



Battle Creek Area Mathematics and Science Center Summative Assessment - End of Unit Exam

Attached is the Summative Assessment for the Battle Creek Area Mathematics and Science Center Science Unit, *Organisms Have Character*. This assessment includes a number of multiple-choice questions, one constructed response question, and several items from the unit's Student Journal. Summative assessment of targeted concepts and skills provides feedback to the individual student and the teacher on conceptual understanding, demonstration of achievement of selected content, and determination of readiness for refinement and application of new knowledge and skills. The inclusion of the Student Journal items provides the opportunity to determine the level of understanding and ability of key knowledge and skills targeted in this unit. The Student Journal items evaluate individual student learning and the effectiveness of instruction. Rubrics are included in the Summative Assessment to ensure consistent scoring of the items. All components of this assessment provide multiple opportunities to assess student understanding of each science content expectation addressed in the unit.

The BCAMSC Summative Assessments are in draft form and may change based on student performance and teacher feedback. The BCAMSC Outreach Staff will use data collected from participating districts to make adjustments for the following school year.

If you have any questions or suggestions regarding the Summative Assessment, please direct your calls to Nancy Karre at (269) 965-9584 or email: nancy@bcamsc.org.



A S S E S S M E N T



Name: _____



Date: _____

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1. Plant parts have different functions that help the plant to survive. The roots of the plant:

- a. provide food for the plant.
- b. soak in water and nutrients from the soil.
- c. make and store food for animals.
- d. transport water to the flower.

2. The leaf of the plant:

- a. absorbs water and minerals from rain.
- b. transports water to other plant parts.
- c. absorbs sunlight as energy to make food.
- d. keeps the plant green in color.

3. A flower is a plant part where:

- a. seeds are formed.
- b. rain and nutrients are absorbed.
- c. energy from the sun is made into food.
- d. the plant is anchored from wind and rain.

4. Different plants have different sizes and shapes of leaves. Choose the answer that BEST describes why the size and shape of leaves differ from species to species. Leaves are different shapes and sizes because the different plant habitats have:

- a. different amounts of rainfall.
- b. different kinds of minerals in the soil.
- c. different amounts of sunlight.
- d. different animals that eat the leaves.



Organisms Have Character (cont.)



5. Mrs. Crawford's class was observing the crayfish in the classroom habitat. They wanted to classify their observations into physical and behavioral characteristics. Which of the following BEST completes the statement? Physical characteristics are:
- a. body structures and body parts of an organism.
 - b. characteristics that can be measured with a metric ruler.
 - c. all characteristics that help an organism to survive.
 - d. characteristics that show what the organism can do and how it moves.

6. Kay and Shawn made the following chart based on their crayfish observations:

Crayfish Observations

Physical Characteristics	Behavioral Characteristics
brown and yellow body	Moves claws or pincers back and forth.
segmented body	Curls tail under to move backward.
antennae	Moves forward, backward, and sideways.
eyes on stalks	Hides behind rock.
claws or pincers	Climbs on the rocks.
hard shell or exoskeleton	Eats the plants in habitat.
8 legs and 2 front legs with claws	Molts or sheds exoskeleton.

Choose one physical characteristic of the crayfish that help them to escape from predators.

- a. Their ability to molt or shed their exoskeleton
- b. Their camouflaged brown and yellow coloring
- c. Their segmented bodies and ability to climb
- d. They do not have a backbone.



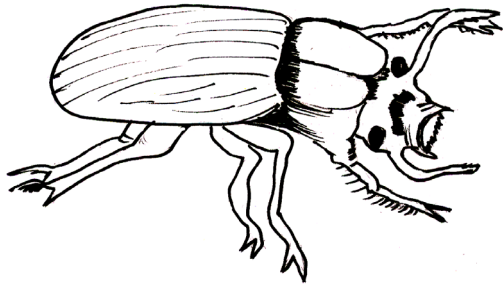
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7. Animals have different physical characteristics that help them to live in their environment. The polar bear can live in the cold and icy Arctic because it has:
- four legs.
 - large paws and claws.
 - thick white fur.
 - sharp teeth.
8. Different kinds of birds have different shapes and sizes to their beaks. Choose the answer that BEST describes why the beaks of birds differ from species to species.
- Beaks differ for use in defending themselves against predators.
 - Beaks differ because the sizes and shapes of birds differ.
 - Beaks differ because of different temperatures in bird habitats.
 - Beaks differ because of the different types of food they eat.
9. What body part will tell you if an animal is a vertebrate?
- head
 - backbone
 - legs
 - eyes
10. Your classroom has crayfish, beetles, pill bugs, and worms as animals to observe in the model habitat. Which of the following characteristics do these classroom animals have in common?
- warm blooded, backbone
 - cold blooded, no backbone
 - cold blooded, no legs
 - cold blooded, live in water



