

Bid 3362

## INSTRUCTIONAL MATERIALS ADMINISTRATOR

### Recommendation

Yes

**Comments:** Based upon my evaluation and review of the materials, I highly recommend this for adoption. The strengths of this material is that it utilizes the 5 E teaching and learning method that is easily adapted for differentiation of varying student learning exceptionalities. I thoroughly liked how the curriculum was divided into 7 major units that are strictly aligned to the benchmarks, and would aptly prepare students for any state standardized test in biology. These materials also allow for increased depth of knowledge and practice with science skills that are paramount for creating scientifically literate citizens. Furthermore, with an initiative towards going "green", these materials would meet that objective as well as cost efficiency.

The weakness is that if adopted, this may not work well in Title I schools where low socioeconomic obstacles could severely interfere with a successful implementation of these materials. Additionally, there are considerations regarding the professional development for teachers to be able to fully use all of the capabilities of this curriculum. I know there are some teachers who are adverse to adapting their teaching methods, and using digital software. Although education is quickly adapting technological capabilities as we proceed in the 21st century, there are still financial limitations in school districts that must be considered, as well as technological savviness by individuals.

Having said that, I still highly recommend these materials for adoption based on the versatility of the curriculum that would not only help student learning progression, but teachers as well.

### 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

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

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

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

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

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

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

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

Justification:

The various topics are aligned very well to the state standards and benchmarks for the subject, grade level, and learning outcomes.

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:

The lexicon is of the correct skill level for each standard and benchmark for the appropriate grade level.

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 material is easily adaptable and designed for engaging students and creating an interest factor that would encourage student learning.

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

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

Justification:

The design of each chapter and topic, utilizing the 5 E teaching and learning model provides a level of detail that not only provides sufficient detail for each topic in biology or life science, but does so in a way that creates curiosity to help a student want to learn and discover.

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:

The level of complexity or difficulty of the treatment of content matches the standards.

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

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

Justification:

The level of complexity/difficulty of the treatment of content matches the student abilities and grade level.

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

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

Justification:

The "Model Lesson" section provides a detailed pacing guide to help teachers with lesson planning. The model lesson will provide an allotted time for each section of the 5 E teaching and learning method. The entire curriculum is able to be taught within a standard school year with 50-minute class periods.

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

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

Justification:

The primary and secondary sources contain high quality information that reflects expert information for the subject.

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

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

Justification:

The primary and secondary sources contain high quality information.

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

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

Justification:

All material observed was devoid of any typographical or visual errors.

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:

The materials that were reviewed presented the scientific information without any bias, nor contained any information that was contradictory, and was noninflammatory in nature.

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

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

Justification:

The materials reviewed contained high quality information that was scientifically accurate and current for any biology or life science course.

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

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

Justification:

No errors were observed while reviewing the material.

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

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

Justification:

The content is current with some excellent resources for teaching the material in a way that students will be able to relate to as well as truly comprehend even the typically difficult concepts to learn.

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:

The material is presented using the 5 E teaching and learning model that aligns to the state standards in an appropriate and relevant context.

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:

The content is presented appropriately and in a relevant way that will engage students to want to learn the material.

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

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

Justification:

Each unit contains an engaging introduction to the new topic that will explain how the information is relevant to learning. The layout of the material using the 5 E teaching and learning model is excellent for helping students gain confidence with learning the material.

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:

Each unit has a section titled "Elaborate with STEM" that allows the student to learn the material with excellent interdisciplinary connections to include history, math, and language arts.

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

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

Justification:

As the material was reviewed, there was no biased or unfair portrayals of gender, ethnicity, age, work situations, cultural, religious, physical or various social groups. The materials is an excellent resource for learning biology or life science and is presented in a fair and unbiased way.

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

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

Justification:

There were no concerns regarding the portrayal of people and animals within the materials reviewed.

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:

All instruction strictly adhere to the state standards.

### Presentation

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

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

Justification:

The resources are designed to be more student-centered as opposed to teacher-centered. The reading content does a thorough job that will enable students to learn the material and be adequately prepared for the Florida Biology End of Course exam by the end of the school year.

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

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

Justification:

Each unit strictly adheres to state standards, and the authors provide a resource that aligns each benchmark standard to a specific lesson for the teacher to review. In fact, the teacher can click on the link that will hyperlink to the lesson with the specific standards listed. Upon reviewing the lesson, it is my opinion that the authors did an excellent job of ensuring each lesson aligns with the standards listed. The major tool for teacher and student are aligned with each other.

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

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

Justification:

The layout of the entire curriculum is provided in a way that allows a teacher to modify their curriculum to that of the specific district requirements, which allows for flexibility regardless of a district's pacing guide.

