Biology 1 (#2000310)

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GENERAL NOTES

Laboratory investigations that include the use of scientific inquiry, research, measurement, problem solving, laboratory apparatus and technologies, experimental procedures, and safety procedures are an integral part of this course. The National Science Teachers Association (NSTA) recommends that at the high school level, all students should be in the science lab or field, collecting data every week. School laboratory investigations (labs) are defined by the National Research Council (NRC) as an experience in the laboratory, classroom, or the field that provides students with opportunities to interact directly with natural phenomena or with data collected by others using tools, materials, data collection techniques, and models (NRC, 2006, p. 3). Laboratory investigations in the high school classroom should help all students develop a growing understanding of the complexity and ambiguity of empirical work, as well as the skills to calibrate and troubleshoot equipment used to make observations. Learners should understand measurement error; and have the skills to aggregate, interpret, and present the resulting data (National Research Council, 2006, p. 77; NSTA, 2007).

Special Notes:

Instructional Practices

Teaching from a range of complex text is optimized when teachers in all subject areas implement the following strategies on a routine basis:

1. Ensuring wide reading from complex text that varies in length.
2. Making close reading and rereading of texts central to lessons.
3. Emphasizing text-specific complex questions, and cognitively complex tasks, reinforce focus on the text and cultivate independence.
4. Emphasizing students supporting answers based upon evidence from the text.
5. Providing extensive research and writing opportunities (claims and evidence).


- Asking questions (for science) and defining problems (for engineering).
- Developing and using models.
- Planning and carrying out investigations.
- Analyzing and interpreting data.
- Using mathematics, information and computer technology, and computational thinking.
- Constructing explanations (for science) and designing solutions (for engineering).
- Engaging in argument from evidence.
- Obtaining, evaluating, and communicating information.

English Language Development ELD Standards Special Notes Section:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate information, ideas and concepts for academic success in the content area of Science. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL’s need for communication and social skills. To access an ELL supporting document which delineates performance definitions and descriptors, please click on the following link:


For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Additional Instructional Resources:

A.V.E. for Success Collection is provided by the Florida Association of School Administrators: http://www.fasa.net/4DCGI/cms/review.html?Action=CMS_Document&DocID=139. Please be aware that these resources have not been reviewed by CPALMS and there may be a charge for the use of some of them in this collection.
Integrate Standards for Mathematical Practice (MP) as applicable.

