

INSTRUCTIONAL MATERIALS ADMINISTRATOR

Recommendation

Yes

Comments: This submission has many strengths the first is that it is directly correlated with Florida's standards and benchmarks. It includes an EOC test prep resources. It also has an abundant selection of ancillary materials that allow it to be easily adapted to various levels from special needs, regular, honors and gifted. It even has an AP adaptation.

My concern is that many of the amazing resources that were developed with this text are only available with the Realize online classroom platform. I fear that many school district would not be able to afford this option and therefore diminishes many of the high scoring areas of this adoption.

However, even as a stand alone textbook, teacher book ,and online edition, this is still a very strong book with lots of great embedded features. Some of my favorite are the Case Studies, Performance Based Activities, multi-leveled questions through out the chapter, and the Math and Language Arts connections in each chapter. I feel any teacher would welcome this set into their classroom.

Material for Review

Course: Biology 1 (2000310)

Title: Pearson Miller & Levine Biology, Florida Edition , Edition: 1st

Copyright: 2019

Author: Miller & Levine

Grade Level: 9 - 12

Content

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

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- 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:

This book was designed especially for Florida and does an excellent job of hitting each of the state standards.

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

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

Justification:

The layout and writing are appropriate for the skill level of early high school students.

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:

This submission does an excellent job of providing teachers with ancillary resources to adapt to the particular needs of each classroom.

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:

Career and community connections and Case Studies in each chapter help bring the topic to life and allow students to see the relevance of the topic covered.

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 publishers have obviously spent time making sure they have given teachers ample materials to provide enrichment beyond the basic requirements.

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 materials are on the proper level but also allow for differentiation as well as enrichment.

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 material is chunked into easy to manage time frames but can easily be adapted to less or more time depending on skill level of students.

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:

Miller and Levine are known for their expertise in writing science texts.

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:

This is a high quality resource with access to lots of additional materials.

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

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

Justification:

No errors were noted.

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

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

Justification:

No bias or contradictions were noted.

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 material covered goes above the expectations of the discipline by providing career, community, and case study connections.

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

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

Justification:

No mistakes or inconsistencies were noted.

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:

Current research and methods are evident throughout this text.

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

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

Justification:

This book was designed for Florida and meets all standards and requirements.

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:

Pictures, diagrams, interactive links, and videos make this an excellent resource for this age level and subject.

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:

Career connections, HHMI Videos, Professor lectures, Virtual Labs are ways that the text is connected to real life.

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:

Performance based assessments and Math and Language Arts questions in each chapter allow for seamless interdisciplinary connections.

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:

People of various ages, genders, ethnic backgrounds were easily visible in this text.

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:

Pictures are appropriate for a Biology text,

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:

This submission does an excellent job of meeting the content and benchmark requirement for Biology in the State of Florida.

Presentation

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A. Comprehensiveness of Student and Teacher Resources1. A. The comprehensiveness of the student resources address the targeted learning outcomes without requiring the teacher to prepare additional teaching materials for the course.

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

Justification:

The quality and format of the text and ancillary materials provide a teacher with what is needed with little additional time spent.

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:

Excellent job with alignment of the curriculum.

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 organization of materials is logical and consistent.

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:

Pictures, diagrams, and case studies are engaging along with the ability to bring them to life through the Realize portal. (Which I did not have access to but would have loved to be able to sample)

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:

Easily adjustable based on student needs.

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:

Assistive technology includes text to voice and sign language, highlighting and note-taking.

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

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

Justification:

The presentation of this submission is above my expectations and would be welcomed as a resource for teachers and students.

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:

Virtual labs, Interactive activities, videos, professor lectures, google expeditions are all geared towards motivating learners.

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:

Each unit starts with a case study, important terms, problem based learning and more to hit the big ideas.

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:

Lots of amazing information but some is only accessible using the online digital course which I assume is an optional extra purchase.

