Connecticut Alternate Science Assessment

Grade 8 Performance Tasks

Life Science

Storyline 3: Living Organisms

Storyline 4: Healthy Ecosystems

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Connecticut Alternate Science Assessment

Life Science

Storyline 3: Living Organisms

Grade 8 Performance Task

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Storyline 3: Living Organisms
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Guiding Questions: What are living organisms made of? What structures and behaviors do plants and animals have that allow them to survive?

NGSS Learning Progressions	Grade 8		
	NGSS Standard Performance Expectations	**Connecticut Alternate Science Essence Statements**	**Core Extensions**
LS1.A Structure and Function	MS-LS1-1 Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.	CTAS-MS-LS1-1 Use the results of an investigation as evidence that living things are made of different types of cells.	1. Identify a structure in a plant that the plant uses to survive or reproduce (e.g., a cone falls from a tree to distribute seeds and allows another tree to grow). (CTAS-MS-LS1-4) 2. Determine how an animal's behavior helps the animal to survive (e.g., bears hibernate to survive in the winter). (CTAS-MS-LS1-4) 3. Use provided evidence to make and support a claim for how a behavior of an animal or a structure of a plant helps them survive and reproduce. (CTAS-MS-LS1-4)
	MS-LS1-3 Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.	CTAS-MS-LS1-3 Make and support a claim based on evidence that the human body is made up of cells and tissues that form body systems.	

NGSS Learning Progressions	Grade 8		
	NGSS Standard Performance Expectations	**Connecticut Alternate Science Essence Statements**	**Core Extensions**
LS1.B Growth and Development of Organisms	MS-LS1-4 Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.	CTAS-MS-LS1-4 Make and support a claim based on evidence for how animal behaviors and plant structures affect their ability to survive and reproduce.	4. Identify that all living things are made of cells, which is the smallest unit of life. (CTAS-MS-LS1-1) 5. Given a human body system, recognize that each system is made of specific types of cells. (CTAS-MS-LS1-3)
Appropriate Vocabulary	Living organism, cell, organ, behavior, survival, reproduce, structure, function, bacteria cell, plant cell, animal cell, microscope, respiratory system, digestive system, circulatory system, red blood cell, nerve cell, skin cell		

Life Science
Storyline 3: Living Organisms
Grade 8 Performance Task

General Overview:
Students complete a series of activities focused on cells, human body systems, and how animal behaviors and plant structures affect their ability to survive and reproduce. The student considers how all living things are made up of cells and how human body systems, which are made up of cells, perform various and unique functions. The student considers how plant structures affect reproduction and how animal behaviors affect survival.

List of Materials Needed:
Teacher-Provided Resources:
There are no Teacher-Provided Resources that are required for this Performance Task.

Instructions for Preparing Materials:
Teachers must collect all relevant materials prior to the administration of each activity. The Card, Sentence Strip, and Strip Resources will need to be cut out. Resources are listed according to the Resource Identifier, which appears on the back of each Resource. The Resources needed for the administration of each activity are listed according to these Resource Identifiers in the Teacher Notes section of each activity.

List of Resources:
- Activity 1 Resource 1: Eastern Hemlock Pine Tree Poster
- Activity 1 Resource 2: Cards 2a – 2c
    - Card 2a – pine tree cones
    - Card 2b – pine tree needles
    - Card 2c – pine tree trunk
- Activity 2 Resource 1: Cards 1a – 1c
    - Card 1a – climbing
    - Card 1b – sleeping
    - Card 1c – eating
- Activity 2 Resource 2: Sentence Strips 2a – 2c
    - Sentence Strip 2a – saves energy
    - Sentence Strip 2b – gets food
    - Sentence Strip 2c – grows more fur
- Activity 3 Resource 1: Squirrel Survival Data Table Poster
- Activity 3 Resource 2: Cards 2a – 2d
    - Card 2a – Squirrel A
    - Card 2b – Squirrel B
    - Card 2c – Squirrel C
    - Card 2d – Squirrel D

- Activity 3 Resource 3: Sentence Strips 3a – 3c
    - Sentence Strip 3a – berries
    - Sentence Strip 3b – acorns
    - Sentence Strip 3c – shelter
- Activity 3 Resource 4: Cards 4a – 4b
    - Card 4a – Yes
    - Card 4b – No
- Activity 4 Resource 1: Student with Microscope Poster
- Activity 4 Resource 2: Cards 2a – 2c
    - Card 2a – bear
    - Card 2b – house
    - Card 2c – rock
- Activity 4 Resource 3: Cards 3a – 3c
    - Card 3a – bacteria cell
    - Card 3b – plant cell
    - Card 3c – animal cell
- Activity 5 Resource 1: Circulatory System Poster
- Activity 5 Resource 2: Cards 2a – 2c
    - Card 2a – red blood cells
    - Card 2b – nerve cells
    - Card 2c – skin cells
- Activity 5 Resource 3: Cards 3a – 3c
    - Card 3a – respiratory and digestive systems
    - Card 3b – digestive and circulatory systems
    - Card 3c – circulatory and respiratory systems

ACTIVITY 1

Essence Statement: CTAS-MS-LS1-4 Make and support a claim based on evidence for how animal behaviors and plant structures affect their ability to survive and reproduce.

