Bid 3362

INSTRUCTIONAL MATERIALS ADMINISTRATOR

Recommendation

Yes

Comments: The Discovery Techbook Digital Media includes continuously updated comprehensive content that allow both teachers and students choices for learning. The Techbook meets standards, and has varied and broad breadth of the digital content. The 5E learning style approach used, is its strength for teaching the scientific method. There are multiple writing, reading, social media, collaboration, comprehension, assessment tools and options built into the course allowing for engagement, differentiation and, evaluation of students. Quantitative summative assessments linked to standards allow real-time teacher, detailed assessment of student learning. This Biology Discovery Techbook Digital Media covers the topic at the correct level and is a very effective tool. I highly recommend this for adoption.

Material for Review

Course: Biology 1 (2000310)
Title: Discovery Education Science Techbook (Florida) - Biology 1 , 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

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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- Justification and Comments are strongly encouraged for each rating. Please use the Justification/Comments section to list any strengths, weaknesses, concerns, issues, and/or to provide examples supporting the rating. Your comments maybe used by publishers to help them improve their products
- 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:
See 2016-2017 STATE OF FLORIDA INSTRUCTIONAL MATERIALS ADOPTION STANDARDS ALIGNMENT COURSE STANDARDS/BENCHMARKS (Form IM7). The Techbook compared to Form IM7 was reviewed by the instructional reviewer and the textbook content aligns.

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 content is at the correct skill level. See ELD, Instructional Practice, Science and Engineering Practice Alignment form.

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:
The teacher has a choice to use Techbook content, model lessons, Board Builder tools, Discovery Education (teacher) or Student Networks, modify or build their own lessons. The variety of content and tools along with teacher notes explaining content, a provided materials list, options for bothe formative and summative assessments, both teacher and student views by the teacher make the Techbook course very adaptable and useful for classroom as well as online anytime instruction. Presentation of materials can be made online with Builder Board or projected onto a whiteboard for classroom instruction.

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:
The core unit material - written and videos, the Glossary with varied media, the Unit video supplements and the additional teacher Discovery Education Network and Discovery Student Network, The What's New teacher material to add to lessons, the multiple videos available for student assignments all give students details to understand the significance of topics and events. The teacher is given new and varied content in the What's New content section in the teacher view that can be added, that contain significant topics and events.

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:
Review of 2016-2017 STATE OF FLORIDA INSTRUCTIONAL MATERIALS ADOPTION STANDARDS ALIGNMENT COURSE STANDARDS/BENCHMARKS (Form IM7) was performed. The level of difficulty of the treatment of content matches the standards. For Example: Hands-On Lab: Plant Reproduction meets ELD.K12.ELL.SI.1.

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:
The level of complexity matches..., for example the level of mathematical ability matches students in the Ecology: Describing Populations were the student past knowledge and skills are used to: Analyze population demographics, including size, density, and distribution. Differentiate between density-dependent and density-independent factors. Distinguish between exponential and logistic growth. Identify patterns related to mathematical representations of the carrying capacity, K, of a population. Construct an age structure diagram for a population. Distinguish among type I, II, and III survivorship curves.

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:
The content level has been designed for both Block and Non-Block Schedules. Review of the content along with the anytime access on any device allow students to complete work in and outside of class. Collaboration tools allow students to work together as needed and defined by the teacher.

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:
Primary and Secondary sources in the Techbook Unit concepts are from expert sources, For Example for Primary Source : The National Science Foundation, Science Nation Disappearing Frogs. Recommend the Techbook add a link to "ask a Librarian" and library resources provided on the topic by the schools librarian, and teach by providing a directed search to develop students abilities on search strategies using validated scientific journal databases, not just ones in Techbook textbook provided by the author. The would expand student learning to experts in the scientific field.

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:
Using various valid sources such as the Science Channel, The Discovery Channel, The National Science Foundation and others contribute to the quality of the content in the materials. Citations are given for all content.

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:
The content is presented accurately. Only 1 error found. Misspelled science in one assignment.

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:
Strengths. Teacher have the option to have students select from various presenters in the Primary supplemental videos and in assignments section. The (Material should be free of bias and contradictions and is noninflammatory in nature) as reviewed.

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:
Yes, the content of the material is updated. The Techbook electronic content is continuously updated by the author and publisher. The ..."prevailing theories, concepts, standards, and models used with the subject area." recurrent and relevant.

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:
Correct. Factually accurate content with no mistakes or inconsistencies seen.

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 up to date using constructivist 5E learning strategy shown to teach the scientific method as done by professionals and is a learning method that encourages free thinking to formulate hypotheses based on observation, etc -5E. The Techbook meets standards of practice in using both formative and summative assessments. It is current using peer-based learning with social media and collaboration Builder Section. The tech book is build towards student-centered learning allowing students learning choices.

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:
Publisher provided content matched to learning objectives and standards, which are embedded in the Techbook at the beginning of each unit with a list of both, and throughout the content. They are appropriate and relevant.

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 Techbook content meets the requirements and is... "presented in an appropriate and relevant context for the intended learners. Meets UDL, differentiation requirements by providing various basic and augmented content. i.e. Videos in text of content of each unit and multiple choices of various videos in assignments.

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:
The content used is geared to connect students to real life science exploration and discovery. The content is directed at Florida students using content they can relate to.

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 interactive glossary is an example of not only definitions but explanations of interdisciniplary connections, as is the Student Discovery Education sections.

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:
Review of content portrays the above groups.

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:
The Techbook content meets all the above requirements. AN example of human animal treatment is in the unit - Diversity of Living Things, Thinking about Classifications, shows an image of lions with cubs. The self contained content provided by the authors and publishers allows lots of content that is written to the above requirements and limits teachers adding content that may not meet the above criteria.