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:

Key questions, vocabulary, reading checks, review questions, Study Guides and chapter assessments provide guides for success.

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:

According to the UDL, the publishers have provided many resources to help differentiate learning including various language glossaries, Spanish translations, text to speech and text to sign language as well as enrichment for gifted learners

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:

Excellent additional resources but many things are only available with the Realize Online Digital Class platform which many districts would not be able to afford.

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:

Excellent additional resources but many things are only available with the Realize Online Digital Class platform which many districts would not be able to afford.

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:

Case Studies, Virtual Labs, Videos are a few options that are available with this submission.

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:

Problem based learning, case studies, career connections and interdisciplinary connection are all excellent examples of successful learning strategies.

G. Targeted Assessment Strategies10. G. The materials correlate assessment strategies to the desired learning outcomes.

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

Justification:

Assessment builder is through Exam View a well known and proven question bank system.

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:

Highlighted vocabulary, reading checks, study questions and leveled chapter assessment questions build in complexity and help insure mastery through each chapter.

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:

According to the UDL, the publishers have provided many resources to help differentiate learning including various language glossaries, Spanish translations, text to speech and text to sign language as well as enrichment for gifted learners

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:

Math principals are used in each chapter in the Math Connections section of the chapter assessment as well as in some of the labs and interactive activities.

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:

This resource would be a welcome addition in any biology 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

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:

Energy and Matter: Flows, Cycles, and Conservation, 26 Recycling in Nature, 123-124 The Water Cycle, 125-126 The Carbon Cycle, 126-128

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 Discovery of the Cell, 242-243 The Cell Theory, 243 Chapter Assessment, 276-278 Cells, 904

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:

Chloroplasts, 254 Cell Walls, 256 Cellular Boundaries, 256-257 Passive Transport, 260-263 Active Transport, 264-265 Chlorophyll and Chloroplasts, 286-287 A Problem of Size, 338-340

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:

Quick Lab: What Is a Cell?, 243 Prokaryotes and Eukaryotes, 246-247 Comparing Typical Cells, 258-259 Chlorophyll and Chloroplasts, 286-287 What are Prokaryotes?, 689-690 Structure and Function of Prokaryotes, 691-692

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:

Early Microscopes, 242

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:

What Causes Cancer?, 353 Mutagens, 460 From Molecule to Phenotype, 481-484 Case Study: How can we prevent epidemics?, 680-681 Viral Diseases, 687 Bacterial Diseases, 694 Case Study: How can we save the crops we depend upon?, 760-761 Classifying Diseases, 937-938

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:

Cones and Flowers, 734 Angiosperm Diversity, 739 Plant Tissue Systems, 762-765 Anatomy of a Root, 766 Root Functions, 766-767 Stems, 768-769 Anatomy of a Stem, 768 Leaves, 770-772 Quick Lab: What Is the Role of Leaves in Transpiration?, 774

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:

Chordates, 873 The Central Nervous System, 925 The Endocrine System, 930 Human Systems II, Review, 947

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:

The Circulatory System, 915-917

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:

Case Study: How can antibiotics keep up with drug-resistant bacteria?, 578- 579 Case Study: How can we prevent epidemics?, 680-681 Disease Mechanism, 687 Treating Bacterial Diseases, 695 Technology on the Case, 859 Fighting Disease, 889 Nonspecific Defenses, 938-939 Second Line of Defense, 939 Specific Defenses: The Immune System, 939-941 Fighting Infections, 940-941

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:

Biogeography, 560-561 Recent Fossil Finds, 561-562 Homologous Structures, 563 Genetics and Molecular Biology, 564-565 Exploration Lab: Genes and Evolution, 565 Case Study: How did fossil hunters find Tiktaalik?, 641 Fossils and Ancient Life, 642 Evaluating Evidence in Fossil Record, 643 Hominine Evolution, 818-820

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:

Classifying Species into Larger Groups, 613 The Linnaean Classification System, 614-615 From Two to Six Kingdoms, 616-617 Evolutionary Classification, 619 The Tree of All Life, 626-629 An Overview of the Plant Kingdom, 724

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:

Fields of Biology, 26-27 Genetics and Molecular Biology, 564-565 The Linnaean Classification System, 614-615 Changing Ideas About Kingdoms, 616-618 DNA in Classification, 624-625

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.