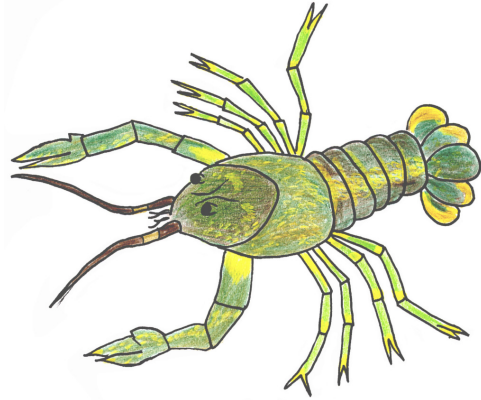
Organisms Have Character
Answer Key (cont.)

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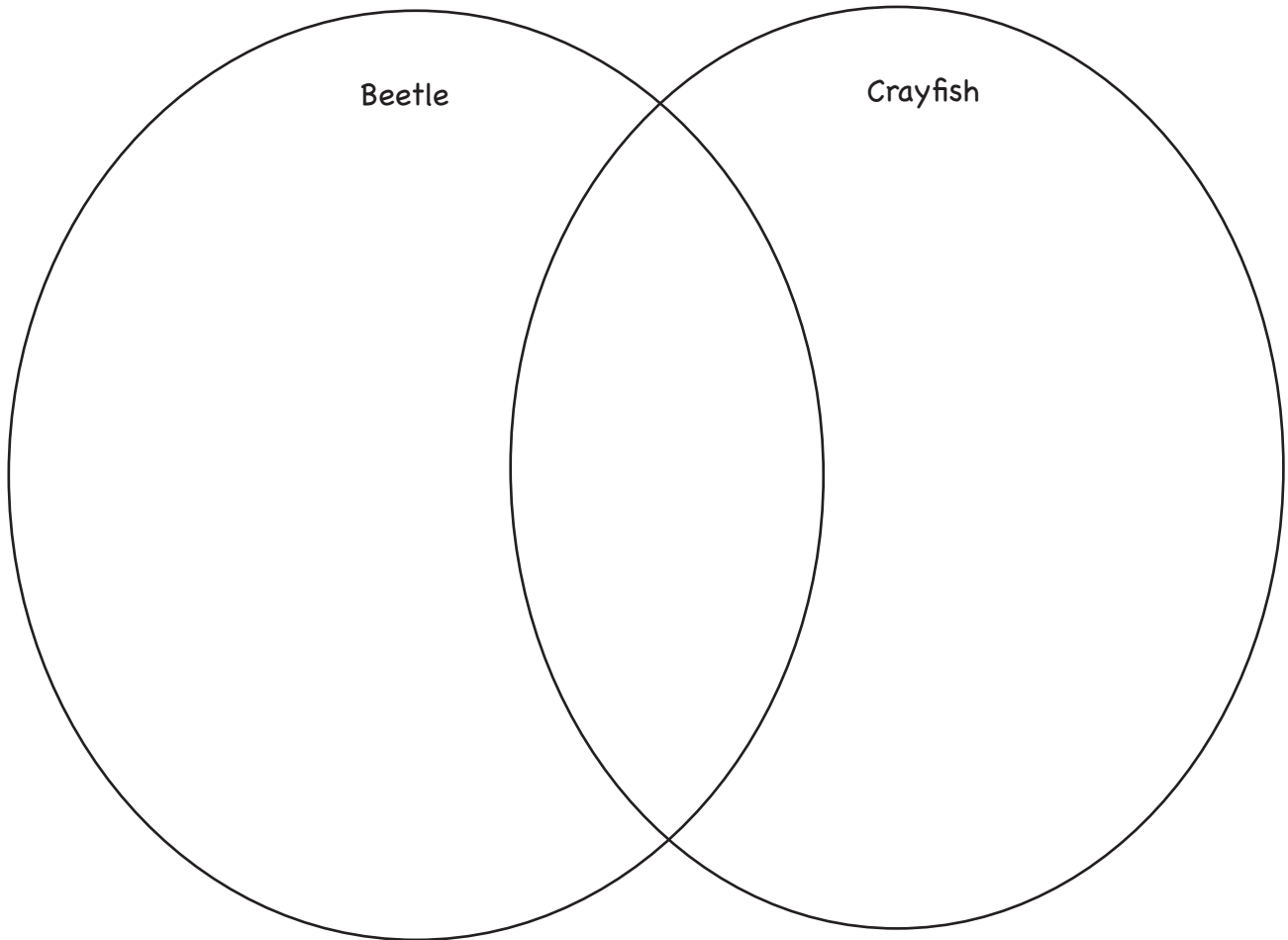
13. Look at the pictures of the beetle and the crayfish. Make a Venn diagram and compare the physical characteristics of the animals.