Core Extension 1: Identify a structure in a plant that the plant uses to survive or reproduce (e.g., a cone falls from a tree to distribute seeds and allows another tree to grow). (CTAS-MS-LS1-4)

Teacher Notes:

Collect the following resources for this activity:

- Activity 1 Resource 1: Eastern Hemlock Pine Tree Poster
- Activity 1 Resource 2: Cards 2a – 2c
  - Card 2a – pine tree cones
  - Card 2b – pine tree needles
  - Card 2c – pine tree trunk

Steps to Follow:

1. | **SAY** | "In this activity, we are going to talk about parts of a pine tree that help the tree to survive and make new pine trees." |
2. Display Resource 1: Eastern Hemlock Pine Tree Poster for the student.
3. Indicate Resource 1.

SAY	"Eastern hemlock pine trees are seed-producing pine trees that spread their seeds using pine cones (*indicate pine cones*). These pine cones fall from the tree onto the ground and open to allow the seeds to make new trees."

4. | **ASK** | "Which part of the pine tree helps the tree reproduce or make new pine trees?" |
5. Provide Resource 2: Cards 2a – 2c to the student. Indicate and read each Card.
   a. Indicate Card 2a.

SAY	"pine tree cones"

   b. Indicate Card 2b.

SAY	"pine tree needles"

   c. Indicate Card 2c.

SAY	"pine tree trunk"

6. | **ASK AGAIN** | "Which part of the pine tree helps the tree reproduce or make new pine trees?" |
7. | |

8. Indicate Card 2a.

SAY	"Pine tree cones help the tree reproduce or make new pine trees."

9.

ASK	"Which part of the pine tree supports the tree branches?"

10. Provide remaining Resource 2: Card 2b and Card 2c to the student. Indicate and read each remaining Card.

a. Indicate Card 2b.

SAY	"pine tree needles"

b. Indicate Card 2c.

SAY	"pine tree trunk"

11.

ASK AGAIN	"Which part of the pine tree supports the tree branches?"

12. Allow student to respond and record response.

13. Indicate Card 2c.

SAY	"The pine tree trunk supports the tree branches."

14.

SAY	"We are now finished with this activity."

Scoring Guidance and Scaffolding

Scaffolding:

1. After student makes first incorrect attempt, indicate Card 2a.

SAY	"Pine tree cones help the tree reproduce or make new pine trees."

2.

ASK	"Which part of the pine tree supports the tree branches?"

3. Provide remaining Resource 2: Card 2b and Card 2c to the student. Indicate and read each remaining Card.

   a. Indicate Card 2b.

SAY	"pine tree needles"

   b. Indicate Card 2c.

SAY	"pine tree trunk"

4.

ASK AGAIN	"Which part of the pine tree supports the tree branches?"

5. Allow student to respond and record response.

6. Indicate Card 2c.

SAY	"The pine tree trunk supports the tree branches."

7.

SAY	"We are now finished with this activity."

Correct answers are as follows:

1. Which part of the pine tree helps the tree reproduce or make new pine trees?
   a. Card 2a – pine tree cones
2. Which part of the pine tree supports the tree branches?
   a. Card 2c – pine tree trunk

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to identify that the pine tree cones are a part of the pine tree that helps the tree to reproduce (Card 2a); ***and*** • is unable to identify that the pine tree trunk is a part of the tree that supports the tree branches (Card 2c).	The student **does not** demonstrate understanding.	0
Student… • is able to identify that the pine tree cones are a part of the pine tree that helps the tree to reproduce (Card 2a); ***and*** • is unable to identify that the pine tree trunk is a part of the tree that supports the tree branches (Card 2c). **OR** • is unable to identify that the pine tree cones are a part of the pine tree that helps the tree to reproduce (Card 2a); ***and*** • **after scaffolding,** is able to identify that the pine tree trunk is a part of the tree that supports the tree branches (Card 2c).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify that the pine tree cones are a part of the pine tree that helps the tree to reproduce (Card 2a); ***and*** • is able to identify that the pine tree trunk is a part of the tree that supports the tree branches (Card 2c).	The student demonstrates understanding independently without scaffolding.	2

ACTIVITY 2

Essence Statement: CTAS-MS-LS1-4 Make and support a claim based on evidence for how animal behaviors and plant structures affect their ability to survive and reproduce.