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Justification:

Classifying Species into Larger Groups, 613 The Linnaean Classification System, 614-615 From Two to Six Kingdoms, 616-617 The Tree of All Life, 626-629 Bacteria, 689-690 Nutrition and Metabolism, 691 An Overview of the Plant Kingdom, 724 Tree of Life, DOL4-DOL5

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:

The Mysteries of Life's Origins, 659

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:
Hominid Evolution, 659

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:
The Struggle for Existence, 555 Natural Selection, 557 Natural Selection, 567 Populations and Gene Pools, 581

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:
The Struggle for Existence, 555 Genetic Drift, 588-589 Isolating Mechanisms, 592-593 Geographic Isolation, 593-594

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:
Sexual Reproduction, 341 Gene Mapping, 399 Types of Mutations, 457-458 Harmful and Helpful Mutations, 460-461 The Struggle for Existence, 555 Sources of Genetic Variation, 582-583 Genetic Drift, 588-589 Growth, Reproduction, and Recombination, 692

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:
The F1 Cross, 381 Segregation, 381-382 Using Segregation to Predict Outcomes, 384-385 The Two-factor Cross (F1), 387 Independent Assortment, 387-388

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:
Dominance and Recessive Alleles, 380 The Two-factor Cross (F1), 387 Multiple Alleles, 390 Polygenic Traits, 391 Dominant and Recessive Alleles, 476 Polygenic Traits, 584

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:
Replication and Separation of Genetic Material, 396 The Role of DNA, 416-417 The Replication Process, 424-425 Replication in Living Cells, 426-427 Harmful and Helpful Mutations, 460-461 Polymerase Chain Reaction, 510-511 Mutations, 582 The Hardy-Weinberg Principle, 590-591 Genetic Rearrangement, 597 Growth, Reproduction, and Recombination, 692

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:
Types of Mutations, 457-459 Harmful and Helpful Mutations, 460-461 Rewriting the Genome, 511-512 Mutations, 582 Gene Duplication, 596-597 Neutral Mutations as "Ticks", 598 Growth, Reproduction, Recombination, 692

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:
Gene Expression, 416 Three Main Types of RNA, 442 RNA Synthesis, 443-444 The Genetic Code, 445-446 Translation, 447-449 Molecular Genetics, 450

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:

What Causes Cancer?, 353

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:

Characteristics of Living Things, 22-24 Darwin's Epic Journey, 544-545 Common Ancestry, 558-559 Cladograms, 620-623

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:

Fields of Biology, 26-27 Treatments for Cancer, 354 Technology on the Case, 401 Performance-Based Assessment: A New Kind of Drug: mRNA, 466-467 Case Study: What will the future hold for genetically-modified crops?, 504- 505 Agriculture and Industry, 516-517 Forensics Lab: Using DNA to Solve Crimes, 523 Technology on the Case, 529 Performance-Based Assessment: Genetic Modification - New Technology, New Questions, 532-533 Performance-Based Assessment: Cholera in Haiti - Managing a Crisis, 714- 715 Analyzing Data: Impact of the Polio Vaccine, 940

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:

The Formation of Gametes, 381-382 Development and Growth, 884-886 The Male Reproductive System, 933 The Female Reproductive System, 934-936

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:

Cell Division and Reproduction, 54 Eukaryotic Chromosomes, 344 The Cell Cycle, 345-346 Mitosis, 346-347 Regulatory Proteins, 351

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:

The Formation of Gametes, 381-382 Independent Assortment, 387-388 Chromosome Number, 393-394 Phases of Meiosis, 394-395 Gene Mapping, 399

