Bid 3363

INSTRUCTIONAL MATERIALS ADMINISTRATOR

Recommendation

Yes

Comments: I am impressed with the strength of this resource especially for schools that are well equipped with digital media resources. The adaptability is a strong point, language translation, lexile adjustment, interactive glossary for example.
I was not able to review any of the print resources, but I worry that schools that are fully equipped with powerful wifi and computers may not get as much benefit from this resource.

Material for Review

Course: Earth/Space Science (2001310)
Title: Discovery Education Science Techbook (Florida) - Earth & Space Science , Edition: 1
Copyright: 2017
Author: Amy Gensemer, David Marsland, Nikki Snyder
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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5 - VERY GOOD ALIGNMENT
4 - GOOD ALIGNMENT
3 - FAIR ALIGNMENT
2 - POOR ALIGNMENT
1 - VERY POOR/NO ALIGNMENT

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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:
This adoption does a good job with matching to standards.

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:
At the click of a button the lexile range can be raised or lowered.

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:
Excellent adaptability

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:
Great enrichment and remedial activities and resources provided

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:
Adjustable to fit needs of students

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:
Adjustable to fit needs of students

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:
Adjustable to fit needs of students

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:
the information provided is high quality

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:
the information provided is high quality

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:
no errors were seen

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:
no bias or contradictions were witnessed

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:
the content of these materials are strong

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 mistakes were onserved

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 accurate and up to date and according to publisher it is continually updated.

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:

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:
adjustable to meet needs of student

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:
STEM connections are visible throughout text.

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:
Follows the 5 E model which links easily with other disciplines.

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:
fairly good mix

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:
yes

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:
a welcome resources for teachers and students

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:
Adjustable to lexile and language differences

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:
well aligned with standards

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:
yes

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:
very engaging for this level of student

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:
also adjustable to teachers needs

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:
highlighting, note taking, lexile levels, and interactive glossary are excellent features

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:
Amazing resource especially for schools with full digital media integration

Learning

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A. Motivational Strategies1. A. Instructional materials include features to maintain learner motivation.

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

Justification:
speech to text, embedded videos, interactive glossary

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:
and provide additional support or enrichment as needed

C. Explicit Instruction3. C. The materials contain clear statements of information and outcomes.

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

Justification:
each unit starts with an Overarching question, Focus question and lesson questions

D. Guidance and Support4. 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:
interactive glossary, highlighting, language translation, note taking

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:
languages, lexile levels, enrichment and remediation

E. Active Participation of Students6. 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:
lots of project starters and hands-on activities are included

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:
so many resources and links to additional materials are included

F. Targeted Instructional Strategies8. 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:
Uses 5-E model as well as STEM focused activities

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:
From Engage to Evaluate each level of learning is addressed and supported

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:
assessment questions and review materials are included

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:
Review and assessment materials can be graded in real time and assigned based on student level

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:
lexile adjustment, language translation, remedial and enrichment resources make this and easily adaptable program.

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:
Some activities are strongly correlated to math practices

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:
A strong choice for schools with strong digital platforms

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.5.1:** Cite evidence used to develop and verify the scientific theory of the Big Bang (also known as the Big Bang Theory) of the origin of the universe.

Remarks/Examples:
Explain evidence to support the formation of the universe, which has been expanding for approximately 15 billion year (e.g. ratio of gases, red-shift from distant galaxies, and cosmic background radiation).

○ VERY GOOD ALIGNMENT ◉ **GOOD ALIGNMENT** ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Hands-On Activity: Explaining the Big Bang p 1 > The Origins of the Universe

2. **SC.912.E.5.2:** Identify patterns in the organization and distribution of matter in the universe and the forces that determine them.

Remarks/Examples:
Identify patterns that influence the formation, heirarchy, and motions of the various kinds of objects in the solar system and the role of gravity and inertia on these motions (include the Sun, Earth, and Moon, planets, satellites, comets, asteroids, star clusters, galaxies, galaxy clusters). Recognize that the universe contains many billions of galaxies, and each galaxy contains many billions of stars. Recognize that constellations are contrived associations of stars that do not reflect functional relationships in space.