Core Extension 2: Determine how an animal's behavior helps the animal to survive (e.g., bears hibernate to survive in the winter). (CTAS-MS-LS1-4)

Teacher Notes:

Collect the following resources for this activity:

- Activity 2 Resource 1: Cards 1a – 1c
  - Card 1a – climbing
  - Card 1b – sleeping
  - Card 1c – eating
- Activity 2 Resource 2: Sentence Strips 2a – 2c
  - Sentence Strip 2a – saves energy
  - Sentence Strip 2b – gets food
  - Sentence Strip 2c – grows more fur

Steps to Follow:

1. | **SAY** | "In this activity, we are going to talk about how bears survive during the winter. Bears rest for long periods of time during the winter months to help them survive. This behavior is called hibernating." |

2. | **ASK** | "Which picture shows the bear hibernating?" |

3. Provide Resource 1: Cards 1a – 1c to the student. Indicate and read each Card.

   a. Indicate Card 1a.

   | **SAY** | "climbing" |

   b. Indicate Card 1b.

   | **SAY** | "sleeping" |

   c. Indicate Card 1c.

   | **SAY** | "eating" |

4. | **ASK AGAIN** | "Which picture shows the bear hibernating?" |

5. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

6. Indicate Card 1b.

   | **SAY** | "This picture of the bear **sleeping** in a cave shows the bear hibernating." |

7. | **SAY** | "There is much less food available to bears during the winter." |

8. | **ASK** | "How does hibernating during winter help the bear to survive?" |

9. Provide Resource 2: Sentence Strips 2a – 2c to the student. Indicate and read each Sentence Strip.

   a. Indicate Sentence Strip 2a.

   | **SAY** | "The bear saves energy." |

   b. Indicate Sentence Strip 2b.

   | **SAY** | "The bear gets food." |

   c. Indicate Sentence Strip 2c.

   | **SAY** | "The bear grows more fur." |

10. | **ASK AGAIN** | "How does hibernating during winter help the bear to survive?" |

11. Allow student to respond and record response.

12. Indicate Sentence Strip 2a.

    | **SAY** | "The bear saves energy." |

13. | **SAY** | "We are now finished with this activity." |

Scoring Guidance and Scaffolding

Scaffolding:

1. After student makes first incorrect attempt, indicate Card 1b.

SAY	"This picture of the bear **sleeping** in a cave shows the bear hibernating."

2.

SAY	"There is much less food available to bears during the winter."

3.

ASK	"How does hibernating during winter help the bear to survive?"

4. Provide Resource 2: Sentence Strips 2a – 2c to the student. Indicate and read each Sentence Strip.

   a. Indicate Sentence Strip 2a.

SAY	"The bear saves energy."

   b. Indicate Sentence Strip 2b.

SAY	"The bear gets food."

   c. Indicate Sentence Strip 2c.

SAY	"The bear grows more fur."

5.

ASK AGAIN	"How does hibernating during winter help the bear to survive?"

6. Allow student to respond and record response.

7. Indicate Sentence Strip 2a.

SAY	"The bear saves energy."

8.

SAY	"We are now finished with this activity."

Correct answers are as follows:

1. Which picture shows the bear hibernating?
   a. Card 1b – sleeping
2. How does hibernating during winter help the bear to survive?
   a. Sentence Strip 2a – The bear saves energy.

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to choose the picture that shows the bear hibernating (Card 1b); ***and*** • is unable to identify that hibernating during winter helps the bear to survive because the bear saves energy (Sentence Strip 2a).	The student **does not** demonstrate understanding.	0
Student… • is able to choose the picture that shows the bear hibernating (Card 1b); ***and*** • is unable to identify that hibernating during winter helps the bear to survive because the bear saves energy (Sentence Strip 2a). **OR** • is unable to choose the picture that shows the bear hibernating (Card 1b); ***and*** • **after scaffolding,** is able to identify that hibernating during winter helps the bear to survive because the bear saves energy (Sentence Strip 2a).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to choose the picture that shows the bear hibernating (Card 1b); ***and*** • is able to identify that hibernating during winter helps the bear to survive because the bear saves energy (Sentence Strip 2a).	The student demonstrates understanding independently without scaffolding.	2

ACTIVITY 3

Essence Statement: CTAS-MS-LS1-4 Make and support a claim based on evidence for how animal behaviors and plant structures affect their ability to survive and reproduce.

Core Extension 3: Use provided evidence to make and support a claim for how a behavior of an animal or a structure of a plant helps them survive and reproduce. (CTAS-MS-LS1-4)

Teacher Notes:

Collect the following resources for this activity:

- Activity 3 Resource 1: Squirrel Survival Data Table Poster
- Activity 3 Resource 2: Cards 2a – 2d
  - Card 2a – Squirrel A
  - Card 2b – Squirrel B
  - Card 2c – Squirrel C
  - Card 2d – Squirrel D
- Activity 3 Resource 3: Sentence Strips 3a – 3c
  - Sentence Strip 3a – berries
  - Sentence Strip 3b – acorns
  - Sentence Strip 3c – shelter
- Activity 3 Resource 4: Cards 4a – 4b
  - Card 4a – Yes
  - Card 4b – No

Steps to Follow:

1.