Beetle



Crayfish





**Organisms Have Character
Answer Key (cont.)**

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Rubric for Organisms Have Character Summative Assessment

(Total Possible Points - 22)

Question #1: *Plant parts have different functions that help the plant to survive. The roots of the plant:*
(L.OL.03.31)

Answer: b (1 point)

Question #2: *The leaf of the plant:* (L.OL.03.31)

Answer: c (1 point)

Question #3: *A flower is a plant part where:* (L.OL.03.31)

Answer: a (1 point)

Question #4: *Choose the answer that BEST describes why the size and shape of leaves differ from species to species. Leaves are different shapes and sizes because the different plant habitats have:* (L.EV.03.11)

Answer: c (1 point)

Question #5: *Which of the following BEST completes the statement? Physical characteristics are:*
(L.OL.03.41, L.OL.03.42)

Answer: a (1 point)

Question #6: *Choose one physical characteristic of the crayfish that help them to escape from predators.*
(L.OL.03.32, L.EV.03.12)

Answer: b (1 point)

Question #7: *The polar bear can live in the cold and icy Arctic because it has:* (L.EV.03.12)

Answer: c (1 point)

Question #8: *Choose the answer that BEST describes why the beaks of birds differ from species to species.*
(L.OL.03.32, L.EV.03.12)

Answer: d (1 point)

Question #9: *What body part will tell you if an animal is a vertebrate?* (L.OL.03.42)

Answer: b (1 point)



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Question #10: *Your classroom has crayfish, beetles, pill bugs, and worms as animals to observe in the model habitat. Which of the following characteristics do these classroom animals have in common?* (L.OL.03.42)

Answer: b (1 point)

Question #11: *John was investigating the function of the stems of plants...What conclusion can John make about the function of the stem of plants? Tell what evidence John has from his investigation.* (L.OL.03.31, S.IA.03.11)

Elements

- a. The stem transports water and minerals to the leaves and flowers.
- b. John's investigation gave evidence of the colored water moving up the stem to the leaves and flowers.

Scoring (2 points)

- 2 - Response includes both elements
- 1 - Response includes one element
- 0 - No response, no elements, can't read the answer

Summative Assessment: Student Journal

Question #12 - Activity #4, Journal Entry: *You find your younger sister pulling leaves off the plants in your mother's garden and leaving just the flowers. She is making a leaf collection and saving the flowers for your mother to pick. Write how you would explain to your younger sister why the plant needs the leaves and what will happen to the garden if all the leaves are gone.* (L.OL.03.31)

Elements

- a. Response includes that the leaves make food for the plant to survive.
- b. Response includes that the food made in the leaves is transported other parts of the plants for growth and survival.
- c. Response includes that without food the plant will stop growing and die.

Scoring (3 points)

- 3 - Response includes three elements
- 2 - Response includes two elements
- 1 - Response includes one element
- 0 - No response, no elements, can't read the answer



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Question #13 - Activity #13, Activity page - *Comparing the Beetle and Crayfish: Look at the pictures of the beetle and the crayfish. Make a Venn diagram and compare the physical characteristics of the animals.* (L.OL.03.41)

Elements

- a. Response includes a comparison of the outer body structure and/or shape.
- b. Response includes a comparison of limbs (i.e. number of legs, tail, antennae)
- c. Response includes a comparison of presence of eyes, nose, mouth.
- d. Response includes a comparison of the presence of antennae.
- e. Response includes similarities and differences of the physical characteristics of the animals.

Scoring (5 points)

- 5 - Response includes five elements
- 4 - Response includes four elements
- 3 - Response includes three elements
- 2 - Response includes two elements
- 1 - Response includes one element
- 0 - No response, no elements, can't read the answer

Question #14 - Activity #14, Journal Entry Question #2: *Use your data from the activity and tell how different beak types help birds to survive in their environment. Look at the pictures of the beak types of different birds. Write how the different beak types help birds to survive in their environment.* (L.OL.03.32)

Elements

- a. Response includes that the shape of the beak is matched to the size of food the bird eats.
- b. Response includes that the shape of the beak is matched to the shape of the food the bird eats.

Scoring (2 points)

- 2 - Response includes both elements
- 1 - Response includes one element
- 0 - No response, no elements, can't read the answer