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. See the publisher provided lists for both ELD, Instructional Practice, Science and Engineering Practice Alignment and 2016-2017 STATE OF FLORIDA INSTRUCTIONAL MATERIALS ADOPTION STANDARDS ALIGNMENT COURSE STANDARDS/BENCHMARKS (Form IM7)

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:
This is a digital text with updates of content by publisher. The What's New - News, the multiple selections given to the students in the Assignments and Lab sections as well as QR codes to direct students to digital content, free the teacher to focus on enhancing learning and differentiation, not searching for and adding content from outside sources, although the option to add outside web-based content is available in the Discovery Student Network, and in customizable assignments and social media section. The What's New and Discovery Student Network have content connecting the subject to real world applications and content of interest to students. The sections - Explore more Resources and Stem Starters are instructional materials that are a plus to student learning. Add-ins about content and ways to approach the topic to students - that appear in the teacher only view of the Techbook - frees the teacher from added prep time. The Explore more resources with multiple videos, and the Discovery Student Network provide many additional resources for student learning that the teacher does not have to find independently.

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:
The FLDOE Next Generation Sunshine State Standards appear at the beginning of each unit. The standards appear in dropdown and expanding each standard shows all the content in multiple chapters, units or topics- text, glossary, labs, where the standard appears or applies.

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:
The Techbook is consistently and logically organized for every unit. Use of the 5E learning model and building of student knowledge from the process of science and systems thinking - classification, to the concepts of small to large chemical, cellular, organs, organ systems - humans, ecology-ecosystems works. The What's New and Discovery Student Network have content connecting the subject to real world applications and content of interest to students Explore more Resources and Stem started are instructional materials that are a plus to student learning. The What's New and Discovery Student Network have content connecting the subject to real world applications and content of interest to students Explore more Resources and Stem started are instructional materials that are a plus to student learning.

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:
The Board Builder, Hands on Labs, Assignments (and 5E model thinking approach) require the student to write justifications for their answers. When student extract information by reading the text is highlighted in the text to voice listening mode and students may highlight the text while reading (UDL). The content videos are captioned. The materials are available in Spanish. The Builder Board enables students to build project, assignment and lab reports presentation collaborating with other students in real-time, encouraging the students to not only see and hear but to engage in creation that demonstrate learning from reading or listening. All of this frees the teacher to monitor and help students during the learning process according to their abilities.

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 base content allows pacing for 50-60 minute lessons and longer block schedule. The any device, any time access allows students more time to learn besides in the classroom. The social media access allows the student to communicate with peers and the teachers to ask questions. The students ability to select two or multiple content videos assignment or lab content, alone with self-paced reading of the text with a glossary ensures students understanding of material in a way they chose to perceive it. The teacher, student online interactions allow the students, teachers and parents feedback on what is learned or what is not learned in the allotted time.

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:
Accessibility meets UDL requirements. For example, standard toolbars,page design, text captioned video, text to voice, to list some of the required UDL tools incorporated into this course.

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 content presentation is easy to view and navigate. The presentation meets science content standards and UDL requirements. The content is well integrated in each unit using various media and communication tools as well as through the entire text. The font size, colors, type style, spacing as well background colors make perceiving the content easy. Some of the math formulas are small but there is a zoom in button feature to enlarge the text.

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:
The text in Techbook is interlaced with a variety of tasks with video in the Glossary, Discover Education Network Student section, Assignments, Labs. Board Builder - student social media collaboration are features that maintain learner motivation.

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:
Based on the Sunshine State Science Standards, each unit starts with a list of Overarching (Big Idea), Focus and Lesson questions. The Techbook core content is centered around answering the questioning the scientific method (5E strategy) throughout and in the Labs.

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:
The Sunshine State Science Standards are listed at the beginning of each unit. Each unit starts with a list of Overarching (Big Idea), Focus and Lesson questions.The 5E Learning with stem contains additional questions helping students relate real world activities, Biology content to outcomes in content knowledge, the use of the scientific method, and Evaluation criteria - Rubrics are shown. Assessments are aligned with State Standards. Teacher notes help teachers amplify ideas that should be taught.

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:
The text is interlaced with "Explain Question" sections. The students have choices to view additional content in the text, assignment and lab sections.The My Notebook and My Content sections allow students to restate content, ideas, relationships to the activities in the world. The 5E format specifically the Explain Section further asks the students explain what they have learned independently. All "Hands on Activities" have safety precautions at the beginning of the instructions.

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:
The teacher has access to all of the sections on the electronic Techbook, so he or she may review/monitor, comment and guide the learner. Starting with core content, having students choose at east two assignments, but allowing students to choose assignments - two or more out of several, having a selection of videos in the tex and Discovery Learning video-text captioning, and in Spanish and English supplements allow students to self select learning styles and provide differentiation. The social media - Builder Board allow students to engage in complementary styles and learn from peers at different levels. The text reading and assigned writing tasks are incorporated throughout.

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:
Each section has Hands on Activities in the Explore section - physical and mental skills of observing, drawing, math, writing. The Explain section. The Hands on Labs have students develop physical skills such as measuring, developing dexterity, doing activities in the real world away from computers and phones, as well as mental skills. The My Notebook, My Content, Builder Board, Written Labs and Assessments engage students in mental activity.

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:
The Techbook is organized based on the 5Es. The progression through the 5Es organizes the students journey through the content based on the scientific method and principles of learning. The Reading with videos and the "Explain Question" section, the Labs, the supplemental videos and Discovery Education Network videos are all organized which are all linked to unit concepts, goals and objectives.

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:
The 5E strategy used in the teaching material is constructive approach to learning. Having students extra content from written text, videos - requiring them to take notes in My Notebook and organize evidence from content in My Content and in Builder Board presentations are great strategies for teaching targeted LO and curriculum requirements.

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

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

Justification:
The 5E approach or strategy is effective to achieve targeted outcomes. Hands on Activities and Hands on Labs have students apply the 5E strategy, learned content and make the demonstrate math and physical skills needed to be a scientist.

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:
The assessment strategies are linked to Sunshine Science Standards. The teacher has the ability to have data and statistics showing connections of course content, student deliverables correlated to both the learning outcomes and state standards.