SAY	"In this activity, we are going to discuss why some squirrels survive through the winter and why other squirrels do not survive through the winter."

2. Display Resource 1: Squirrel Survival Data Table Poster for the student.
3. Indicate Resource 1.

SAY	"This is a data table that shows the survival of three different squirrels *(indicate '**Squirrel**' column)*. Each squirrel stored acorns before winter and was affected by the number of acorns they stored *(indicate '**Number of Acorns Stored**' column)*. Squirrels that stored more than ten acorns survived through winter. Squirrels that **did not** store at least ten acorns **did not** survive through winter."

4.

ASK	"Which squirrel was able to survive through winter?"

5. Provide Resource 2: Cards 2a – 2c to the student. Indicate and read each Card.
   a. Indicate Card 2a.

SAY	"Squirrel A"

   b. Indicate Card 2b.

SAY	"Squirrel B"

c. Indicate Card 2c.

SAY	"Squirrel C"

6.

ASK AGAIN	"Which squirrel was able to survive through winter?"

7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

8. Indicate Card 2b.

SAY	"Only Squirrel B was able to survive through winter."

9.

ASK	"Why was Squirrel B the only squirrel that was able to survive through winter?"

10. Provide Resource 3: Sentence Strips 3a – 3c to the student. Indicate and read each Sentence Strip.

a. Indicate Sentence Strip 3a.

SAY	"Only Squirrel B collected berries."

b. Indicate Sentence Strip 3b.

SAY	"Only Squirrel B stored enough acorns."

c. Indicate Sentence Strip 3c.

SAY	"Only Squirrel B found shelter."

11.

ASK AGAIN	"Why was Squirrel B the only squirrel that was able to survive through winter?"

12. Allow student to respond and record response.

13. Indicate Sentence Strip 3b.

SAY	"Only Squirrel B stored enough acorns."

14. Provide Resource 2: Card 2d to the student.

15. Indicate Card 2d.

SAY	"Squirrel D collected 20 acorns."

16. | **ASK** | "Will Squirrel D survive through winter?" |

17. Provide Resource 4: Cards 4a – 4b to the student. Indicate and read each Card.

a. Indicate Card 4a.

| **SAY** | "Yes" |

b. Indicate Card 4b.

| **SAY** | "No" |

18. | **ASK AGAIN** | "Will Squirrel D survive through winter?" |

19. Allow student to respond and record response.

20. Indicate Card 4a.

| **SAY** | "Yes, Squirrel D will survive through the winter." |

21. | **SAY** | "We are now finished with this activity." |

Scoring Guidance and Scaffolding

Scaffolding:

Note: Optionally, you may ask the student the third question, "Will Squirrel D survive through the winter?", if the scaffold is applied. However, if you choose to ask the third question and the student answers the third question correctly, the student will still receive one point.

1. After student makes first incorrect attempt, indicate Card 2b.

SAY	"Only Squirrel B was able to survive through winter."

2.

ASK	"Why was Squirrel B the only squirrel that was able to survive through winter?"

3. Provide Resource 3: Sentence Strips 3a – 3c to the student. Indicate and read each Sentence Strip.

   a. Indicate Sentence Strip 3a.

SAY	"Only Squirrel B collected berries."

   b. Indicate Sentence Strip 3b.

SAY	"Only Squirrel B stored enough acorns."

   c. Indicate Sentence Strip 3c.

SAY	"Only Squirrel B found shelter."

4.

ASK AGAIN	"Why was Squirrel B the only squirrel that was able to survive through winter?"

5. Allow student to respond and record response.

6. Indicate Sentence Strip 3b.

SAY	"Only Squirrel B stored enough acorns."

7.

SAY	"We are now finished with this activity."

Correct answers are as follows:

1. Which squirrel was able to survive through winter?
   a. Card 2b – Squirrel B
2. Why was Squirrel B the only squirrel that was able to survive through winter?
   a. Sentence Strip 3b – Only Squirrel B stored enough acorns.
3. Will Squirrel D survive through the winter?
   a. Card 4a – Yes