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:
Planets and Moons > Explore > p 1 > What are the characteristics of the planets and moons? Explore More Resources > Exploration: Characteristics of Our Solar System Explore More Resources > Exploration: Movements in Space

3. **SC.912.E.5.3:** Describe and predict how the initial mass of a star determines its evolution.

Remarks/Examples:
Compare and contrast the evolution of stars of different masses (include the three outcomes of stellar evolution based on mass: black hole, neutron star, white dwarf). Differentiate between the different types of stars found on the Hertzsprung-Russell diagram and the balance between gravitational collapse and nuclear fusion in determining the color, brightness, and life span of a star.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Hands-On Activity: Locate the Sun on the H-R Diagram Hands-On Activity: Nucleosynthesis Hands-On Lab: Model a Star's Life Cycle

4. **SC.912.E.5.4:** Explain the physical properties of the Sun and its dynamic nature and connect them to conditions and events on Earth.

Remarks/Examples:
Describe the physical properties of the Sun (sunspot cycles, solar flares, prominences, layers of the Sun, coronal mass ejections, and nuclear reactions) and the impact of the Sun as the main source of external energy for the Earth.

○ VERY GOOD ALIGNMENT ◉ **GOOD ALIGNMENT** ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
STEM Project Starters page 1 > Project: ICME Shield Explore > p 1 > Stars Release Energy Hands-On Activity: Monitoring Solar Activity

5. **SC.912.E.5.5:** Explain the formation of planetary systems based on our knowledge of our Solar System and apply this knowledge to newly discovered planetary systems.

Remarks/Examples:
Describe how evidence from the study of our Solar System and newly discovered extra solar planetary systems supports the Nebular theory of the formation of planetary systems.

○ VERY GOOD ALIGNMENT ◉ **GOOD ALIGNMENT** ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Explore More Resources > Exploration: Characteristics of Our Solar System Explore > p 1: TEI Formation of the Solar System

6. **SC.912.E.5.6:** Develop logical connections through physical principles, including Kepler's and Newton's Laws about the relationships and the effects of Earth, Moon, and Sun on each other.

Remarks/Examples:
Explain that Kepler's laws determine the orbits of objects in the solar system and recognize that Kepler's laws are a direct consequence of Newton's Law of Universal Gravitation and Laws of Motion.

○ VERY GOOD ALIGNMENT ◉ **GOOD ALIGNMENT** ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Movements in Space > p 1 > How Are Movements of Objects In Space Categorized? Explore More Resources > Exploration: Movements in Space

7. **SC.912.E.5.9:** Analyze the broad effects of space exploration on the economy and culture of Florida.

Remarks/Examples:
Recognize the economic, technical and social benefits of spinoff technology developed through the space program.

○ VERY GOOD ALIGNMENT ◉ **GOOD ALIGNMENT** ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
STEM Project Starters page 2 > Project: Florida's Space

8. **SC.912.E.5.11:** Distinguish the various methods of measuring astronomical distances and apply each in appropriate situations.

Remarks/Examples:
Determine which units of measurement are appropriate to describe distance (e.g. astronomical units, parallax, and light years).

Florida Standards Connections: MAFS.K12.MP.5: Use appropriate tools strategically and MAFS.K12.MP.6: Attend to precision.

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

Justification:
STEM in Action: Applying Understanding the Universe Elaborate with STEM > STEM in Action: Applying Measuring Distances in space> Explore > p 1 > How Is Distance Measured in Space?

9. **SC.912.E.6.1:** Describe and differentiate the layers of Earth and the interactions among them.

Remarks/Examples:
Recognize the importance of the study of seismic wave data and how it can be used to determine the internal structure, density variations, and dynamic processes between Earth's layers.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Explore > Explore More Resources > Exploration: Earth's Interior Hands-On Activity: Model Earth's Interior How Do Physical Conditions and Mineral Composition Change with Depth beneath Earth's Surface?

