MAJOR FUNCTIONS

Performance Standard 12A/11A/13A.A

Students will apply the process of scientific inquiry to introduce the basic needs, characteristics and component parts of living things accordingly:

- *Knowledge*: Sort the common key structures and functions for animal and plant grouping.
- *Application*: Match the similar structures or functions of multiple living things.
- *Communication*: Explain how a change of one structure could change the major functions of a plant or an animal.

Procedures

1. ***In order to know and apply concepts that explain how living things function, adapt, and change (12A), know and apply the concepts, principles and processes of scientific inquiry(11A) and know and apply the accepted practices of science(13A)***, students should experience sufficient learning opportunities to develop the following:
   - Sort the common key structures and functions for animal and plant groupings.
   - Explain how a change of one structure could change the major functions of the entire living system for a plant or animal.
   - Describe an observed science concept.
   - Begin guided inquiry.
   - Collect, record, analyze and display data.
   - Communicate results.
   - Apply scientific habits of mind.

   Note to teacher: This activity relates to knowledge associated with standard 12A, while addressing the performance descriptors for stage A within standard 11A. Applying scientific habits of mind noted in standard 13A are foundational to these activities.

   Preparation note: Prepare or obtain images or pictures of the organisms and use them to promote questions which can help students describe and relate parts and functions (e.g., typical plant with component parts, roots, stem, and leaves, the three parts of an insect, parts of the human body.)
2. Have students review and discuss the assessment task and how the rubric will be used to evaluate their work.
3. Begin guided inquiry by having students ask questions about the basic needs, characteristics and component parts of living things. Guide the students toward answering their questions using applicable scientific vocabulary terms and resources.
4. Provide pictures of plants or animals.
5. Ask students to use crayons or colored pencils to circle the following parts or draw them in (e.g., skeleton):
   - Blue – taking in food and water (e.g., mouth, roots); Red – bringing food and water to different parts of the organism (e.g., blood vessels, capillaries).
   - Green – breathing (e.g., lungs, leaves).
   - Black – keeping the organism upright (e.g., skeleton, trunk).
   - Yellow – moving from place to place (e.g., legs).
   - Orange – gathering food and carrying things (e.g., hands and arms).
   - Purple – protecting the diseases from entering the organism (e.g., skin, bark).
5. Continue the guided inquiry by having students ask "what if" questions associated with what would happen to the plant or animal if one of the parts above didn't work any more or if it were removed.
6. Evaluate each student's work using the Science Rubric as follows and add the scores to determine the performance level:
   - *Knowledge*: Sorting of common key structures and functions was complete and correct.
   - *Application*: The matching of the component parts of paired living things was complete and correct.
   - *Communication*: The questions and explanation were thorough, well-reasoned and well-detailed.

Examples of Student Work not available

Time Requirements
- One class period

Resources
- Copies of pictures of living things (various plants and animals)
- Crayons or colored pencils
- Science Rubric