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to identify that only Squirrel B was able to survive through winter (Card 2b); ***and*** • is unable to identify that only Squirrel B was able to survive through the winter because only Squirrel B stored enough acorns (Sentence Strip 3b); ***and*** • is unable to predict that Squirrel D will survive through the winter (Card 4a).	The student **does not** demonstrate understanding.	0
Student… • is able to identify that only Squirrel B was able to survive through winter (Card 2b); ***and*** • is unable to identify that only Squirrel B was able to survive through the winter because only Squirrel B stored enough acorns (Sentence Strip 3b); ***and*** • is unable to predict that Squirrel D will survive through the winter (Card 4a). **OR** • is able to identify that only Squirrel B was able to survive through winter (Card 2b); ***and*** • is able to identify that only Squirrel B was able to survive through the winter because only Squirrel B stored enough acorns (Sentence Strip 3b); ***and*** • is unable to predict that Squirrel D will survive through the winter (Card 4a). **OR** • is unable to identify that only Squirrel B was able to survive through winter (Card 2b); ***and*** • **after scaffolding,** is able to identify that only Squirrel B was able to survive through the winter because only Squirrel B stored enough acorns (Sentence Strip 3b).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1

Student… • is able to identify that only Squirrel B was able to survive through winter (Card 2b); ***and*** • is able to identify that only Squirrel B was able to survive through the winter because only Squirrel B stored enough acorns (Sentence Strip 3b); ***and*** • is able to predict that Squirrel D will survive through the winter (Card 4a).	The student demonstrates understanding independently without scaffolding.	2

ACTIVITY 4

Essence Statement: CTAS-MS-LS1-1 Use the results of an investigation as evidence that living things are made of different types of cells.

Core Extension 4: Identify that all living things are made of cells, which is the smallest unit of life. (CTAS-MS-LS1-1)

Teacher Notes:

Collect the following resources for this activity:

- Activity 4 Resource 1: Student with Microscope Poster
- Activity 4 Resource 2: Cards 2a – 2c
  - Card 2a – bear
  - Card 2b – house
  - Card 2c – rock
- Activity 4 Resource 3: Cards 3a – 3c
  - Card 3a – bacteria cell
  - Card 3b – plant cell
  - Card 3c – animal cell

Steps to Follow:

1. | **SAY** | "In this activity, we are going to talk about cells. All living things are made of cells." |
2. Display Resource 1: Student with Microscope Poster for the student.
3. Indicate Resource 1.

SAY	"Here is a picture of a student with a microscope. The microscope makes small things look big enough to see. The student uses the microscope to see cells."

4. | **ASK** | "Which of these is made of cells?" |
5. Provide Resource 2: Cards 2a – 2c to the student. Indicate and read each Card.
   a. Indicate Card 2a.

SAY	"bear"

   b. Indicate Card 2b.

SAY	"house"

   c. Indicate Card 2c.

SAY	"rock"

6. | **ASK AGAIN** | "Which of these is made of cells?" |

7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

8. Indicate Card 2a.

SAY	"Bears are living things. Bears are made of cells."

9.

ASK	"What cell type makes up a bear?"

10. Provide Resource 3: Cards 3a – 3c to the student. Indicate and read each Card.

a. Indicate Card 3a.

SAY	"bacteria cell"

b. Indicate Card 3b.

SAY	"plant cell"

c. Indicate Card 3c.

SAY	"animal cell"

11.

ASK AGAIN	"What cell type makes up a bear?"

12. Allow student to respond and record response.

13. Indicate Card 3c.

SAY	"The animal cell type makes up a bear. Many animal cells are needed to make up a bear."

14.

SAY	"We are now finished with this activity."

Scoring Guidance and Scaffolding

Scaffolding:

1. After student makes first incorrect attempt, indicate Card 2a.

SAY	"Bears are living things. Bears are made of cells."

2.

ASK	"What cell type makes up a bear?"

3. Provide Resource 3: Cards 3a – 3c to the student. Indicate and read each Card.

   a. Indicate Card 3a.

SAY	"bacteria cell"

   b. Indicate Card 3b.

SAY	"plant cell"

   c. Indicate Card 3c.

SAY	"animal cell"

4.

ASK AGAIN	"What cell type makes up a bear?"

5. Allow student to respond and record response.

6. Indicate Card 3c.

SAY	"The animal cell type makes up a bear. Many animal cells are needed to make up a bear."

7.

SAY	"We are now finished with this activity."

Correct answers are as follows:

1. Which of these is made of cells?
   a. Card 2a – bear
2. What cell type makes up a bear?
   a. Card 3c – animal cell

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to identify that a bear is made of cells (Card 2a); ***and*** • is unable to identify that the animal cell type makes up a bear (Card 3c).	The student **does not** demonstrate understanding.	0
Student… • is able to identify that a bear is made of cells (Card 2a); ***and*** • is unable to identify that the animal cell type makes up a bear (Card 3c). **OR** • is unable to identify that a bear is made of cells (Card 2a); ***and*** • **after scaffolding,** is able to identify that the animal cell type makes up a bear (Card 3c).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify that a bear is a living thing and is made of cells (Card 2a); ***and*** • is able to identify that the animal cell type makes up a bear (Card 3c).	The student demonstrates understanding independently without scaffolding.	2

ACTIVITY 5

Essence Statement: CTAS-MS-LS1-3 Make and support a claim based on evidence that the human body is made up of cells and tissues that form body systems.