- MAFS.K12.MP.1.1 Make sense of problems and persevere in solving them.
- MAFS.K12.MP.2.1 Reason abstractly and quantitatively.
- MAFS.K12.MP.3.1 Construct viable arguments and critique the reasoning of others.
- MAFS.K12.MP.4.1 Model with mathematics.
- MAFS.K12.MP.5.1 Use appropriate tools strategically.
- MAFS.K12.MP.6.1 Attend to precision.
- MAFS.K12.MP.7.1 Look for and make use of structure.
- MAFS.K12.MP.8.1 Look for and express regularity in repeated reasoning.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC.912.E.7.1</td>
<td>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.</td>
</tr>
<tr>
<td>SC.912.L.14.1</td>
<td>Describe the scientific theory of the cell (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.</td>
</tr>
<tr>
<td>SC.912.L.14.2</td>
<td>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).</td>
</tr>
<tr>
<td>SC.912.L.14.3</td>
<td>Compare and contrast the general structures of plant and animal cells. Compare and contrast the general structures of prokaryotic and eukaryotic cells.</td>
</tr>
<tr>
<td>SC.912.L.14.4</td>
<td>Compare and contrast structure and function of various types of microscopes.</td>
</tr>
<tr>
<td>SC.912.L.14.6</td>
<td>Explain the significance of genetic factors, environmental factors, and pathogenic agents to health from the perspectives of both individual and public health. Relate the structure of each of the major plant organs and tissues to physiological processes.</td>
</tr>
<tr>
<td>SC.912.L.14.7</td>
<td>Identify the major parts of the brain on diagrams or models.</td>
</tr>
<tr>
<td>SC.912.L.14.26</td>
<td>Explain the basic functions of the human immune system, including specific and nonspecific immune response, vaccines, and antibiotics.</td>
</tr>
<tr>
<td>SC.912.L.14.52</td>
<td>Explain how the scientific theory of evolution is supported by the fossil record, comparative anatomy, comparative embryology, biogeography, molecular biology, and observed evolutionary change.</td>
</tr>
<tr>
<td>SC.912.L.15.1</td>
<td>Describe the factors affecting blood flow through the cardiovascular system.</td>
</tr>
<tr>
<td>SC.912.L.15.10</td>
<td>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.</td>
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<tr>
<td>SC.912.L.15.12</td>
<td>Compare and contrast the general structures of plant and animal cells. Compare and contrast the general structures of prokaryotic and eukaryotic cells.</td>
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<td>SC.912.L.15.4</td>
<td>Describe how and why organisms are hierarchically classified and based on evolutionary relationships.</td>
</tr>
<tr>
<td>SC.912.L.15.5</td>
<td>Discuss distinguishing characteristics of the domains and kingdoms of living organisms.</td>
</tr>
<tr>
<td>SC.912.L.15.6</td>
<td>Explain the reasons for changes in how organisms are classified.</td>
</tr>
<tr>
<td>SC.912.L.15.8</td>
<td>Discuss mechanisms of evolutionary change other than natural selection such as genetic drift and gene flow.</td>
</tr>
<tr>
<td>SC.912.L.15.10</td>
<td>Describe how mutation and genetic recombination increase genetic variation.</td>
</tr>
<tr>
<td>SC.912.L.15.14</td>
<td>Use Mendel's laws of segregation and independent assortment to analyze patterns of inheritance.</td>
</tr>
<tr>
<td>SC.912.L.15.16</td>
<td>Describe the biological processes that result in differential reproductive success.</td>
</tr>
</tbody>
</table>

Annually Assessed on Biology EOC. Also assesses SC.912.L.14.2.

Remarks/Examples: Annually Assessed on Biology EOC. Also assesses SC.912.L.15.10.


### 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.

### Remarks/Examples:

### 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.

### 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.

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

### SC.912.L.16.5
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.

### SC.912.L.16.6
Explain the processes of transcription and translation, and how they result in the expression of genes.

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

### SC.912.L.16.7
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:
Integrate HE.912.C.1.7. Analyze how heredity and family history can impact personal health.

### SC.912.L.16.8
Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.

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

### SC.912.L.16.9
Discuss observed inheritance patterns caused by various modes of inheritance, including dominant, recessive, codominant, sex-linked, polygenic, and multiple alleles.

### Remarks/Examples:

### SC.912.L.16.10
Describe changes in ecosystems resulting from seasonal variations, climate change and succession.

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

### SC.912.L.16.11
Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity.

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

### SC.912.L.16.12
Describe the basic molecular structures and primary functions of the four major categories of biological macromolecules.

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

### SC.912.L.16.13
Explain 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.

### 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.

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

### SC.912.L.16.15
Describe the process of meiosis, including independent assortment and crossing over. Explain how reduction division results in the formation of haploid gametes or spores.

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

### SC.912.L.16.16
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:
Integrate HE.912.C.1.7. Analyze how heredity and family history can impact personal health. Annually assessed on Biology EOC.

### SC.912.L.16.17
Evaluate the impact of biotechnology on the individual, society and the environment, including medical and ethical issues.

### Remarks/Examples:

### SC.912.L.16.18
Discuss the basic molecular structures and primary functions of the four major categories of biological macromolecules.