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:
The ability to observe and review students work in real time using - My Notebook, My Content, Builder Board, Assignments, Labs, Hands on Activities allows ongoing assessment of students performance, in addition to summative assessments. The teacher has the ability to have data and statistics showing connections of course content, student deliverables correlated to both the targeted learning outcomes and state standards.The teacher can use the following Create Practice Assessment, Create Standards-Based Assessment, Create Concept-Based Assessment in builder tools.

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:
UDL is integrated in the course Techbook.

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:
Units contain the appropriate mathematical practices as needed. The Ecology Unit and Sub Units contains multiple Hands on Activities and Assignments incorporating the teaching and demonstrating of math skills by the student. For Example: Analyze population demographics, including size, density, and distribution. Differentiate between density-dependent and density-independent factors. Distinguish between exponential and logistic growth. Identify patterns related to mathematical representations of the carrying capacity, K, of a population. Construct an age structure diagram for a population. Distinguish among type I, II, and III survivorship curves.

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:
The 5E strategy, the Techbook content, learning activities, and assessments, using UDL, allow student differentiation and accommodate different learning styles. The content correlates with state standards and learning outcomes. All activities allow learning in a safe environment. The teacher can assess learning real time by observing work in progress and evaluating data analytics relate to standards and outcomes of assessments.

Standards

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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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.

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.

- Reviewers are instructed that submissions should be consistently rated as 5 or 4 to be recommended for adoption. Materials that are consistently rated 2 or 1 are not expected to be recommended for adoption.
- Justification and Comments are strongly encouraged for each rating. Please use the Justification/Comments section to list any strengths, weaknesses, concerns, issues, and/or to provide examples supporting the rating. Your comments maybe used by publishers to help them improve their products
- 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.

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:
Techbook example. Ecology Unit: Focus Questions, "How do organisms interact with the living and nonliving environments to obtain matter and energy?" and "The carrying capacity (K) of a habitat is the largest population size that can be supported in an ecosystem over a period of time. Many factors, including water, light, nutrients, and space, influence an ecosystem's carrying capacity." Also, Techbook content have students learn and build on knowledge of photosynthesis in the Energy and Life unit.

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

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

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

Justification:
Content meets this standard. Example https://app.discoveryeducation.com/player/view/assetguid/b8de8f45-808d-4f47-aaa8-22be6b04a3ef is in the Cell Structure and Function Unit, E5E, Explore section, Cell Theory.

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

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

Justification:
Meets requirements. See Unit on Cell Process, Cell Transport.

4. **SC.912.L.14.3:** Compare and contrast the general structures of plant and animal cells. Compare and contrast the general structures of prokaryotic and eukaryotic cells.

Remarks/Examples:
Annually Assessed on Biology EOC. Also assesses SC.912.L.14.2.

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

Justification:
Meets requirements. Distinguish between prokaryotic and eukaryotic cells in the Unit on Cell Structure and Function.

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

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

Justification:
Hands on Lab, Uses Microscope, Various videos may be assigned by teachers on Compound Microscope use in examining plant and animal tissues. Describes magnifying glasses, The Stereomicroscope Video Segment01:49 and electron microscopes. These were easily found by using the search tool and can be added to the lessons by the teacher.

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

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

Justification:
The Reproduction and Heredity, Diversity of living Things, especially the Virus Unit and the following video cover the standards of content and DOK levels or content complexity. Again using the 5E learning strategy and depth of content materials provided meet the complexity requirements.Example: VIDEO SEGMENT, Pathogenic Microbes, Duration 04:20, Showcases pathogenic microbes that cause typhoid, cholera, pneumonia, and other illnesses, and teaches that some microbes can be helpful to human health.

7. **SC.912.L.14.7:** Relate the structure of each of the major plant organs and tissues to physiological processes.

Remarks/Examples:
Annually Assessed on Biology EOC.

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

Justification:
Meet requirements. See Units Energy and Life and Plant Growth and Development.

8. **SC.912.L.14.26:** Identify the major parts of the brain on diagrams or models.

Remarks/Examples:
Annually Assessed on Biology EOC.
Florida Standards Connections: MAFS.K12.MP.4: Model with mathematics.

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

Justification:
Teaching Option, one of many VIDEO SEGMENTs In Techbook main unit Nervous System presents a video. Brain video: Provides information about the control center of the body: the brain. The segment details each section of the brain, revealing how each part contains a significant role in controlling the body. Additional video relates function. Brain, Duration 03:25 Provides information about the control center of the body: the brain. The segment details each section of the brain, revealing how each part contains a significant role in.. Followed by Model with Mathematics. Assignment Option Project Ideas:With Math. Research statistics related to drug addiction in your local community. You may focus on just one drug or age group. First predict how the statistical data might change over time and then conduct additional research to: find trends in data suggest reasons for trends or non-trends in data analyze results and formulate conclusions support or refute your prediction design methods to reduce drug addiction numbers in within your researched community

9. **SC.912.L.14.36:** Describe the factors affecting blood flow through the cardiovascular system.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Cardiovascular System unit: 5E Explore Section, Text with glossary links, "The heart is typically the size of a fist and beats approximately 100,000 times each day, pumping 5–6 quarts of blood each minute and about 2,000 gallons a day. While beating, it pumps blood through a system of elastic, muscular tubes called blood vessels, which comprise the circulatory system." DOK recall, as well as 5E explain section students asked to diagram, explain cardiovascular system and factors effecting blood flow. 5E Stem in action explains factors in blood flow related to exercise and diet. Stem in Action section. See Stem Project Starters video "Heart as a Pump", DOK skills and DOK High Level Reasoning, Stem Project section assignment Heart as a Pump "This may be a good activity to use as a small group project since it combines research skills, data collection, and math calculations to reach the final conclusion."

10. **SC.912.L.14.52:** Explain the basic functions of the human immune system, including specific and nonspecific immune response, vaccines, and antibiotics.

Remarks/Examples:
Annually Assessed on Biology EOC. Also assesses SC.912.L.14.6 HE.912.C.1.7 and HE.912.C.1.5.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meets standards: Explore, Explain 3 topics, and Elaborate with Stem sections of this unit cover the standards content and all DOK levels.