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

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

Justification:

Each unit is packed with excellent and relevant videos to assist in student learning. The format of the curriculum allows for a continuous flow from one idea to the next, and the visual aids help facilitate student learning. Furthermore, each section allows for students to be able to take practice assessments upon completion to allow for self-reflection in the learning process and see what is truly understood.

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

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

Justification:

Each unit allows students to control their own learning. The sheer volume of information in a typical biology course is daunting, but the authors provide a digital resource that covers the depth of knowledge required, but in a manageable amount. The material can be modified to enhance differentiated instruction with ease.

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

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

Justification:

The different modalities (i.e. Spanish version for ELL students) reviewed allow for differentiated instruction that range from accelerated students down to the lowest level performing student, so that each student, regardless of learning abilities, is still able to acquire skills and engage with content as active learners as opposed to passive learners.

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 digital Science Techbook presents the major topics of a standard biology course in an easy-to-use format that allows students to take control of their learning. If students are accelerated learners, there are additional resources to help deepen their learning. However, if a student is struggling with the content, there is ample resources for review available for the student at the discretion of the teacher. The topics are presented with high quality images and videos to support the reading content, and are both relevant and current. Furthermore, the format is arranged in a way that is easy to follow and can enhance the learning process.

## Learning

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

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

Justification:

The science techbook is a highly interactive program that uses multimedia, hands-on activities, and virtual labs to help students learn. One exceptional feature is the "Engage" tab available with every unit that helps to foster student curiosity and desire to want to learn the material by seeing how it is relevant.

**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:

The biology curriculum is replete in its content which can prove difficult for some students to achieve mastery. The curriculum format distributes the big ideas over 7 complete units that enable the learning process to be more accommodating.

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

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

Justification:

Every unit is divided into smaller lessons. Each lesson contains a clear statement of what will be covered, and what the outcomes are at the end of the lesson aligned to each standard. The concept for each lesson is categorized by lesson objectives, overarching questions, focus question, lesson questions, and standards. This format thoroughly designates what will be learned from each lesson.

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

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

Justification:

Each lesson integrates multimedia, interactives, hand-on activities, and virtual labs to assist the student with learning. Additionally, each unit section contains embedded assessment opportunities to further ensure the student has mastered the material before progressing to the next lesson. The entire curriculum is student-centered to help the student become more independent learners and thinkers.

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 Core Interactive Text feature blends text and media for students with different abilities and learning styles. Students can highlight, add sticky notes, and have the text read aloud. Reading levels can be modified and text can also be viewed in Spanish. Real-time data makes it easier to adjust instruction. Science Techbook puts students in control of their own learning. Board Builder promotes independent learning by challenging students to be content producers.

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

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

Justification:

The mental activity is certainly implemented throughout the curriculum, however, I am uncertain as to the physical activity in the student learning processed based upon my observations during the review process.

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

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

Justification:

The curriculum is organized in a way that offers a logical progression for ease of learning each lesson embedded in the unit.

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

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

Justification:

The entire curriculum is designed around the 5 E teaching and learning method. The lessons allow students to engage in learning a new topic. Then students explore, explain, elaborate, and evaluate all that was learned in the lesson.

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 5 E teaching and learning method is highly effective in teaching students the specific targeted outcomes for each lesson.

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

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

Justification:

Each lesson contains embedded assessment opportunities to reinforce the targeted learning outcomes.

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

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

Justification:

Each lesson within the curriculum materials contain a "Board Builder" feature option. Utilizing board builder allow students to create virtual project boards using multimedia and text to synthesize their thinking and provide evidence of their understanding of a concept or problem. Boards can be shared with teachers, classmates, parents, and even with classrooms across the United States and the world. Science Techbook strengthens critical thinking, problem solving, and analytical skills for all students to ensure that targeted outcomes are being achieved by the student.

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

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

Justification:

Science Techbook makes it easier for teachers to differentiate to the type of student learner. The Core Interactive Text feature blends text and media for students with different abilities and learning styles. Students can highlight, add sticky notes, and have the text read aloud. Reading levels can be modified and text can also be viewed in Spanish. Real-time data makes it easier to adjust instruction. Science Techbook puts students in control of their own learning.

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

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

Justification:

Every lesson has an "Elaborate with STEM" feature that integrates mathematical practices which helps quantify the science concept being learned by the student. For example, students will have to calculate the amount of half lives necessary for a given amount of some molecule to degrade. Another example is to calculate the Hardy-Weinberg Principle for certain traits observed within a population. So, the mathematical practices are applicable throughout each lesson.

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:

In my opinion, this material satisfies the learning requirements for a standard biology course, and is one that I would eagerly implement in my classroom.