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:

Asexual Reproduction, 341 Comparing Asexual and Sexual Reproduction, 342 Comparing Meiosis to Mitosis, 396-397 Gene Mapping, 399 Sources of Genetic Variation, 582-583

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:

Properties of Water, 47-51 Solar energy and the greenhouse effect, 86-89 Aquatic Ecosystems, 98-101 Nutrient Limitation in Aquatic Ecosystems, 131

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:

Habitat and Niche, 174-177 Primary and Secondary Succession, 182-184 Why Succession Happens, 184 Climate Change Impacts, 220-221 Effects on Life, 650-651

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:

Nutrient Limitation in Aquatic Ecosystems, 131 Case Study: What can we learn from China?, 142-143 Growth Rate, 145 Birthrate and Death Rate, 147 Immigration and Emigration, 148 Phases of Growth, 150 Carrying Capacity, 151 Patterns of Human Population Growth, 160-161

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:

Case Study: How can predators shape an ecosystem?, 172-173 Biodiversity Benefits, 187 Human Causes of Global Change, 206-207 Habitat Loss/Restoration/Fragmentation, 213 Invasive Species, 214 Case Study Wrap-Up: How did plants conquer the land?, 750-751 Case Study Wrap-Up: How are reefs affected by global change?, 828-829

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:

Primary Producers, 114-115 Consumers, 116-117 Food Webs, 118-120 Ecological Pyramids, 121-122 In Your Neighborhood: Biodiversity on the Forest Floor, 188 Heterotrophs and Autotrophs, 285 Decomposers, 693

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:

Changing the Atmosphere and Climate, 208-209 Agriculture and the Atmosphere, 210 Sustainable Development, Renewable Resources, 223-225 Assessment, #34, 234

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:

Climate Change: The Data, 218- 219 Climate Change Impacts, 220-221 Designing Solutions, 222

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:

Causes and Effects of Global Change, 206-217

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:

Macromolecules, 53 Carbohydrates, 53-54 Lipids, 54-55 Proteins, 55-57 Enzymes, 60-61 Nutrient Cycles, 126-130

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:

Energy From the Sun, 114 An Overview of Photosynthesis, 288-290 Carbon Dioxide Enters the Cycle, 294 Temperature Light and Water, 296 Gas Exchange, 722

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:

Case Study: Can San Francisco sourdough be copied?, Overview of Cellular Respiration, 311-312 Glycolysis, 314-315 The Krebs Cycle, 316-317 Fermentation, 321-323 Quick Energy, 324-325

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:

The Carbon Cycle, 126-128 Overview of Cellular Respiration, 311-312 An Overview of Photosynthesis, 288-290

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:

Storing Energy, 282-283 Releasing Energy, 283-284 How Cells Use ATP, 284 ATP Production, 314

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:

Case Study: Analyzing Data, 54 Proteins, 55-57 Nature's Catalysts, 60 Regulation of Enzyme Activity, 61

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:

The Water Molecule, 47-48

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:

Case Study Wrap-Up: What can we learn from China?, 162-163 Performance-Based Assessment: Bioremediation - Using Cells to Clean Up Pollution, 274-275 Case Study Wrap-Up: How can parents understand genetic disorders?, 400- 401 Performance-Based Assessment: Cholera in Haiti - Managing a Crisis, 714- 715 Plus more on each extension 1-11

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:

Case Study: How can biology and technology help solve problems?, 6-7 The Nature of Science, 8-9 Performance-Based Assessment: Investigating Hydroponics, 34-35 Case Study Wrap-Up: Will stem cells change the future of healing?, 362-363 Case Study: Living things don't carry ID cards...or do they?, 410-411 Case Study: DNA—To Test or Not to Test?, 472-473 Case Study: What will the future hold for genetically-modified crops?, 504- 505 Performance-Based Assessment: Good Grief! When Weeds Fight Back!, 604- 605