Core Extension 5: Given a human body system, recognize that each system is made of specific types of cells. (CTAS-MS-LS1-3)

Teacher Notes:

Collect the following resources for this activity:

- Activity 5 Resource 1: Circulatory System Poster
- Activity 5 Resource 2: Cards 2a – 2c
  - Card 2a – red blood cells
  - Card 2b – nerve cells
  - Card 2c – skin cells
- Activity 5 Resource 3: Cards 3a – 3c
  - Card 3a – respiratory and digestive systems
  - Card 3b – digestive and circulatory systems
  - Card 3c – circulatory and respiratory systems

Steps to Follow:

1. | **SAY** | "In this activity, we are going to talk about different human body systems." |
2. Display Resource 1: Circulatory System Poster for the student.
3. Indicate Resource 1.

SAY	"This is a diagram of the circulatory system. The Circulatory System is made up of the heart *(indicate the heart)*, arteries *(indicate a red artery)*, veins *(indicate a blue vein)*, and blood. The heart, arteries, and veins are made up of different types of cells."

4. | **ASK** | "Which type of cells are in the circulatory system?" |
5. Provide Resource 2: Cards 2a – 2c to the student. Indicate and read each Card.
   a. Indicate Card 2a.

SAY	"red blood cells"

   b. Indicate Card 2b.

SAY	"nerve cells"

   c. Indicate Card 2c.

SAY	"skin cells"

6. | **ASK AGAIN** | "Which type of cells are in the circulatory system?" |

7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

8. Indicate Card 2a.

SAY	"Red blood cells are the type of cells that are in the circulatory system. These cells carry oxygen throughout the body."

9.

ASK	"What two human body systems work together to get oxygen to the cells?"

10. Provide Resource 3: Cards 3a – 3c to the student. Indicate and read each Card.

a. Indicate Card 3a.

SAY	"respiratory and digestive systems"

b. Indicate Card 3b.

SAY	"digestive and circulatory systems"

c. Indicate Card 3c.

SAY	"circulatory and respiratory systems"

11.

ASK AGAIN	"What two human body systems work together to get oxygen to the cells?"

12. Allow student to respond and record response.

13. Indicate Card 3c.

SAY	"The circulatory and respiratory systems work together to get oxygen to the cells."

14.

SAY	"We are now finished with this activity."

Scoring Guidance and Scaffolding

Scaffolding:

1. After student makes first incorrect attempt, indicate Card 2a.

SAY	"Red blood cells are the type of cells that are in the circulatory system. These cells carry oxygen throughout the body."

2.

ASK	"What two human body systems work together to get oxygen to the cells?"

3. Provide Resource 3: Cards 3a – 3c to the student. Indicate and read each Card.

   a. Indicate Card 3a.

SAY	"respiratory and digestive systems"

   b. Indicate Card 3b.

SAY	"digestive and circulatory systems"

   c. Indicate Card 3c.

SAY	"circulatory and respiratory systems"

4.

ASK AGAIN	"What two human body systems work together to get oxygen to the cells?"

5. Allow student to respond and record response.

6. Indicate Card 3c.

SAY	"The circulatory and respiratory systems work together to get oxygen to the cells."

7.

SAY	"We are now finished with this activity."

Correct answers are as follows:

1. Which type of cells are in the circulatory system?
   a. Card 2a – red blood cells
2. What two human body systems work together to get oxygen to the cells?
   a. Card 3c – circulatory and respiratory systems

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to identify that red blood cells are the type of cells that are in the circulatory system (Card 2a); ***and*** • is unable to identify that the circulatory and respiratory systems work together to get oxygen to the cells (Card 3c).	The student **does not** demonstrate understanding.	0
Student… • is able to identify that red blood cells are the type of cells that are in the circulatory system (Card 2a); ***and*** • is unable to identify that the circulatory and respiratory systems work together to get oxygen to the cells (Card 3c). **OR** • is unable to identify that red blood cells are the type of cells that are in the circulatory system (Card 2a); ***and*** • **after scaffolding,** is able to identify that the circulatory and respiratory systems work together to get oxygen to the cells (Card 3c).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify that red blood cells are the type of cells that are in the circulatory system (Card 2a); ***and*** • is able to identify that the circulatory and respiratory systems work together to get oxygen to the cells (Card 3c).	The student demonstrates understanding independently without scaffolding.	2

Connecticut Alternate Science Assessment

Life Science

Storyline 4: Healthy Ecosystems

Grade 8 Performance Task

Life Science
Storyline 4: Healthy Ecosystems
Grade 8 Performance Task

Guiding Questions: What are resources that affect the size of populations in ecosystems? What are the nonliving and living factors that affect populations in an ecosystem? How do populations change over time in an ecosystem? What traits enable populations to change and survive over time?