11. **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:
Meets standards. Great on everything in standard. i.e. Developmental Homologies Relate to the Evolutionary History of an Organism? Presents how similarities in the structures of differing animal classes and species point to a shared ancestor. This video is presented in content.

12. **SC.912.L.15.4:** Describe how and why organisms are hierarchically classified and based on evolutionary relationships.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meets Standards.

13. **SC.912.L.15.5:** Explain the reasons for changes in how organisms are classified.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
SC.912.L.15.5 - Explain the reasons for changes in how organisms are classified. (Cognitive Complexity/Depth of Knowledge Rating: High) Assignment:EXPLAIN Assignment Question: Modern taxonomy reflects the tree of life. Write a secientific explanation that either supports or refutes this argument. Directions: Recall the three main sections to a scientific explanation: claim, evidence, and reasoning. VIDEO Supplement for this assignment. Science in Progress: Why Do Scientists Classify Organisms? Full Video05:34: Determines how scientists use taxonomy to classify organisms, and introduces such key terms as domain, kingdom, phylum, class, order, family, genus, and species. The program also looks at how classification can be used to observe evolutionary patterns and interactions.

14. **SC.912.L.15.6:** Discuss distinguishing characteristics of the domains and kingdoms of living organisms.

Remarks/Examples:
Annually Assessed on Biology EOC. Also assesses SC.912.L.15.4 SC.912.L.15.5 SC.912.N.1.3 and SC.912.N.1.6.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meets Standards. Example Video Assignment option. VIDEO Supplement for this assignment. Science in Progress: Why Do Scientists Classify Organisms? Full Video05:34: Determines how scientists use taxonomy to classify organisms, and introduces such key terms as domain, kingdom, phylum, class, order, family, genus, and species. The program also looks at how classification can be used to observe evolutionary patterns and interactions.

15. **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:
Meets Standards. Multiple explanations in Unit: Diversity of Living Things: History of Life : 5E, Explain: "What Are Different Scientific Explanations for How and When Life on Earth Evolved?" Content; Elaborate with Stem. Current evidence of types of life. Stem in Action, Geothermal Vents, etc. . Explain 5E section and Assignments, Stem Projects reach high DOK level.

16. **SC.912.L.15.10:** Identify basic trends in hominid evolution from early ancestors six million years ago to modern humans, including brain size, jaw size, language, and manufacture of tools.

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

Justification:
Meets Standards. VIDEO SEGMENT. New Chapter in Hominid Evolution Duration 03:02. "Ardi's" groundbreaking discovery not only advances paleoanthropological research but also serves as a reminder that modern humans evolved as part of the...

17. **SC.912.L.15.13:** Describe the conditions required for natural selection, including: overproduction of offspring, inherited variation, and the struggle to survive, which result in differential reproductive success.

Remarks/Examples:

Annually assessed on Biology EOC. Also assesses SC.912.L.15.14, SC.912.L.15.15, and SC.912.N.1.3.

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

Justification:
Meets standards. See Diversity of Living Things; Evolutions; Explore has several sections detailing the above standard. Elaborate with Stem has Stem in action asking students to use bacteria adaptation to antibiotics and to explain in content knowledge in a project.

18. **SC.912.L.15.14:** Discuss mechanisms of evolutionary change other than natural selection such as genetic drift and gene flow.

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

Justification:
Meets standards.Glassary definitions, Multiple Instructional Videos, i.e VIDEO SEGMENT Evolution in Action: Genetic Drift, Duration 03:19 Explains genetic drift, a factor that influences evolution. Genetic drift causes a change in allele frequency, but unlike natural selection, it occurs due to random chance. There...AND VIDEO SEGMENT Evolution in Action: Gene Flow Duration 01:28 Cites gene flow as another factor that influences evolution. Gene flow occurs when individuals from separate, isolated populations exchange genetic information. Assignments can be built around these videos to reach HIG DOK level.

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

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

Justification:
Meets standard. VIDEO SEGMENT. Evolution in Action. Duration 05:23 Discusses the effects of evolution, including speciation, or the emergence of a new species. Genetic variation and mutations ensure diversity in a gene pool and enable... 5E Explore# 9, Evolution Unit. Hardy-Weinberg Equation, exposes students to Math and the theory, from Techbook, "As studies have shown, evolution is illustrated by changes in a population's gene pool over time. The Hardy-Weinberg equilibrium is a principle that can be used as a baseline against which changes in allele frequencies among a population can be measured. The principle states that, in the absence of disturbing factors, different genotype frequencies in a population will reach an equilibrium and will remain stable over generations. However, the Hardy-Weinberg equilibrium also states that evolution should be expected in all populations virtually all of the time"

20. **SC.912.L.16.1:** Use Mendel's laws of segregation and independent assortment to analyze patterns of inheritance.

Remarks/Examples:

Annually assessed on Biology EOC. Also assesses SC.912.L.16.2.

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

Justification:
Meets standards. i.e. Chapter on Reproduction and Heredity, Genetics Unit covers all content knowledge required by standards on Mendelian Laws and Genetics Theory. VIDEO SEGMENT, Mendel's Laws, Duration 00:37 Highlights Mendel's law of segregation and the law of independent assortment. The law of segregation states that each of the two alleles from a parent is transmitted...

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

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

Justification:
Meets standards. i.e. Chapter on Reproduction and Heredity, Genetics Unit covers all content knowledge required by standards on Mendelian Laws and Genetics Theory.

22. **SC.912.L.16.3:** Describe the basic process of DNA replication and how it relates to the transmission and conservation of the genetic information.

Remarks/Examples:
Integrate HE.912.C.1.7. Analyze how heredity and family history can impact personal health. Annually assessed on Biology EOC. Also assesses SC.912.L.16.4 SC.912.L.16.5 SC.912.L.16.9.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meets standards. i.e. Chapter on Reproduction and Heredity, Unit, Transcription and Translation.