10. **SC.912.E.6.2:** Connect surface features to surface processes that are responsible for their formation.

Remarks/Examples:
Identify various landforms (e.g. dunes, lakes, sinkholes, aquifers) and describe how they form (erosion, physical/chemical weathering, and deposition). Explain how sea level changes over time have exposed and inundated continental shelves, created and destroyed inland seas, and shaped the surface of the Earth.

○ VERY GOOD ALIGNMENT ◉ **GOOD ALIGNMENT** ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Explore More Resources> Hands-On Activity: Feedback Effects on Earth's Surface Features Project: Tectonic Plate Interactions Hands-On Lab: Streaming Water

11. **SC.912.E.6.3:** Analyze the scientific theory of plate tectonics and identify related major processes and features as a result of moving plates.

Remarks/Examples:
Discuss the development of plate tectonic theory, which is derived from the combination of two theories: continental drift and seafloor spreading. Compare and contrast the three primary types of plate boundaries (convergent, divergent, and transform). Explain the origin of geologic features and processes that result from plate tectonics (e.g. earthquakes, volcanoes, trenches, mid-ocean ridges, island arcs and chains, hot spots, earthquake distribution, tsunamis, mountain ranges).

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Hands-On Lab: Demonstrating Plate Tectonics Hands-On Activity: Feedback Effects on Earth's Surface Features Hands-On Activity: San Andreas Fault Movement

12. **SC.912.E.6.4:** Analyze how specific geologic processes and features are expressed in Florida and elsewhere.

Remarks/Examples:
Describe the effect of ocean and Gulf water currents, gravel mining, beach erosion, dune development, aquifers and ground water, salt water intrusion, springs, and sink holes on the formation of the Florida peninsula. Explain the effects of latitude, elevation, topography (land surface type), proximity to large bodies of water, and temperature of ocean currents, on climate in Florida.

○ VERY GOOD ALIGNMENT ◉ **GOOD ALIGNMENT** ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Hands-On Lab: Can You Save Sandy Village from Erosion? Reading Passage: Sinkhole Formation

13. **SC.912.E.6.5:** Describe the geologic development of the present day oceans and identify commonly found features.

Remarks/Examples:
Describe the topography of the ocean floor and how it formed (e.g. plate tectonics, sea level changes).

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Explore > p 1 > What is the process of seafloor spreading? Hands-On Lab: A CrossSection of the Ocean Floor STEM in Action: Applying an Understanding of Ocean Environments

14. **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:
Explore > p 1 > Reading Passage: The Ocean Sinks Carbon Explore More Resources > Exploration: The Cycling of Matter and Energy
Explore More Resources > Hands-On Lab: Modeling the Carbon Cycle

15. **SC.912.E.7.2:** Analyze the causes of the various kinds of surface and deep water motion within the oceans and their impacts on the transfer of energy between the poles and the equator.

Remarks/Examples:
Explain how surface and deep-water circulation patterns (Coriolis effect, La Niñ a, El Niñ o, Southern Oscillation, upwelling, ocean surface cooling, freshwater influx, density differences, Labrador Current and Gulf Stream) impact energy transfer in the environment.

○ VERY GOOD ALIGNMENT ◉ **GOOD ALIGNMENT** ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Explore > p 2 > How does ocean water move?> Hands-On Lab: Salinity, Density, and Temperature in Water

16. **SC.912.E.7.3:** Differentiate and describe the various interactions among Earth systems, including: atmosphere, hydrosphere, cryosphere, geosphere, and biosphere.

Remarks/Examples:
Interactions include transfer of energy (biogeochemical cycles, water cycle, ground and surface waters, photosynthesis, radiation, plate tectonics, conduction, and convection), storms, winds, waves, erosion, currents, deforestation and wildfires, hurricanes, tsunamis, volcanoes.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Explore More Resources > Exploration: Earth's Spheres Project: Deepwater Horizon Update Exploration: The Cycling of Matter and Energy

17. **SC.912.E.7.4:** Summarize the conditions that contribute to the climate of a geographic area, including the relationships to lakes and oceans.