NGSS Learning Progressions	Grade 8		
	NGSS Standard Performance Expectations	**Connecticut Alternate Science Essence Statements**	**Core Extensions**
LS2.A Interdependent Relationships in Ecosystems	MS-LS2-1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.	CTAS-MS-LS2-1 Interpret data to provide evidence for the effects of resource availability on populations of organisms in an ecosystem.	1. Recognize the difference between physical (non-living) and living features in a given ecosystem. (CTAS-MS-LS2-5) 2. Identify two resources (e.g., food, water, shelter) that affect the size of a population in a given ecosystem. (CTAS-MS-LS2-1) 3. In a given ecosystem, describe how one trait in a plant or an animal may affect the population over time. (CTAS-MS-LS4-6) 4. Identify how two factors (one non-living and one living) may affect the plants and animals living in an ecosystem. (CTAS-MS-LS2-5) 5. Use data from a table or a graph to provide evidence of how the availability of a resource affects the size of a population. (CTAS-MS-LS2-1) 6. Evaluate a solution (by identifying one benefit and one drawback) to a problem in an ecosystem (e.g., lack of water, pollution, or invasive species). (CTAS-MS-LS2-5)
LS2.C Ecosystem Dynamics, Functioning, and Resilience	MS-LS2-5 Evaluate competing design solutions for maintaining biodiversity and ecosystem services.*	CTAS-MS-LS2-5 Evaluate a solution to maintaining a healthy ecosystem, including the physical environment and the plants and animals that live there.	
LS4.C Adaptation	MS-LS4-6 Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.	CTAS-MS-LS4-6 Use data to support an explanation for a change in the traits of animals and plants in a population over time.	

NGSS Learning Progressions	Grade 8		
	NGSS Standard Performance Expectations	**Connecticut Alternate Science Essence Statements**	**Core Extensions**
			7. Describe how a trait in a plant or animal population has changed over time from provided visual representations. (CTAS-MS-LS4-6) 8. Use data from a table or graph to support an explanation of how a trait in a plant or animal population has changed over time. (CTAS-MS-LS4-6)
Appropriate Vocabulary	Organisms, ecosystems, populations, traits, resource availability, healthy ecosystem, unhealthy ecosystem, living, non-living, solution, increased, decreased, generation		

***Indicates a NGSS Standard Performance Expectation or Connecticut Alternate Science Essence Statement that incorporates engineering design.**

Life Science
Storyline 4: Healthy Ecosystems
Grade 8 Performance Task

General Overview:
Students will complete a series of activities focused on a forest environment. Students will consider how the availability of resources impacts populations of animals living in the forest. Students will consider how traits and adaptations enable animals to survive in an environment and how the traits change over time.

List of Materials Needed:
Teacher-Provided Resources:
There are no Teacher-Provided Resources that are required for this Performance Task.

Instructions for Preparing Materials:
Teachers must collect all relevant materials prior to the administration of each activity. The Card, Sentence Strip, and Strip Resources will need to be cut out. Resources are listed according to the Resource Identifier, which appears on the back of each Resource. The Resources needed for the administration of each activity are listed according to these Resource Identifiers in the Teacher Notes section of each activity.

List of Resources:

- Activity 1 Resource 1: Forest Poster
- Activity 1 Resource 2: Cards 2a – 2d
    - Card 2a – tree
    - Card 2b – rock
    - Card 2c – soil
    - Card 2d – moth
- Activity 2 Resource 1a: One Squirrel in Tree Poster
- Activity 2 Resource 1b: Many Squirrels in Trees Poster
- Activity 2 Resource 2: Cards 2a – 2d
    - Card 2a – nuts
    - Card 2b – soil
    - Card 2c – branches
    - Card 2d – sun
- Activity 3 Resource 1: Leaves Poster
- Activity 3 Resource 2: Beetles Poster
- Activity 3 Resource 3: Cards 3a – 3d
    - Card 3a – green
    - Card 3b – brown
    - Card 3c – large
    - Card 3d – small