23. **SC.912.L.16.4:** Explain how mutations in the DNA sequence may or may not result in phenotypic change. Explain how mutations in gametes may result in phenotypic changes in offspring.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meets standards. i.e. Chapter on Reproduction and Heredity, Unit, Transcription and Translation. How Do Cells Control Gene Expression? What Are the Causes, Types, and Effects of Mutations? VIDEO SEGMENT DNA Mutations Duration 06:02 Focuses on mutations that can occur in DNA, which take place when an issue occurs with a nucleotide. Missense and nonsense mutations occur when one nucleotide is...

24. **SC.912.L.16.5:** Explain the basic processes of transcription and translation, and how they result in the expression of genes.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meets standards. i.e. Chapter on Reproduction and Heredity, Unit, Transcription and Translation. How Do Cells Control Gene Expression? Builds on knowledge of previous unit on reproduction.

25. **SC.912.L.16.8:** Explain the relationship between mutation, cell cycle, and uncontrolled cell growth potentially resulting in cancer.

Remarks/Examples:
Integrate HE.912.C.1.7. Analyze how heredity and family history can impact personal health.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meets Standards. Building on SChapter Cell Processes and Cell Division Unit students learn using this video. FULL VIDEO Science in Progress: Cancer Cells Duration 03:03 Explores the cell mutations that give rise to cancer. The program also covers types of tumors, cancer treatments, and the causes of cancer. See Explore Section 5E in this Unit.

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

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meets standards. See What Are the Differences between Prokaryotic and Eukaryotic Cells? in Cell Structure and Function

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

Remarks/Examples:
Annually assessed on Biology EOC.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meet standards. See supplemental videos and Human Body Systems and Homeostasis, 5E Elaborate in Stem section.

28. **SC.912.L.16.13:** Describe the basic anatomy and physiology of the human reproductive system. Describe the process of human development from fertilization to birth and major changes that occur in each trimester of pregnancy.

Remarks/Examples:
Annually assessed on Biology EOC.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meets standards. See Human Body Systems and Homeostasis, Unit Reproduction and Birth. Topic: What are the processes of pregnancy and birth?

29. **SC.912.L.16.14:** Describe the cell cycle, including the process of mitosis. Explain the role of mitosis in the formation of new cells and its importance in maintaining chromosome number during asexual reproduction.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meets standard. Reproduction and Heredity, Asexual and Sexual Reproduction

30. **SC.912.L.16.16:** Describe the process of meiosis, including independent assortment and crossing over. Explain how reduction division results in the formation of haploid gametes or spores.

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

Justification:
Meets standard. Reproduction and Heredity, Asexual and Sexual Reproduction

31. **SC.912.L.16.17:** Compare and contrast mitosis and meiosis and relate to the processes of sexual and asexual reproduction and their consequences for genetic variation.

Remarks/Examples:
Annually assessed on Biology EOC. Also assesses SC.912.L.16.8 SC.912.L.16.14 SC.912.L.16.16.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meets standard. Reproduction and Heredity, Asexual and Sexual Reproduction

32. **SC.912.L.17.2:** Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meet standards. See Ecology, Aquatic Biomes, Elaborate with Stem section 5E. Stem project starters 1. Meet DOK levels.

33. **SC.912.L.17.4:** Describe changes in ecosystems resulting from seasonal variations, climate change and succession.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meet standards. See Ecology Chapter. Ecosystems.

34. **SC.912.L.17.5:** Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity.

Remarks/Examples:
Annually assessed on Biology EOC. Also assesses SC.912.L.17.2 SC.912.L.17.4 SC.912.L.17.8 SC.912.N.1.4.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meet standards. See Ecology Chapter. Ecosystems. See Glossary and VIDEO SEGMENT Carrying Capacity, Duration 01:36 Carrying capacity is the largest number of individuals an ecosystem can support. Changes in a population can be predicted using age pyramids and three types of..."

35. **SC.912.L.17.8:** Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meet Standards. See Ecology, Describing Populations. CORE INTERACTIVE TEXT What Are Biological Diversity, Episodic Speciation, and Mass Extinction?What Are... What Are Biological Diversity, Episodic Speciation, and Mass Extinction? Biological Diversity In simple terms, biological diversity, or biodiversity, can be thought of as...

36. **SC.912.L.17.9:** Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels.

Remarks/Examples:
Annually assessed on Biology EOC. Also assesses SC.912.E.7.1.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meet standards. VIDEO SEGMENT Interaction Review Duration 00:47 Ecologists can classify organisms in an ecosystem according to how they get their food. The role of producers, consumers, and decomposers is reviewed. Food chains... ACTIVITY Hands-On Activity: Food Webs and Trophic Levels Students will be assigned an organism within an ecosystem and organize themselves into trophic levels. Students will then use yarn to model the energy connections within the.. CORE INTERACTIVE TEXT Food Chains and Food Webs Food Chains and Food Webs A food chain is a straight-line representation showing the directional flow of energy from one organism to another organism in an ecosystem. Food.

37. **SC.912.L.17.11:** Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meet standards. VIDEO SEGMENT, Natural Resources, Duration 04:00 Natural resources are elements from the earth that can be developed and used by humans in their economic production. CORE INTERACTIVE TEXT What Are Natural Resources and How Do We Use Them? What Are Natural Resources and How Do We Use Them? Nonrenewable Resources Teacher Note: Practices Throughout this concept, students learn of the various..

38. **SC.912.L.17.13:** Discuss the need for adequate monitoring of environmental parameters when making policy decisions.

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

Justification:
MeetsStandards. FULL VIDEO, Today's Green Minute: Legal Oomph, Duration 01:57 Places green initiatives in the context of habit, bureaucracy, and red tape, and lists some of the accomplishments and goals of the Environmental Law & Policy Center (ELPC)... CORE INTERACTIVE TEXT What Are the Characteristics of a Population, a Community, and an Ecosystem? What Are the Characteristics of a Population, a Community, and an Ecosystem? Populations Teacher Note: Connections In this concept, students will understand the structure of...