### Remarks/Examples:

### SC.912.L.16.19
Explain the need for adequate monitoring of environmental parameters when making policy decisions.

### 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.17.11 SC.912.L.17.13 SC.912.N.1.3

### SC.912.L.16.20
Describe changes in ecosystems resulting from seasonal variations, climate change and succession.

### 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.17.11 SC.912.L.17.13 SC.912.N.1.3

### SC.912.L.16.21
Discuss the need for adequate monitoring of environmental parameters when making policy decisions.

### 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.17.11 SC.912.L.17.13 SC.912.N.1.3

### SC.912.L.16.22
Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.

### 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.17.11 SC.912.L.17.13 SC.912.N.1.3

### SC.912.L.16.23
Describe the basic molecular structures and primary functions of the four major categories of biological macromolecules.

### 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.17.11 SC.912.L.17.13 SC.912.N.1.3

### SC.912.L.16.24
Identify the reactants, products, and basic functions of photosynthesis.

### 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.18.11

### SC.912.L.16.25
Identify the reactants, products, and basic functions of aerobic and anaerobic cellular respiration.

### 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.18.11

### SC.912.L.16.26
Explain the interrelated nature of photosynthesis and cellular respiration.

### 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.18.11

### SC.912.L.16.27
Connect the role of adenosine triphosphate (ATP) to energy transfers within a cell.

### 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.18.11 SC.912.L.18.10

### SC.912.L.16.28
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.

### 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.18.11 SC.912.L.18.10

### SC.912.L.16.29
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:
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.18.11 SC.912.L.18.10

### SC.912.L.16.30
Define a problem based on a specific body of knowledge, for example: biology, chemistry, physics, and earth/space science, and do the following:

### 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.18.11 SC.912.L.18.10
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 setup, 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

SC.912.N.1.1:

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 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 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.

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

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

Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied.

Remarks/Examples:
SC.912.N.1.6: Collect data/evidence and use tables/graphs to draw conclusions and make inferences based on patterns or trends in the data.

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 seek falsifications, pseudo-science seeks confirmations.)

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.1: Make sense of problems and persevere in solving them.

LAFS.910.RST.3.1: 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.

Remarks/Examples: Identify what is science, what clearly is not science, and what superficially resembles science (but fails to meet the criteria for science).

LAFS.910.RST.1.2: Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) or contradict previous explanations or accounts.

Remarks/Examples: Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

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.

Remarks/Examples: Assess 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.

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.

Remarks/Examples: Identify 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.

Remarks/Examples: Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.

Remarks/Examples: Write arguments focused on discipline-specific content.

Remarks/Examples: Write arguments focused on discipline-specific content.
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.

<table>
<thead>
<tr>
<th>LAFS.910.WHST.1.2:</th>
<th>Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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.</td>
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<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
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<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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).</td>
</tr>
</tbody>
</table>

| LAFS.910.WHST.2.4: | Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. |
| 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. |
| 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. |
| 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. |
| 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. |
| LAFS.910.WHST.3.9: | Draw evidence from informational texts to support analysis, reflection, and research. |
| 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. |

| 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. |

| 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. |

| 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. |

| ELD.K12.ELL.SI.1: | English language learners communicate information, ideas and concepts necessary for academic success in the content area of Science. |
| ELD.K12.ELL.SC.1: | English language learners communicate for social and instructional purposes within the school setting. |
| 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. ★ |
| MAFS.912.N-Q.1.3: | Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. ★ |

**Equivalent Courses**

- 2000320-Biology 1 Honors
- 2000430-Biology Technology
- 2000322-Pre-AICE Biology
- 2000800-Florida's Preinternational Baccalaureate Biology 1

**Related Certifications**

- Science (Secondary Grades 7-12)
- Biology (Grades 6-12)
- Middle Grades General Science (Middle Grades 5-9)

There are more than 1441 related instructional/educational resources available for this on CPALMS. Click on the following link to access them: [http://www.cpalms.org/Public/PreviewCourse/Preview/13083](http://www.cpalms.org/Public/PreviewCourse/Preview/13083)