Remarks/Examples:
Describe how latitude, altitude, topography, prevailing winds, proximity to large bodies of water, vegetation and ocean currents determine the climate of a geographic area.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Exploration: Understanding Climate Explore > p 1 > What Factors Determine Climate?> Project: Keeping Current

18. **SC.912.E.7.5:** Predict future weather conditions based on present observations and conceptual models and recognize limitations and uncertainties of such predictions.

Remarks/Examples:
Use models, weather maps and other tools to predict weather conditions and differentiate between accuracy of short-range and long-range weather forecasts.

○ VERY GOOD ALIGNMENT ◉ **GOOD ALIGNMENT** ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
STEM Project Starters page 1 > Project: Verifying the Forecast Understanding Weather > Explore > Explore More Resources

19. **SC.912.E.7.6:** Relate the formation of severe weather to the various physical factors.

Remarks/Examples:
Identify the causes of severe weather. Compare and contrast physical factors that affect the formation of severe weather events (e.g. hurricanes, tornados, flash floods, thunderstorms, and drought).

○ VERY GOOD ALIGNMENT ◉ **GOOD ALIGNMENT** ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
STEM in Action: Applying Understanding Weather> Explore > p 1 > Severe Weather

20. **SC.912.E.7.7:** Identify, analyze, and relate the internal (Earth system) and external (astronomical) conditions that contribute to global climate change.

Remarks/Examples:
Explain the possible natural (e.g. increased global temperature, wildfires, volcanic dust) and anthropogenic mechanisms (e.g. air pollution, acid rain, greenhouse gases, burning of fossil fuels) and the effects of these mechanisms on global climate change.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Hands-On Lab: Using Climate Models to Forecast Impacts of Climate Change Project: Modeling the Effects of Climate Change Explore > p 2 > What Processes Are Involved in Climate Change?

21. **SC.912.E.7.8:** Explain how various atmospheric, oceanic, and hydrologic conditions in Florida have influenced and can influence human behavior, both individually and collectively.

Remarks/Examples:
Describe and discuss the conditions that bring about floods, droughts, wildfires, thunderstorms, hurricanes, rip currents, and tsunamis and how these conditions can influence human behavior (e.g. energy alternatives, conservation, migration, storm preparedness).

○ VERY GOOD ALIGNMENT ○ GOOD ALIGNMENT ◉ **FAIR ALIGNMENT** ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Elaborate with STEM > STEM in Action: Applying Understanding Weather

22. **SC.912.L.15.1:** Explain how the scientific theory of evolution is supported by the fossil record, comparative anatomy, comparative embryology, biogeography, molecular biology, and observed evolutionary change.

Remarks/Examples:
Annually Assessed on Biology EOC. Also assesses SC.912.L.15.10 SC.912.N.1.3 SC.912.N.1.4 SC.912.N.1.6 SC.912.N.2.1 SC.912.N.3.1 and SC.912.N.3.4.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Explore > p 1 > What can the fossil record tell us about the history of life on Earth? Explore > p 1 > Assignment: Transitional Species
Explore > Explore More Resources > Reading Passage: Charles Darwin Speaks Out

23. **SC.912.L.15.8:** Describe the scientific explanations of the origin of life on Earth.

Remarks/Examples:
Annually assessed on Biology EOC. Also assesses SC.912.N.1.3, SC.912.N.1.4, and SC.912.N.2.1.