39. **SC.912.L.17.20:** Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.

Remarks/Examples:

Annually assessed on Biology EOC. Also assesses SC.912.L.17.11, SC.912.L.17.13, SC.912.N.1.3.

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

Justification:
Meet standards. CORE INTERACTIVE TEXT, What Are the Characteristics of a Population, a Community, and an Ecosystem? What Are the Characteristics of a Population, a Community, and an Ecosystem? Populations Teacher Note: Connections In this concept, students will understand the structure of...

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

Remarks/Examples:

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

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

Justification:
Meet standards. The Chemistry of Living Things, The Chemistry of Life. 5E Explore#2, What Are the Characteristics of Carbohydrates, Lipids, Proteins, and Nucleic Acids?

41. **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:
Meet standards. Energy of Life, Photosynthesis, 5E Explore#2, How Does the Process of Photosynthesis Work?; Stem in Action, Apply Photosynthesis section.

42. **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:
Meet standards. Energy of Life, Cellular Respiration, Hands-On Lab: Aerobic vs. Anaerobic Respiration, 5E section Explore#2 What Are the Differences between Aerobic and Anaerobic Respiration?

43. **SC.912.L.18.9:** Explain the interrelated nature of photosynthesis and cellular respiration.

Remarks/Examples:

Annually assessed on Biology EOC. Also assesses SC.912.L.18.7 SC.912.L.18.8 SC.912.L.18.10.

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

Justification:
Meet standards. VIDEO SEGMENT Comparing Photosynthesis with Cellular Respiration Duration 01:58 Identifies the differences between photosynthesis and aerobic cellular respiration, revealing why these two essential processes are mutually dependent on one... CORE INTERACTIVE TEXT How Are Photosynthesis and Cellular Respiration Related? How Are Photosynthesis and Cellular Respiration Related? Teacher Note: Connections In this concept, students analyze the systems of photosynthesis and of cellular...

44. **SC.912.L.18.10:** Connect the role of adenosine triphosphate (ATP) to energy transfers within a cell.

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

Justification:
Meet standards. FULL VIDEO Cell Structure and Function Duration 50:48 Evaluates the structure of a human cell and describes the function of such processes as membrane transport, cellular respiration, and cellular metabolism. The program also... CORE INTERACTIVE TEXT Thinking about Cell Structure and Function Thinking about Cell Structure and Function A grizzly bear, like many other animals, prepares to hibernate in late fall. Unlike you and other humans, the bear will not eat or...

45. **SC.912.L.18.11:** Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, and their effect on enzyme activity.

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

Justification:
Meet standards. VIDEO SEGMENT, Enzymes, Duration 03:06 Defines the term enzyme and reveals how enzymes catalyze biological reactions. Chemistry of Living Things, Chemistry of Life, 5E Explore#3. What Are the Characteristics of Enzymes?

46. **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:
Meet standards. VIDEO SEGMENT, The Origins of Life on Earth, Duration 04:01 Four billion years ago, an improbable chain of coincidences leads to the formation of the first genetic material on Earth. BOARD Builder section: Origin of Life on Earth REVISED CCPS BIO EOC SC.912.L.15.8

47. **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:
Meets all the standards above. The Discovery Biology Techbook is designed and written to meet the above standards by using the 5E learning strategy. The student centered learning, UDL, written, assignments, 5E explain sections, Interactivity in reading diagrams, images, videos, interactive Glossary, surveys, hands on activities especially the Laboratories, the formative and summative assessments all contribute to the learning by students using this tool. The content is connected with the math in the Laboratories, graphing, calculating, especially a prime example of math is in the Diversity of Things unit, Use the Hardy-Weinberg equation to predict the frequency of genotypes in a population.

48. **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:
Meet standards. The first chapter is devoted to teaching and students learning the scientific methods including hypothesizing alternatives, accuracy and precision, etc. the 5E learning strategy is formulated on the process of the scientific method. The 5E Explore, Explain and Elaborate Stem have activities that along with the written note taking, the collecting evidence in the my content section as students read and video content, are critical to building critical process and thinking skills that allow students to complete the Hands on Laboratories and EXPLAIN the DATA - completing the scientific method in building there systems thinking and content knowledge in Biology. Teachers are given notes that help them guide students to consider and think about misconceptions.

49. **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:
Board Builder allows students to collaborate and question each other. The core and supplemental content provided is from validated sources. Upon using the search function the source and citation of the content is given. As to the strict standards of science the self contained expert content along with starting the students learning with the first chapter on the the scientific method, the 5E learning strategy as well as rigorous hands on Laboratory repeatedly requires the student to stick to the strict standards of the scientific investigation,

50. **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:
Meet standards. Units have Hands on Laboratories that require students to, "Collect data/evidence and use tables/graphs to draw conclusions and make inferences based on patterns or trends in the data."

51. **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:
Meet standard. The first unit Process of Science teaches the Scientific Method. Students are asked to make notes and collect evidence in My notes and My Content. Throughout students system thinking critical thinking makes use of learning content-facts gathering evidence to validate observations, forming hypotheses or alternative explanations, experimenting to find proof, and explaining the results. Therefor learning that "science is testable" Theory are established after replicating experiments. Alternative explanations that do not meet these state criteria are not valid explanations of the observed phenomena. READING PASSAGE What Is Science? Throughout human history, people have observed and explained the natural world. Prehistoric cave drawings represent the changing seasons. The stone circles at..

52. **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:
Meet standards. i.e. READING PASSAGE Phrenology: Science or Pseudoscience? Science uses strategic and careful observation and experiments to confirm or rebuff hypotheses. Science is based on patterns found in nature that are... AUDIO Distillations Podcast: Religious Experience Duration 11:27 Discusses the interplay of science and religion, including an ancient greek medical theory of pneuma, then examines the role of medical miracles in the Vatican's process of... VIDEO SEGMENT Tycho Brahe Duration 03:12 Discover the time when science, magic and religion were all melded together. READING PASSAGE What Is Science? Throughout human history, people have observed and explained the natural world. Prehistoric cave drawings represent the changing seasons. The stone circles at..

