**Nature of Science and Integrated Literacy Standards**

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| **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. | |
| **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. | |
| **SC.912.N.1.6:**  Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied.  **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). |
| **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.  **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.  **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. |