○ VERY GOOD ALIGNMENT ◉ **GOOD ALIGNMENT** ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Explore > p 1 > How does the fossil record help to explain Earth's history? Explore > Explore More Resources > Reading Passage: An Explosion of Life

24. **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:
Hands-On Lab: Using Climate Models to Forecast Impacts of Climate Change Hands-On Activity: Monitoring Solar Activity> Hands-On Lab: Salinity, Density, and Temperature in Water

25. **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:
Hands-On Lab: Using Climate Models to Forecast Impacts of Climate Change Project: Deepwater Horizon Update

26. **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:
Explore More Resources > Reading Passage: Darwin and Wallace

27. **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:
Explore > Explore More Resources > Reading Passage: Charles Darwin Speaks Out Explore More Resources > Reading Passage: The Plate T The History of Life on Earth > Explore > p 1 > Assignment: Transitional Speciesectonics Argument

28. **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:
Explore > p 1 > Reading Passage: Astronomical Leaps Explore > Explore More Resources > Reading Passage: The Plate Tectonics Argument The History of Life on Earth > Explore > Explore More Resources > Reading Passage: Charles Darwin Speaks Out

29. **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:
Explore > p 1 > Reading Passage: Astronomical Leaps Explore > Explore More Resources > Reading Passage: An Explosion of Life

30. **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:
Explore More Resources > Hands-On Activity: Explaining the Big Bang Reading Passage: The Plate Tectonics Argument

31. **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:
Explore > Explore More Resources > Hands-On Lab: The Scale of Our Solar System Reading Passage: Global Climate Models Hands-On Lab: Modeling the Carbon Cycle

32. **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:
Reading Passage: Public Understanding of the Ozone Hole and Climate Change

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:
Explore > p 1 > Thermal Energy Movement Explore > p 1 > Assignment: Role of Heat Transfer in Wind and Ocean Currents

34. **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:
Understanding the Universe > Explore > Explore More Resources

35. **SC.912.P.10.11:** Explain and compare nuclear reactions (radioactive decay, fission and fusion), the energy changes associated with them and their associated safety issues.

Remarks/Examples:
Identify the three main types of radioactive decay (alpha, beta, and gamma) and compare their properties (composition, mass, charge, and penetrating power). Explain the concept of half-life for an isotope (e.g. C-14 is used to determine the age of objects) and calculate the amount of a radioactive substance remaining after an integral number of half-lives have passed. Recognize that the energy release per gram of material is much larger in nuclear fusion or fission reactions than in chemical reactions due to the large amount of energy related to small amounts of mass by equation E=mc^2.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Explore > p 4 > Nuclear Energy Explore More Resources > Exploration: Absolute Dating Stars and Galaxies > Explore > p 1 > What Are Stars?

36. **SC.912.P.10.16:** Explain the relationship between moving charges and magnetic fields, as well as changing magnetic fields and electric fields, and their application to modern technologies.

Remarks/Examples:
Explain that moving electric charges produce magnetic forces and moving magnets produce electric forces. Recognize the Lorentz force is the force on a point charge due to electromagnetic fields and occurs in many devices, including mass spectrometers.

○ VERY GOOD ALIGNMENT ○ GOOD ALIGNMENT ◉ **FAIR ALIGNMENT** ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Reading Passage: Earth's Magnetic Field

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:
Exploration: Technology and the Electromagnetic Spectrum Hands-On Lab: Modeling the Electromagnetic Spectrum Hands-On Lab: Spectral Analysis STEM Project Starters page 2 > Project: Wavelength and Frequency

38. **SC.912.P.10.19:** Explain that all objects emit and absorb electromagnetic radiation and distinguish between objects that are blackbody radiators and those that are not.

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

Justification:
Explore > p 1 > What Are the Different Kinds of Electromagnetic Radiation?