53. **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:
Meet standards. See Techbook Unit Process of Science, Using scientific Method, 5E Engage sections, partial quote from text, "The scientific method describes the logical process that people use to develop and test theories. It is limited to answering questions about the physical world; it cannot answer religious or ethical questions. The scientific method is evidence-based, requiring testing and observation. This type of evidence is called empirical evidence." "A central figure in this cultural shift was the English philosopher Francis Bacon (1561–1626). Bacon was the first to present scientific inquiry as a self-correcting cycle. A hypothesis is proposed, tested, and the results are then used to revise the hypothesis. It is this continual trial-and-error that pushes knowledge forward. This self-correcting method is the essence of science."

54. **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:
Meet standards. See Techbook Unit Process of Science, Using scientific Method, 5E, Explore#8 section, What Relationship Exists between Hypotheses, Theories, and Laws? Sections on Experimental Hypotheses, Theories and Laws are explained.

55. **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:
Meet standards. See Techbook Unit Process of Science, Using scientific Method, 5E, Explore#7 section. Specific evidence to support analysis of science and technical texts ... are given for all content with citations in the Techbook. MLA Headlines: Insomnia/Diabetes Link and Siemens Science Competition Science Channel, 2008. Video Segment Discovery Education. Web. 28/11/2017. http://www.discoveryeducation.com. APA Science Channel, 2008. Headlines: Insomnia/Diabetes Link and Siemens Science Competition. [Video Segment]. Available from http://www.discoveryeducation.com Chicago Manual of Style Science Channel. Headlines: Insomnia/Diabetes Link and Siemens Science Competition. Video Segment. 2008. http://www.discoveryeducation.com (accessed). Students are asked to cite evidence and copy Techbook content to back up their investigations using My Notebook and My Content and Board Builder.

56. **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:
Meet standards. See Techbook Unit Process of Science, Using scientific Method, 5E. Students are asked to cite evidence and copy Techbook content to back up their investigations using My Notebook and My Content and Board Builder.

57. **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:
Meet standards. See Techbook Unit Process of Science, Using scientific Method, 5E. Explain Sections and "Hands on Labs" use standard templates that provide the same structure - template for every Lab and guide students through the scientific method process. The teacher monitors the steps. Teachers notes provided aid teacher to guide students. Techbook content i.e.1. ANIMATION. measurement. In a chemical laboratory, scientists mixing reactants use precise measurements to obtain accurate results. measurement Animation. Discovery Education. Web. 28 November 2017. http://www.discoveryeducation.com. i.e.2. VIDEO SEGMENT Indirect Measurements Duration 08:58 Some measurements are relatively easily made directly, by counting or using a direct comparison with a standard measurement or measuring tool. Others are obtained...Indirect Measurements Discovery Education, 2007. Video Segment Discovery Education. Web. 28/11/2017. http://www.discoveryeducation.com.

58. **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:
Meet standards. See Glossary. Text in Techbook highlight key words linked to Glossary. Used in context to 9-12 grade level.

59. **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:
Meet standards. One example of Techbook content; Discovery Math, Advanced Measurements, https://app.discoveryeducation.com/learn/player/ce71bdd8-8149-4c29-996d-73d019857f7c. Student use of Interactive Glossary. Linking key word Nutrient in Interactive Glossary in Techbook text. Nutrient term in Interactive Glossary lists associated items chemistry to nutrients. Unit Plant Form and Function, Section - Thinking about Plant Structures, "Plants, like all organisms, are adapted to their environment in a wide variety of ways. The amount of sunlight, the availability of "nutrients" (Highlighted and Linked to Glossary) in the soil, and the types of herbivores present all play a role in shaping the form of plants in any given ecosystem."

60. **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:
Meet standards. The 5E, Explain section asked students to explain text concepts and scientific method. i.e. VIDEO SEGMENT Critically Analyze Experiment Results Duration 00:30 Data analysis helps scientists develop models that can be applied to other research questions. Communicating research and conclusions spreads knowledge among the scientific... , Critically Analyze Experiment Results Discovery Education, 2012. Video Segment Discovery Education. Web. 28/11/2017. http://www.discoveryeducation.com.

61. **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:
Meet standards. i.e. CORE INTERACTIVE TEXT Explaining Transcription and Translation Explaining Transcription and Translation Scientists construct explanations from observed patterns in the world. They look for how patterns are similar or different in a variety of...Unit Reproduction and Heredity, Transcription and Translation, 5E Explain section, students write answers to prompts.

62. **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:
Meet standards. 5E learning method, Explain section, Learning with STEM sections; Hands on Labs; Videos supporting text content.

63. **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:
Meet standards. Students use 5E learning method, Explain section, Learning with STEM sections; Hands on Labs; Videos supporting text content and explain science experiments. The use Word Builder to collaborate with students to explain work. Students keep My Content journal of Techbook content. They have gathered evidence to support or dispute Hands on Lab experimental findings.

64. **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:
Meet standards. Techbook Discovery Publisher proves list of ELD, Instructional Practice, Science and Engineering Practice Alignment, Level reading levels. Teachers assign written assignments to assess reading levels.

65. **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:
Meet standards. Students work through the 5E learning assignments in the Techbook. Social media tools, Word Builder, Learning with Stem, augmented by teacher guided classroom discussions all students to, "...with diverse partners on grades 9–10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively." The Techbook content is set for 180 school day pacing. Techbook includes, polling, graphic tools to meet the standards.

66. **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:
Meet standards. Meet UDL, Techbook provides videos, Boards, images, text, audio, interactive for all topics.