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:

Lesson Review, 21 Performance-Based Assessment: Investigating Hydroponics, 34-35 Performance-Based Assessment: Harnessing the Fear of Water, 66-67

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:

Forming a Hypothesis, 12 Performance-Based Assessment: Can Algal Blooms Be Useful?, 136-137, Quick Lab: How Does Succession Occur?, 184 Quick Lab: What is the Structure of a Flower?, 740 Quick Lab: What is the Role of Leaves in Transpiration?, 774

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:

Case Study: How can biology and technology help solve problems?, 6-7 The Nature of Science, 8-9 Goals of Science, 9 Scientific Theories, 14 Patterns, 25 Performing Biological Investigation, 28-29 Case Study: DNA—To Test or Not to Test?, 472-473

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:

The Nature of Science, 8-9 Observing and Asking Questions, 12 When Experiments Are Not Possible, 13 Exploration and Discovery, 16-17

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:

Scientific Methodology, 10-13 Scientific Theories, 14 Peer Review, 18

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:

Scientific Methodology, 10-13 Scientific Theories, 14

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:

Lesson Review, 29 Chapter Assessment, 406-408 Lesson Review, 423 Chapter Assessment, 534-536 Case Study Wrap-Up: Why are anoles so diverse?, 568-569 Chapter Assessment, 606-608 Case Study Wrap-Up: How did fossil hunters find Tiktaalik?, 666

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:

Chapter Assessment, 108-110 Chapter Assessment, 834-836

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:

Chapter Assessment, 406-408 Chapter Assessment, 500-502

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:

Chapter Assessment, 500-502 Chapter Assessment, 534-536 Chapter Assessment, 672-675 Chapter Assessment, 716-718

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:

Chapter Assessment, 304-306

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:

Quick Lab: Replicating Procedures, 18 Chapter Assessment, 716-718

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:

Chapter Assessment, 168-170 Study Guide, 328-329 Chapter Assessment, 574-576 Study Guide, 752-753 Study Guide, 946-947 Chapter Assessment, 950-952

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:

Using Mathematics and Computational Thinking, Engaging in Argument from Evidence, Constructing Explanations and Designing Solutions, 21 Chapter Assessment, 169-170 Case Study, Analyzing Data, 545 Lesson Review, 548

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:

Chapter Study Guide, 329 Compare and Contrast alcoholic and lactic acid fermentation, 329 Study Guide, 329 Chapter Assessment, 333 Modeling Lab, 595

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:

Manor Biomes, 94-96 Performance-Based Assessment: Meet the Anthromes, 106-107 RNA and Protein Synthesis, 438-444 Ribosomes and Protein Synthesis, 445 – 450 Gene Regulation and Expression, 451-456 Mutations, 457-463 Researching the Question or Problem, A-9

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.

- 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.
- 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.
- 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.
- 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:

Performance-Based Assessment: Design a Rooftop Garden?, 793 Quick Lab, 18-20 Performance-Based Assessment: Cholera in Haiti, 715 Ask Questions, 836 Performance-Based Assessment: Keeping the Buzz On, 755

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:

Case Study Wrap-Up, 462 Performance-Based Assessment: Design a Rooftop Garden?, 793 Chapter Assessment, 796

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:

Performance-Based Assessment: Cholera in Haiti, 715 Chapter Assessment, 718

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:

Performance-Based Assessment: Biodiversity in the Everglades 230-231 Performance-Based Assessment: Design a Rooftop Garden?, 793

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:

Performance-Based Assessment: A Tale of Two Countries: China and India, 166-167 Performance-Based Assessment: Design a Rooftop Garden?, 793

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

- 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.
- 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.
- 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.
- Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
- 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:

Performance-Based Assessments, 107 Chapter Assessment, 406-408 Chapter Assessment, 500-502 Chapter Assessment, 606-608 Lesson Review, 122 Chapter Assessment, 139 Performance-Based Assessment: Cholera in Haiti, 715 Chapter Assessment, 468-470 Quick Lab: How Can You Model Energy Flow in Ecosystems, 121 Performance-Based Assessment: Can Algal Blooms Be Useful?, 137 Performance-Based Assessment: Data from the Corn Field 303 Performance-Based Assessment: Determining the Age of Ancient Organisms, 671

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:

Study Guide, 32-33 Study Guide, 64-65 Study Guide, 300-301 Study Guide, 602-603 Study Guide, 830-831 Performance-Based Assessment: Determining the Age of Ancient Organisms, 671 Case Study Wrap-Up, How can we prevent epidemics?, 710 Write About Science, 796 Write About Science, 900 Write About Science, 952 Write About Science, 576 Write About Science, 674 Write Explanatory Text, 67 Performance-Based Assessment: Data from the Corn Field 303 Write About Science, 470 Performance-Based Assessment: Tracking Royal Blood, 498 Performance-Based Assessment: Design a Rooftop Garden?, 793

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:

Chapter Assessment, 232-234 Chapter Assessment, 276-278 Chapter Assessment, 332-334 Chapter Assessment, 368-370 Society on the Case, 495

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:

Write About Science, 198 Write About Science, 408 Write About Science, 470 Performance-Based Assessment: Tracking Royal Blood, 498

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:

Performance-Based Assessment: Meet the Anthromes, 107 Performance-Based Assessment: the Populations of Yellowstone, 194 Performance-Based Assessment: Design a Rooftop Garden?, 793 Performance-Based Assessment: A Tale of Two Diseases, 949

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:

Exploration Lab: Temperature and Enzymes, 60 Case Study Wrap-Up: Something is missing. But what?, 62-63 Case Study Wrap-Up: How can we save the crops we depend upon?, 788-789 Performance-Based Assessment: Safe Crossings for Wildlife, 832-833

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:

Chapter Assessment, 68-70 Chapter Assessment, 468-470 Chapter Assessment, 574-576 Chapter Assessment, 606-608 Language Arts Connections, 796

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:

Chapter Assessment, 332-334 Chapter Assessment, 406-408 Chapter Assessment, 500-502 Chapter Assessment, 606-608 Chapter Assessment, 864-866

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:

Chapter Assessment, 716-718 Chapter Assessment, 834-836 Chapter Assessment, 950-952

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:

Case Study, What's Wrong with the Water?, 903-904 The Excretory System, 913

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:

Disease Mechanism, 687 Treating Bacterial Diseases, 695

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:

Case Study: DNA—To Test or Not to Test?, 472-473 Genetic Advantages, 483 The Human Genome, 489-493 Case Study Wrap-Up: DNA—To Test or Not to Test?, 494-495 Performance-Based Assessment: Tracking Royal Blood, 498

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:

Acids, Bases, and pH and The pH Scale, 50 Quick Lab, 645 Naming the Divisions, 647 The Metric System, A-6 – A-7

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:

Collecting and Analyzing Data, Interpreting Data and Drawing Conclusions, 12-13 Exploration Lab, 29 Comparing Accuracy and Precision, A-19 Estimation, Significant Figures, Scientific Notation, A-21 – A-22

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:

Case Study Wrap-Up: How can biology and technology help solve problems?, 30-31 Performance-Based Assessment: Harnessing the Fear of Water, 66-67 Performance-Based Assessment: Biodiversity in the Everglades, 230-231 Technology on the Case, 401 Performance-Based Assessment: Growing More and Better Corn, 404-405 Society on the Case, 495

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:

Case Study Wrap-Up: How can biology and technology help solve problems?, 30-31 Performance-Based Assessment: Harnessing the Fear of Water, 66-67 Technology on the Case, 401 Performance-Based Assessment: Growing More and Better Corn, 404-405 Society on the Case, 495 Performance-Based Assessment: Design a Model of Interacting Systems, 896-897

