"Insects"
Grade 2 – Summative Assessment

Assessed Understandings

Students will understand that:

1. Identify the needs of living things such as air, food, water, and space.
2. Compare and contrast the life cycles of a variety of living organisms.
3. Explain how the structure of living organisms relates to the functions of the organism's parts.
4. Describe the needs, structures, and interactions of how living organisms change over time.
5. Identify similarities and differences in living organisms.
6. Interpret a graph about the life cycle and growth of a butterfly.

Teacher Notes for the "Insects" Assessment

Introduction

These items were designed to provide an assessment of what students know, understand, and can do at the completion of the Science, Technology, and Children (STC) "Life Cycles" Module and the FOSS "Insects" Module. This document includes teacher directions, response sheets for the individual student, and the analytic scoring rubric for each question. A separate document contains the anchor papers for each question. **A close look at the rubrics prior to the administration of the assessment will be helpful to the teacher.**

Time and Preparation for the Assessment

This assessment should take a **45-minute class period** to administer. You are free to read aloud any or all portions of the assessment to your students. Without giving away a more appropriate response, please help students understand the intent of the question or task. This is not a test of reading, writing, or artistic ability. Students may be encouraged to use any and all resources available including materials from classroom charts, recording sheets, vocabulary lists, and individual journals.

Question 1: The teacher says, **"Point to the Word Box. As I say the word, please point to it. These are the words that you will be sorting and writing under the correct heading in the chart below."**

1. Sort the items in the word box. Write them on the chart below.

Question 2: The teacher will address the pictures of the grasshopper and the ant. The students will be explaining the structure of the legs with their function.

2. Here is a picture of a grasshopper and an ant. The grasshopper has different legs than the ant. What can the grasshopper do with its legs that the ant cannot do?

Question 3: The teacher will ask the students to write two reasons why the grasshopper and ant belong to the insect family.

3. Write **two reasons** why the grasshopper and are both insects.

Question 4: The teacher will address the picture of the terrarium. The teacher will ask the students to write three basic needs an insect has for survival in the pictured habitat.

4. Observe the habitat above. Identify **three** basic needs an insect has for survival in this habitat.

Question 5: The teacher will encourage the students to think about their own life cycle and the life cycle of an insect. The teacher will ask the students to write two ways their life cycle is similar to an insect's life cycle.

5. Identify **two ways** <u>your</u> life cycle is **similar** to an insect's life cycle.

Question 6: The teacher says, **"Point to the 'Growth of a Butterfly' graph. Use information from this graph to answer Questions 6a. and 6b."** The teacher will encourage the students to take time to read the data included on the graph carefully before answering the questions. The teacher will also point out that the number of days is in increments of twos.

6a. Which stage of the butterfly's life cycle is the **shortest**?

6b. What is the total number of days of the butterfly's life cycle?

Question 7: The teacher says, **"Read the scenario at the top of page 5 to yourself as I read it aloud. Mrs. Smith brought in a sample of pond water from her backyard to her classroom. Her second grade students observed that there were several clumps of frog eggs floating among the plants in the container. Write a prediction for Question 7."**

7. Predict what changes you might see in the frog eggs over time.

Scoring Rubrics
"Insects"
Summative Assessment

Question 1: Sort the items in the word box. Write them on the chart below.

This question measures a student's ability to classify things as living or non-living.

Criteria for a complete response:

1. Identifies butterfly eggs, plants, and crickets as living.
2. Identifies water, pebbles, sand, and air as non-living.

Code	Response
	Complete Response
20	Response meets the criteria.
29	Any other scientifically correct response.
	Partially Correct Response
10	Classifies five items correctly and one or two incorrectly.
11	Classifies five items correctly but omits one or two items.
12	Classifies water or air as living.
19	Any other minimally correct response.
	Incorrect Response
70	Classifies less than five items correctly.
71	Includes items not in the box.
79	Any other incorrect response.
	Non-Response
90	Crossed out, erased, illegible, or impossible to interpret.
99	Blank.

Question 2: Here is a picture of a grasshopper and an ant. The grasshopper has different legs than the ant. What can the grasshopper do with its legs that the ant cannot do?

This question measures a student's ability to recognize that structure affects the function of an insect's back legs.