67. **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:
Meet standards. 5E Explain section, Core Text Content, videos are included in Techbook. i.e. BOARD Discovery Education Science Techbook Science Techbook uses an inquiry-based format built on the 5E model. Through hands-on labs, digital explorations, and an interactive glossary, as well as data analysis activities..., Core Text, "EXPLAIN QUESTION in Cell Structure and Function. What kind of structures must a cell have that would be analogous to a modern business?" STUDENTS EXPLAIN the above questions. i.e. VIDEO SEGMENT The Need for Sleep Duration 06:27 Considers the effects of sleep deprivation on a explorer attempting to fly a hot-air balloon over the North Pole. The Need for Sleep Discovery Channel, 2008. Video Segment Discovery Education. Web. 28/11/2017. http://www.discoveryeducation.com. Teacher notes in teacher mode of Techbook give explanations of misconceptions to explain to students.

68. **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:
Meet standards. Students use Board Builder to present work.

69. **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:
Meet standards. digital media is embedded in Techbook core content, Interactive Glossary and gives students and teachers choices of thousands of digital media to use in learning.

70. **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:
Meet standards. Using My Content to gather digital media content to support arguments, Hands on Labs to propose hypotheses, Use the 5E Explain, Using Assignments, Board Builder, Assessments, Elaboration with Stem projects students meet the standard. i.e. WRITING PROMPT Exploring the Cell Cycle and Cell Division Using the Exploration, Cell Division, you are going to investigate the questions "What is the cell cycle?" and "What are the differences between cell..., Counterclaims, i.e. READING PASSAGE The Scientific Method at the Store Part 2: Goods and Services Consumers in today's economy know what they want – but have many ways to get it. Some can be confused by claims and counterclaims of merchants, stores, and government...

71. **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:
Meet standards. Uses 5E learning strategy. Students us My Notes, 5E Explain, Hands on Lab written reports, Use Interactive Glossary, etc.

72. **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:
Meet standards. Techbook and teacher assignments provide multiple writing tasks. Level learning score and rubrics are used.

73. **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:
Meet standards. Board Builder is collaborative used by students and teachers to target audience for presentations and shared learning.

74. **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:
Meet standards. Board Builder is collaborative used by students and teachers to target audience for presentations and shared learning. Techbook uses digital media that can be linked to presentations.

75. **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:
Meet standards, The 5E course progression of Observing, Explaining, Elaborate with Stem projects, Hands on Labs, allow students to meet requirements.

76. **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:
Meet standards. digital media is embedded in Techbook core content, Interactive Glossary and gives students and teachers choices of thousands of digital media to use in learning.Search tool is provided in Techbook and each source had a linked copiable citation.

77. **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:
Meet standards, The 5E course progression of Observing, Explaining, Elaborate with Stem projects, Hands on Labs, allow students to meet requirements.

78. **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:
In Techbook text reading content has Explain questions for short written responses, the 5E tabs have the Explain sections for medium written responses as well as Assignments, Elaborate with Stem, Hands on Labs and Board Builder are longer written tasks.

79. **HE.912.C.1.3:** Evaluate how environment and personal health are interrelated.

Remarks/Examples:
Food options within a community; prenatal-care services; availability of recreational facilities; air quality; weather-safety awareness; and weather, air, and water conditions.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meet standard. Students learn using digital media i.e. SKILL BUILDER Groundwater Reviews the Earth's sources of groundwater and explains how populations access groundwater by drilling wells. Also mentions the problem of groundwater depletion. i.e. FULL VIDEO Doomsday Seed Bank Welcomes New Addition Duration 00:46 Some 20,000 new seed samples were added to the collection held by the Svalbard Global Seed Vault in Norway. The new additions included Japanese barley, Brazilian beans, wild..., Doomsday Seed Bank Welcomes New Addition Next Animation Studio, 2014. Full Video Discovery Education. Web. 28/11/2017. http://www.discoveryeducation.com.

80. **HE.912.C.1.5:** Analyze strategies for prevention, detection, and treatment of communicable and chronic diseases.

Remarks/Examples:
Health prevention, detection, and treatment of: breast and testicular cancer, suicide, obesity, and industrial-related chronic disease.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meet standards. Over 900 digital media available for learning. i.e. VIDEO SEGMENT How Cancer Develops Duration 04:12 Animates the development of a cancer tumor in a human body, and states that angiogenesis occurs when blood vessels develop over a tumor. The segment summarizes the...; VIDEO SEGMENT Asthma and Respiration Duration 03:48 Labels asthma as a chronic-inflammatory disease that affects the airways in the respiratory system, and visualizes the impact of asthma on the respiratory system. The segment... that may be assigned by the teacher.

81. **HE.912.C.1.7:** Analyze how heredity and family history can impact personal health.

Remarks/Examples:
Drug use, family obesity, heart disease, mental health, and non-communicable illness or disease.

◉ **VERY GOOD ALIGNMENT** ○ GOOD ALIGNMENT ○ FAIR ALIGNMENT ○ POOR ALIGNMENT ○ VERY POOR/NO ALIGNMENT
Justification:
Meet standards. i.e. INTERACTIVE VIDEO Heredity All organisms are the product of genetic and environmental interactions. Check out why some scientists think that we are completely governed by our genes while others point to a...

82. **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:
Meet standards. Unit Process of Science, Using Scientific Methods, 5E Explore#5 sections focuses on graphing and emphasis on units in tables. Also, i.e. ACTIVITY, Hands-On Lab: Conversions Students will measure the volume of different amounts of liquid assigned to their groups by using various measuring units. Then, they will apply unit conversions and significant...

83. **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:
Meet standards. i.e. CORE INTERACTIVE TEXT Accuracy and Precision of Measurements Accuracy and Precision of Measurements It is important to remember that all measured values are interpretations of readings on measuring instruments. Because of this..., Outliers are all discussed.

84. **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:
Meet standards. See Publishers list - ELD, Instructional Practice, Science and Engineering Practice Alignment. i.e. English Language Proficiency Activity: Genetic Disorders and Technology - Assignment.

85. **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:
Meet standards. i.e. English Language Proficiency Activity: The Chemistry of Life Assignment. English Language Proficiency Activity: The Chemistry of Life, with listing of vocabulary words to be defined. Board Builder collaborative projects. ELA learners to communicate on social medial.