|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Strand 1: Inquiry Process**  **Concept 1: Observations, Questions, and Hypotheses** | **PO 1.** Formulate relevant questions about the properties of objects, organisms, and events of the environment using observations and prior knowledge. (See M03-S2C1-01)  **I** | I can formulate questions about  objects, organisms and events of the environment. | Synthesis | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | formulate  relevant  organisms environment |
| Strand 1: Inquiry Process  Concept:: Observations, Questions, and Hypotheses | **PO 2**. Predict the results of an investigation based on observed patterns, not random guessing.  **I** | I can predict the results of an  investigation based on my observations. | Synthesis | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | Predict  Results  Investigation  patterns |
| Strand 1: Inquiry Process  **Concept 2: Scientific Testing (Investigating and Modeling)** | **PO 1**. Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry.  **I** | I can model safe behavior in all science inquiry. | Comprehension | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | Demonstrate  Behavior  instruments |
| Strand 1: Inquiry Process  Concept 2: Scientific Testing (Investigating and Modeling) | **PO 2.** Plan a simple investigation (e.g., one plant receives adequate water, one receives too much water, and one receives too little water) based on the formulated questions.  **I** | I can plan simple investigations based on questions. | Application | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | Investigation  Adequate  formulated |
| Strand 1: Inquiry Process  Concept 2: Scientific Testing (Investigating and Modeling) | **PO 3**. Conduct simple investigations (e.g., related to plant life cycles, changing the pitch of a sound, properties of rocks) in life, physical, and Earth and space sciences.  **I** | I can conduct simple investigations related to plant life cycles. | Synthesis | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | Conduct  Plant life cycles  pitch of a sound  properties |
| Strand 1: Inquiry Process  Concept 2: Scientific Testing (Investigating and Modeling) | **PO 4**. Use metric and U.S. customary units to measure objects. (See M03-S4C4-04)  **I** | I can use metric and U.S customary units to measure objects. | Application | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | metric  U.S. customary  units |
| Strand 1: Inquiry Process  Concept 2: Scientific Testing (Investigating and Modeling) | **PO 5.** Record data in an organized and appropriate format (e.g., t-chart, table, list, written log).  (See W03-S3C2-01 and W03-S3C3-01)  **I** | I can record data on a t-chart. | Application | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | Record  data  organized  t-chart  table  list  written log |
| Strand 1: Inquiry Process  **Concept 3: Analysis and Conclusions** | **PO 1**. Organize data using the following methods with appropriate labels:   * bar graphs * pictographs * tally charts   (See M03-S2C1-02)  **I** | I can categorize information on to bar graphs. | Application | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | Organize  data  bar graphs  pictographs  tally charts |
| Strand 1: Inquiry Process  Concept 3: Analysis and Conclusions | **PO 2**. Construct reasonable interpretations of the collected data based on formulated questions.  (See M03-S2C1-03)  **I** | I can formulate interpretation  of data based on questions | Application  Comprehension | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | Construct  interpretations  data based  formulated |
| Strand 1: Inquiry Process  Concept 3: Analysis and Conclusions | **PO 3**. Compare the results of the investigation to predictions made prior to the investigation.  **I** | I can compare the results of my  investigations with my predictions | Comprehension  Application | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | Compare results investigation predictions |
| Strand 1: Inquiry Process  Concept 3: Analysis and Conclusions | **PO 4**. Generate questions for possible future investigations based on the conclusions of the investigation.  **I** | I can develop questions to help with future investigations. | Synthesis | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | Generate investigations conclusions investigation |
| Strand 1: Inquiry Process  Concept 3: Analysis and Conclusions | **PO 5.** Record questions for further inquiry based on the conclusions of the investigation.  **I** | I can record the conclusions of my investigation. | Application | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | Record  inquiry conclusions investigation |
| Strand 1: Inquiry Process  **Concept 4: Communication** | **PO 1.** Communicate investigations and explanations using evidence and appropriate terminology.  (See W03-S3C2-01)  **I** | I can explain investigations by using appropriate terminology. | Comprehension | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | Communicate investigations explanations terminology |
| Strand 1: Inquiry Process  Concept 4: Communication | **PO 2.** Describe an investigation in ways that enable others to repeat it.  (See W03-S3C2-01 and LS-F1)  **I** | I can summarize an investigation that enables others to repeat it. | Knowledge  Synthesis | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | investigation |
| Strand 1: Inquiry Process  Concept 4: Communication | **PO 3.** Communicate with other groups to describe the results of an investigation.  (See LS-E1)  **I** | I can explain the results of my investigation to other students. | Comprehension  Knowledge | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | Communicate results investigation |
| **Strand 2: History and Nature of Science**  **Concept 1: History of Science as a Human Endeavor** | **PO 1**. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., John Muir [naturalist], supports Strand 4; Thomas Edison [inventor], supports Strand 5; Mae Jemison [engineer, physician, astronaut], supports Strand 6, Edmund Halley [scientist], supports Strand 6).  **I** | I can identify how different people have made important contributions to science. | Knowledge | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | Identify  Diverse  John Muir naturalist  Inventor  Engineer  physician astronaut  scientist |
| Strand 2: History and Nature of Science  Concept 1: History of Science as a Human Endeavor | PO 2. Describe science-related career opportunities.  **I** | I can describe science-related career opportunities. | Knowledge | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | career opportunities |
| Strand 2: History and Nature of Science  **Concept 2: Nature of Scientific Knowledge** | **PO 1.** Describe how, in a system (e.g., terrarium, house) with many components, the components usually influence one another.  **I** | I can describe how one system can influence another system. | Knowledge | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | system terrarium components |
| Strand 2: History and Nature of Science  Concept 2: Nature of Scientific Knowledge | **PO 2.** Explain why a system may not work if a component is defective or missing.  **I** | I can explain why a system may not work if a component is defective or missing. | Comprehension | <http://www.learningscience.org/his1sciencehumanendeavor.htm>  [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/) | System  defective |
| **Strand 4: Life Science**  **Concept 1: Characteristics of Organisms** | **PO 1.** Describe the function of the following plant structures:   * roots – absorb nutrients * stems – provide support * leaves – synthesize food * flowers – attract pollinators and produce seeds for reproduction   **I M** | I can describe the functions of plant structures. | Comprehension | [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/)  Science A Closer Look: Unit A Chapter 1 | Structures  Roots  Stems  Leaves  Flowers  Reproduce  Pollinator |
| Strand 4: Life Science  **Concept 2: Life Cycles** | **PO 1.** Compare life cycles of various plants (e.g. conifers, flowering plants, ferns**)**  **I M** | I can compare the life cycles of various plants. | Comprehension | [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/)  Science A Closer Look: Unit A Chapter 2 | Life cycle  Conifers  Ferns  Flowering plants |
| Strand 4: Life Science  Concept 2: Life Cycles | **PO 2**. Explain how growth, death, and decay are part of the plant life cycle.  **I M** | I can explain how growth, death and decay are part of the plant life cycle. | Comprehension | [www.macmillanmh.com](http://www.macmillanmh.com)  [www.macmillanmh.com/nsdl/](http://www.macmillanmh.com/nsdl/)  Science A Closer Look: Unit A Chapter 2 | Decay  Life cycle |