Criterion for a complete response:

1. States that the grasshopper's back legs allow it to jump or escape from predators.

Code	Response
	Complete Response
10	Response meets criterion.
19	Any other scientifically correct response.
	Incorrect Response
70	States that the ant can jump.
79	Any other incorrect response.
	Non-Response
90	Crossed out, erased, illegible, or impossible to interpret.
99	Blank.

Question 3: Write two reasons why the grasshopper and ant are both insects.

This question measures a student's ability to recognize the characteristics of an insect.

Criterion for a complete response:

1. Identifies two characteristics that make a grasshopper or an ant an insect (e.g., insects have six legs, three body parts, and an exoskeleton).

Code	Response
	Complete Response
20	Response meets the criterion.
21	Identifies the three body parts (head, thorax, and abdomen) and one other characteristic.
29	Any other scientifically correct response.
	Partially Correct Response
10	Identifies only one correct characteristic.
19	Any other minimally correct response.
	Incorrect Response
70	Both characteristics listed are incorrect.
79	Any other incorrect response.
	Non-Response
90	Crossed out, erased, illegible, or impossible to interpret.
99	Blank.

Question 4: Observe the habitat above. Identify three basic needs an insect has for survival in this habitat.

This question measures a student's ability to evaluate a habitat and determine if an insect's basic needs can be met.

Criterion for a complete response:

1. Identifies three reasons why the habitat will allow the insect to survive (e.g., the habitat has air, food, water, shelter, space, and sunlight).

Code	Response
	Complete Response
20	Response meets the criterion.
29	Any other scientifically correct response.
	Partially Correct Response
10	Identifies two correct reasons.
19	Any other minimally correct response.
	Incorrect Response
70	Identifies one correct reason.
79	Any other incorrect response.
	Non-Response
90	Crossed out, erased, illegible, or impossible to interpret.
99	Blank.

Question 5: Identify two ways your life cycle is similar to an insect's life cycle.

This question measures a student's ability to identify the similarities in their life cycle and that of an insect.

Criterion for a complete response:

1. Identifies two ways that the life cycle of a human is similar to the life cycle of the insect (e.g., both grow, reproduce, die).

Code	Response
	Complete Response
20	Response meets the criterion.
29	Any other scientifically correct response.
	Partially Correct Response
10	Identifies one way the life cycles are similar.
19	Any other minimally correct response.
	Incorrect Response
70	Explanation lacks information about how the stages of the life cycle are similar.
79	Any other incorrect response.
	Non Response
90	Crossed out, erased, illegible, or impossible to interpret.
99	Blank.

Question 6a: Look at the graph above. Which stage of the butterfly's life cycle is the shortest?

This question measures student's ability to read and analyze data on a graph.

Criterion for a complete response:

1. Identifies "egg" stage as the shortest.

Code	Response
	Complete Response
10	Response meets the criterion.
19	Any other scientifically correct response.
	Incorrect Response
76	Response repeats the stem of the question.
79	Any other incorrect response.
	Non-Response
90	Crossed out, erased, illegible, or impossible to interpret.
99	Blank.

Question 6b: Look at the graph above. What is the total number of days of the butterfly's life cycle?

This question measures a student's ability to read and analyze data on a graph.

Criterion for a complete response:

1. Writes "38" days.

Code	Response
	Complete Response
10	Response meets the criterion.
19	Any other scientifically correct response.
	Incorrect Response
70	Response lacks units (days).
76	Response repeats the stem of the question.
79	Any other incorrect response.
	Non-Response
90	Crossed out, erased, illegible, or impossible to interpret.
99	Blank.

Question 7: Mrs. Smith brought in a sample of pond water from her backyard to her classroom. Her second grade students observed that there were several clumps of frog eggs floating among the plants in the container. Predict what changes you might see in the frog eggs over time.

This question measures a student's ability to transfer knowledge of the changes that happen in living organisms after the egg stage in the life cycle of a frog.

Note: This question is intended as a transfer question. It measures students' understanding of general life cycles.

Criterion for a complete response:

1. Predicts that some of the frog eggs will hatch.

Code	Response
	Complete Response
10	Response meets the criterion.
19	Any other scientifically correct response.
	Incorrect Response
70	Predicts a change that is inaccurate about a frog's life cycle.
71	Predicts a change that is not related to a frog's life cycle.
79	Any other incorrect response.
	Non-Response
90	Crossed out, erased, illegible, or impossible to interpret.
99	Blank.