **SC.912.N.2.5:** Describe instances in which scientists' varied backgrounds, talents, interests, and goals influence the inferences and thus the explanations that they make about observations of natural phenomena and describe that competing interpretations (explanations) of scientists are a strength of science as they are a source of new, testable ideas that have the potential to add new evidence to support one or another of the explanations.

Remarks/Examples:
Recognize that scientific questions, observations, and conclusions may be influenced by the existing state of scientific knowledge, the social and cultural context of the researcher, and the observer's experiences and expectations. Identify possible bias in qualitative and quantitative data analysis.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This is evident on page 7. It states that as new things are learned explanations have to be modified.

17. **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:
This is evident on page 7. It states that some concepts have been studied fro centuries like what an atom looks like.

18. **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:
This is evident on page 7 in which it talks about how various scientists have their own theories about what an atom looks like.

19. **SC.912.N.3.3:** Explain that scientific laws are descriptions of specific relationships under given conditions in nature, but do not offer explanations for those relationships.

Remarks/Examples:
Recognize that a scientific theory provides a broad explanation of many observed phenomena while a scientific law describes how something behaves.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This is evident on page 13. A theory is an explanation of an observation that may change. A law is something that happens in nature that appear to be true all the time.

20. **SC.912.N.3.4:** Recognize that theories do not become laws, nor do laws become theories; theories are well supported explanations and laws are well supported descriptions.

Remarks/Examples:
Recognize that theories do not become laws, theories explain laws. Recognize that not all scientific laws have accompanying explanatory theories.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This was evident on page 13. Laws explain phenomena. Theories explain laws. Theories are a possible explanation for an observation.

21. **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:
This is evident on page 12. It explains that models are necessary when the scientist cannot physically access the actual model like something that is hazardous for example.

22. **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:
This is evident on page 8. Some investigations may lead to other questions and sometimes a hypothesis is not supported so you must repeat the experiment.

23. **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:
This is evident on page 26. There is a picture of a woman with a robotic arm. This shows how technology has improved and the robotic hand, if programmed properly, can work like a real human hand.

24. **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:
This is evident on page 432 in chapter 14. On pages 432 & 433 the text defines and gives examples of the 4 states of matter.

25. **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:
This is evident in chapter 14 and 17.

26. **SC.912.P.8.4:** Explore the scientific theory of atoms (also known as atomic theory) by describing the structure of atoms in terms of protons, neutrons and electrons, and differentiate among these particles in terms of their mass, electrical charges and locations within the atom.

Remarks/Examples:
Explain that electrons, protons and neutrons are parts of the atom and that the nuclei of atoms are composed of protons and neutrons, which experience forces of attraction and repulsion consistent with their charges and masses.

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

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This is evident in chapter 16. This chapter discusses the relative size of subatomic particles, their masses and how they are acquired.

27. **SC.912.P.8.5:** Relate properties of atoms and their position in the periodic table to the arrangement of their electrons.

Remarks/Examples:
Use the periodic table and electron configuration to determine an element's number of valence electrons and its chemical and physical properties. Explain how chemical properties depend almost entirely on the configuration of the outer electron shell.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This is evident in section 3 chapter 16. It discusses the trends of the periodic table based on mass, subatomic particles, and number of valence electrons.

28. **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, SO2, CO2, and CH4), ionic (Na+ + Cl- +NaCl) and molecular (O2, H2O) 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:
This can be found in chapter 18 in which it is explained how oxidation numbers and number of valence electrons determines which elements will bond with 1 another.

29. **SC.912.P.8.8:** Characterize types of chemical reactions, for example: redox, acid-base, synthesis, and single and double replacement reactions.

Remarks/Examples:
Classify chemical reactions as synthesis (combination), decomposition, single displacement (replacement), double displacement, and combustion.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This can be found in chapter 19 sections 2.

30. **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:
This can be found in chapter 22.

31. **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:
This is seen in chapter 4 section 2.

32. **SC.912.P.10.3:** Compare and contrast work and power qualitatively and quantitatively.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
Chapter 4 explains how power is how fast work is done. Examples are used and a math practice is there for the students to understand how power works and how to calculate it.

33. **SC.912.P.10.4:** Describe heat as the energy transferred by convection, conduction, and radiation, and explain the connection of heat to change in temperature or states of matter.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
Chapter 5 section 2 demonstrates how energy is transferred by radiation conduction and convection and how temperature is involved in changing states of matter.

34. **SC.912.P.10.5:** Relate temperature to the average molecular kinetic energy.

Remarks/Examples:
Recognize that the internal energy of an object includes the energy of random motion of the object's atoms and molecules, often referred to as thermal energy.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
Chapter 5 discusses how changes in thermal energy affect the speed of the motion of molecules in a substance,

35. **SC.912.P.10.7:** Distinguish between endothermic and exothermic chemical processes.

Remarks/Examples:
Classify chemical reactions and phase changes as exothermic (release thermal energy) or endothermic (absorb thermal energy).

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This is found in chapter 19 section 3. It talks about how energy is released or absorbed.

36. **SC.912.P.10.10:** Compare the magnitude and range of the four fundamental forces (gravitational, electromagnetic, weak nuclear, strong nuclear).

Remarks/Examples:
Recognize and discuss the effect of each force on the structure of matter and the evidence for it.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This is found on page 622. It distinguishes the difference between the 4 fundamental forces.

37. **SC.912.P.10.12:** Differentiate between chemical and nuclear reactions.

Remarks/Examples:

Describe how chemical reactions involve the rearranging of atoms to form new substances, while nuclear reactions involve the change of atomic nuclei into entirely new atoms. Identify real-world examples where chemical and nuclear reactions occur every day.