39. **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:
Explore > Explore More Resources > Exploration: Technology and the Electromagnetic Spectrum Reading Passage: Prisms in the Sky Explore > p 4 > How do seismic waves provide evidence for Earth's interior structure?> Explore > p 2 > What Technologies Allow Scientists to Observe the Different Kinds of Electromagnetic Radiation from Space? Hands-On Activity: Model Seismic Waves

40. **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:
STEM Project Starters page 2 > Project: Applying Kepler's Laws

41. **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:
Movements in Space > Explore > p 1 > Law of Gravitation Explore More Resources > Activity: Law of Gravity

42. **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:
STEM Project Starters page 2 > Project: Wavelength and Frequency STEM in Action: Applying Understanding Climate Reading Passage: Developing the Telescope

43. **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:
Reading Passage: The Plate Tectonics Argument eading Passage: Public Understanding of the Ozone Hole and Climate Change

44. **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:
Hands-On Activity: Feedback Effects on Earth's Surface Features Hands-On Lab: The Scale of Our Solar System Hands-On Lab: Salinity, Density, and Temperature in Water

45. **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:
Reading Passage: Public Understanding of the Ozone Hole and Climate Change Explore > p 2 > Reading Passage: Feedback Effects on Climate Reading Passage: Developing the Telescope

46. **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:
Explore > p 2 > Reading Passage: Feedback Effects on Climate Reading Passage: Climate Implications of Peat Bogs

47. **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:
STEM in Action: Applying Measuring Distances in Space > Reading Passage: Hubble's Law

48. **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:
Hands-On Lab: Using Climate Models to Forecast Impacts of Climate Change> STEM Project Starters page 2 > Project: Wavelength and Frequency

49. **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:
Hands-On Activity: CostBenefit Analysis of Fossil Fuels Reading Passage: Public Understanding of the Ozone Hole and Climate Change

50. **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:
Project Starters page 1 > Project: Keeping Current

51. **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:
Reading Passage: Public Understanding of the Ozone Hole and Climate Change Explore More Resources > Reading Passage: An Explosion of Life Reading Passage: The Plate Tectonics Argument

52. **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:
Project: Tracking Greenhouse Gas Emissions STEM Project: Fracking and Earthquakes STEM Project: Fracking and Earthquakes STEM Project: Fracking and Earthquakes STEM Project: Fracking and Earthquakes

53. **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:
Hands-On Lab: Using Climate Models to Forecast Impacts of Climate Change Hands-On Activity: CostBenefit Analysis of Fossil Fuels Hands-On Lab: A CrossSection of the Ocean Floor

54. **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:
Reading Passage: Public Understanding of the Ozone Hole and Climate Change

55. **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:
STEM Project Starters page 2 > Project: Journey to Another Planet STEM Project Starters page 2 > Project: Saving Buildings STEM Project Starters page 1 > Project: Keeping Current

56. **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:
STEM Project Starters page 1 > Project: Modeling the Effects of Climate Change STEM Project Starters page 1 > Project: Keeping Current STEM Project Starters page 2 > Project: Journey to Another Planet

57. **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:
More than 5 activities cover this standard

58. **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:
More than 5 activities cover this standard

59. **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:
Project: Deepwater Horizon Update> STEM Project Starters page 2 > Project: Saving Buildings Project: Evaluate Underwater Funding

60. **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:
Project: Deepwater Horizon Update Project: Evaluate Underwater Funding STEM Project Starters page 2 > Project: Saving Buildings

61. **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:
Hands-On Activity: Explaining the Big Bang

62. **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:
Hands-On Activity: Monitoring Solar Activity> Project: Keeping Current Hands-On Activity: Explaining the Big Bang

63. **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:
Project: Deepwater Horizon Update Hands-On Lab: Using Climate Models to Forecast Impacts of Climate Change

64. **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:
STEM Project Starters page 2 > Project: Journey to Another Planet Hands-On Lab: Using Climate Models to Forecast Impacts of Climate Change Explore > p 1 > Assignment: Transitional Species

65. **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:
> Project: Evaluate Underwater Funding Project: Tracking Greenhouse Gas Emissions Project: Deepwater Horizon Update

66. **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:
Explore More Resources > Hands-On Lab: A Matter of Measurement Explore > Core Interactive Text 1 > Activity: Law of Gravity

67. **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:
STEM in Action: Applying Understanding the Universe

68. **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:
English Language Proficiency Activity > Using Scientific Methods

69. **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:
English Language Proficiency Activity > Using Scientific Methods