## Standards

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When looking at standards alignment reviewers should consider not only the robustness of the standard coverage but also the content complexity (depth of knowledge level) if appropriate. More information on content complexity as it relates to Florida standards can be found at:

[http://www.cpalms.org/Uploads/docs/CPALMS/initiatives/contentcomplexity/CPALMS\\_ccdefinitions\\_140711.pdf](http://www.cpalms.org/Uploads/docs/CPALMS/initiatives/contentcomplexity/CPALMS_ccdefinitions_140711.pdf)

For example, if the standard is marked as a level 3 (strategic reasoning and complex thinking) then the materials coverage should reflect this. If the materials coverage is only sufficient to allow for recall (level 1) then this should be reflected in the points assigned.

1. **SC.912.E.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:

The materials coverage allows for levels 3 depth of knowledge for science within the Ecology 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:

The materials coverage allows for level 2 depth of knowledge for science within the Cells unit.

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:

The materials coverage allows for level 3 depth of knowledge for science within the Cells unit.

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:

The materials coverage allows for level 3 depth of knowledge for science within the Cells unit Hands-on lab titled "Classifying Prokaryotic and Eukaryotic Cells."

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:

The materials coverage allows for level 2 depth of knowledge for science within the Cells unit and uses a reading passage to reinforce the concept for science.

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 hands-on activity "Nature versus Nurture" allows for level 4 depth of knowledge for science.

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:

The hands-on activity "Race to the Top" allows for level 3 depth of knowledge for science.

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:

Levels 1 and 2 depth of knowledge for science observed with exploration activities (Nervous system).

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:

STEM in action activity (Applying the Cardiovascular System) allows for level 3 depth of knowledge for science.

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:

The STEM activity (Project: Eating the Large Things) allows for level 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

This particular benchmark is demonstrated throughout the lessons. Specifically, the Student Engineering Design Sheet allows for level 4 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for 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:

Various activities embedded within the lessons allows for levels 1, 2 and 3 depth of knowledge for science.

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:

The activity "Project: Gene Therapy Research Can you provide convincing evidence to win an argument?" allows for level 3 depth of knowledge for science and English language arts.

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:

The activity "Project: A Floating Dump What efforts can be made to reduce the impact of trash in the oceans?" allows for level 3 depth of knowledge for science and English language arts.

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:

The activity "Hands-On Lab: Transcription and Translation" allows for level 3 depth of knowledge for science and English language arts.

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:

Various lessons allow for level 3 depth of knowledge for English language arts.

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:

Various lessons allow for level 3 depth of knowledge for English language arts.

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:

Various lessons allow for level 3 depth of knowledge for English language arts.

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:

Various lessons allow for level 3 depth of knowledge for English language arts.

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:

Various lessons allow for level 3 depth of knowledge for English language arts.

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:

Various lessons allow for level 3 depth of knowledge for English language arts.

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:

Various lessons allow for level 3 depth of knowledge for English language arts.

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:

Various lessons allow for level 3 depth of knowledge for English language arts. (Project: Gene Therapy Research)

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:

The interactive assignment "How Cells Have Changed" allows for level 4 depth of knowledge for English language arts.

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:

Project: Frankenfood Alert Why are GMOs sometimes called "frankenfood"? allows for level 3 depth of knowledge for English language arts.

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:

Activity "Letter to the Editor: For Stem Cell Use" allows for level 3 depth of knowledge in English language arts.

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:

Various activities (interactives and projects) allow for level 3 depth of knowledge in English language arts.

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:

Various activities (interactives and projects) allow for level 3 depth of knowledge in English language arts.

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:

Various activities (interactives and projects) allow for level 3 depth of knowledge in English language arts.

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:

"Project: Addictive Substances" allow for level 3 depth of knowledge in English language arts.

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:

"Project: For Lack of an Enzyme" allow for level 3 depth of knowledge in English language arts.

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:

"Project: Carrying Capacity and Population Technology Why are transmitter tags a useful form of technology for monitoring?" allow for level 3 depth of knowledge in English language arts.

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:

"Project: Conditional Plant Growth What are the most important considerations for plant growth?" allow for level 3 depth of knowledge in English language arts.

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:

"Hands-On Activity: Explaining Evolutionary Processes" allow for level 3 depth of knowledge in English language arts.

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:

"Project: Development of Food Allergies When and how do allergies develop?" allow for level 3 depth of knowledge in English language arts.

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:

None of the activities assigned to this benchmark fully aligns with this standard well.

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:

"Hands-On Lab Infection Inspection" allows for level 2 depth of knowledge for health education.

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:

Reading passages "Being Thin" and "Advances in Immunization" allow for level 2 depth of knowledge for health education.

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:

Reading passage "How DNA Makes Us" allows for level 2 depth of knowledge for health education.

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:

The "Cellular Respiration" exploration activity allows for level 3 depth of knowledge.

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:

"Hands-On Lab: Accurate and Precise Measurements" allows for level 3 depth of knowledge.

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:

Did not see any part of the curriculum that aligns to this standard.

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:

Did not see any part of the curriculum that aligns to this standard.