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

Justification:
This is found in chapter 19 section 2. It gives examples of how elements can be rearranged to form new compounds and chemical equations.

38. **SC.912.P.10.14:** Differentiate among conductors, semiconductors, and insulators.

Remarks/Examples:

Describe band structure, valence electrons, and how the charges flow or rearrange themselves between conductors and insulators.

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

Justification:
This is found in chapter 6 section 1. It demonstrates the difference between conductor and insulators and how electrons flow easily through a conductor.

39. **SC.912.P.10.15:** Investigate and explain the relationships among current, voltage, resistance, and power.

Remarks/Examples:

Use Ohm's and Kirchhoff's laws to explain the relationships among circuits.

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

Justification:
Page 178 talks about the relationship between voltage and current.

40. **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:
This is found in chapter 11 section 1.

41. **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:
This is found in chapter 11 section 2. It discusses how the motion of waves and the distance between them affect loudness.

42. **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:
This was evident in chapter 4 sections 1 & 2.

43. **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: F1 on 2 = -F1 on 1 (Newton's third law).

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This was evident in chapter 3 sections 2 & 3.

44. **SC.912.P.12.4:** Describe how the gravitational force between two objects depends on their masses and the distance between them.

Remarks/Examples:
Describe Newton's law of universal gravitation in terms of the attraction between two objects, their masses, and the inverse square of the distance between them.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
Evident on page 76.

45. **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:
Seen on page 89.

46. **SC.912.P.12.10:** Interpret the behavior of ideal gases in terms of kinetic molecular theory.

Remarks/Examples:
Using the kinetic molecular theory, explain the behavior of gases and the relationship between pressure and volume (Boyle's law), volume and temperature (Charles's law), pressure and temperature (Gay-Lussac's law), and number of particles in a gas sample (Avogadro's hypothesis).

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
Evident in chapter 14 section 3.

47. **SC.912.P.12.11:** Describe phase transitions in terms of kinetic molecular theory.

Remarks/Examples:
Explain, at the molecular level, the behavior of matter as it undergoes phase transitions.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
Seen in chapter 14 section 1.

48. **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:
Seen in chapter 19 section 4.

49. **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:
Seen in chapter 1, page 11.

50. **LAFS.910.RST.1.2:** Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
Chapter 1 pages 10 & 11.

51. **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:
Chapter 1 pages 7-11.

52. **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:
Yes, evidenced in the foldables and science notebook.

53. **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:
Evidence by the use of foldables at the beginning of the chapter.

54. **LAFS.910.RST.2.6:** Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
Evident in the labs and mini labs through out the publication.

55. **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:
Evident throughout this publication when recording data for labs and mini labs.

56. **LAFS.910.RST.3.8:** Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This was evident in the worksheet resources., what science is and what it isn't.

57. **LAFS.910.RST.3.9:** Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
Evident on the lab on page 33.

58. **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:
This can only be determined by the student's reading level when they come to 9th grade. If a student is on grade level with reading, then they will be able to comprehend independently and proficiently.

59. **LAFS.910.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 9–10 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 set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed.
c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions.
d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.

VERY GOOD ALIGNMENT **GOOD ALIGNMENT** FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This can only be determined by the student's skills and strengths when it comes to communicating information. If they are on level with reading and are enthusiastic about learning, then yes they can participate in science discussions.

60. **LAFS.910.SL.1.2:** Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
Yes, this publication provides source from a variety of outlets and encourages research outside the textbook to solve problems and it also encouraging creating models for the purpose of learning through inquiry.

61. **LAFS.910.SL.1.3:** Evaluate a speaker’s point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
Yes, if they can analyze and reason written text, then this should translate to analyzing a speaker's point of view. They should know how to analyze whether something is scientifically sound.

62. **LAFS.910.SL.2.4:** Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
Evident throughout the publication through labs and mini labs.

63. **LAFS.910.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:
Yes, this is evident in chapter 1 and throughout this publication in the stem projects, and at the beginning and end of the chapters.

64. **LAFS.910.WHST.1.1:** Write arguments focused on discipline-specific content.

a. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.
b. Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience’s knowledge level and concerns.
c. Use words, phrases, and clauses 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:
Yes, student should be ale to do this on a basic level.

65. **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:
Evident throughout the publication through labs and mini labs.

66. **LAFS.910.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:
Evident throughout the publication through labs and mini labs.

67. **LAFS.910.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:
Evident throughout the publication through labs and mini labs.

68. **LAFS.910.WHST.2.6:** Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

VERY GOOD ALIGNMENT **GOOD ALIGNMENT** FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
This may be beyond the scope of a 9th grader's abilities, but they can use the internet for research.

69. **LAFS.910.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:
Evident a the beginning of each unit in which a stem project is assigned.

70. **LAFS.910.WHST.3.8:** Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.

VERY GOOD ALIGNMENT GOOD ALIGNMENT FAIR ALIGNMENT POOR ALIGNMENT VERY POOR/NO ALIGNMENT
Justification:
Yes, if they understand how to use the scientific method outlined in chapter 1 to assess various sources and are knowledgeable about what is science and what is not. Also, they should know which hypotheses can be tested.

71. **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:
Yes this was evident in chapter 1 and through out this publication with labs and mini labs.

72. **LAFS.910.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:
Evident throughout the publication through labs and mini labs.

73. **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:
Evident throughout the publication through labs and mini labs. Also evident in chapter in which it shows the steps of the scientific method.

74. **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:
Evident in chapter 1 section 2 in which it is stated that a standard unit of measurement is needed so that all measurements will be in accordance with other measurements.

75. **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:
I saw resources in Spanish as well as a multilingual dictionary.

76. **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:
I did not see evidence of this.