- Activity 3 Resource 4: Cards 4a – 4c
  - Card 4a – blend
  - Card 4b – crawl
  - Card 4c – eat
- Activity 4 Resource 1a: Stream Before Drought Poster
- Activity 4 Resource 1b: Stream After Drought Poster
- Activity 4 Resource 2: Cards 2a – 2c
  - Card 2a – increase
  - Card 2b – decrease
  - Card 2c – stay the same
- Activity 5 Resource 1: Graph – Fox and Rabbit Population Over Time Poster
- Activity 5 Resource 2: Sentence Strips 2a – 2c
  - Sentence Strip 2a – fox population increase
  - Sentence Strip 2b – fox population decrease
  - Sentence Strip 2c – fox population same
- Activity 5 Resource 3: Sentence Strips 3a – 3c
  - Sentence Strip 3a – less water
  - Sentence Strip 3b – less food
  - Sentence Strip 3c – less shelter
- Activity 6 Resource 1: Eastern Pine Tree Poster
- Activity 6 Resource 2: Benefit and Drawback T-Chart Poster
- Activity 6 Resource 3: Strips 3a –3d
  - Strip 3a – less trees
  - Strip 3b – less shelter
  - Strip 3c – more shelter
  - Strip 3d – more food
- Activity 7 Resource 1a: Finch 1 Beak Poster
- Activity 7 Resource 1b: Finch 2 Beak Poster
- Activity 7 Resource 2: Sentence Strips 2a –2c
  - Sentence Strip 2a – eyes see farther
  - Sentence Strip 2b – feathers longer
  - Sentence Strip 2c – beaks bigger
- Activity 7 Resource 3: Sentence Strips 3a –3c
  - Sentence Strip 3a – different food
  - Sentence Strip 3b – more water
  - Sentence Strip 3c – fewer branches
- Activity 8 Resource 1: Forest Poster
- Activity 8 Resource 2: Moths on Trees Poster
- Activity 8 Resource 3: Moth Data Table Poster

- Activity 8 Resource 4: Cards 4a – 4c
    - Card 4a – more black moths
    - Card 4b – more grey moths
    - Card 4c – all grey moths
- Activity 8 Resource 5: Sentence Strips 5a – 5c
    - Sentence Strip 5a – more grey trees
    - Sentence Strip 5b – equal trees
    - Sentence Strip 5c – more black trees

ACTIVITY 1

Essence Statement: CTAS-MS-LS2-1 Interpret data to provide evidence for the effects of resource availability on populations of organisms in an ecosystem.

Core Extension 1: Recognize the difference between physical (non-living) and living features in a given ecosystem. (CTAS-MS-LS2-5)

Teacher Notes:

Collect the following resources for this activity:

- Activity 1 Resource 1: Forest Poster
- Activity 1 Resource 2: Cards 2a – 2d
  - Card 2a – tree
  - Card 2b – rock
  - Card 2c – soil
  - Card 2d – moth

Steps to Follow:

1. | **SAY** | "In this activity, we are going to talk about a forest environment." |
2. Display Resource 1: Forest Poster for the student.
3. Indicate Resource 1.

SAY	"Some of the trees in the forest have black trunks. Some trees have grey trunks. There are black moths and grey moths flying in the forest. There are rocks at the bottom of some trees. A soil path winds through the forest."

4. | **ASK** | "What is one Card that shows something that is living in the forest?" |
5. Provide Resource 2: Cards 2a – 2d to the student. Indicate and read each Card.
   a. Indicate Card 2a.

SAY	"tree"

   b. Indicate Card 2b.

SAY	"rock"

   c. Indicate Card 2c.

SAY	"soil"

   d. Indicate Card 2d.

SAY	"moth"

6. | **ASK AGAIN** | "What is one Card that shows something that is living in the forest?" |

7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

8. If the student chose a correct answer, reiterate the student's correct answer. Set chosen Card aside.

9.

ASK	"What is one Card that shows something that is non-living in the forest?"

10. Provide remaining Resource 2: Cards 2a – 2d to the student. Indicate and read each remaining Card.

a. Indicate Card 2a.

SAY	"tree"

b. Indicate Card 2b.

SAY	"rock"

c. Indicate Card 2c.

SAY	"soil"

d. Indicate Card 2d.

SAY	"moth"

11.

ASK AGAIN	"What is one Card that shows something that is non-living in the forest?"

12. Allow student to respond and record response.

13. If the student chose a correct answer, reiterate the student's correct answer. Set chosen Card aside.

14.

SAY	"We are now finished with this activity."

Scoring Guidance and Scaffolding

Scaffolding:

Note: Optionally, you may ask the student the second question, "What is one Card that shows something that is non-living in the forest?", if the scaffold is applied. However, if you choose to ask the second question and the student answers the second question correctly, the student will still receive one point.

1. After student makes first incorrect attempt, indicate Card 2a.

SAY	"The tree is something that is living in the forest."

2.

ASK	"What is another Card that shows something that is living in the forest?"

3. Provide remaining Resource 2: Cards 2b – 2d to the student. Indicate and read each remaining Card.

   a. Indicate Card 2b.

SAY	"rock"

   b. Indicate Card 2c.

SAY	"soil"

   c. Indicate Card 2d.

SAY	"moth"

4.

ASK AGAIN	"What is another Card that shows something that is living in the forest?"

5. Allow student to respond and record response.

6. Indicate Card 2d.

SAY	"The moth is something that is living in the forest."

7.

SAY	"We are now finished with this activity."

Correct answers are as follows:

1. What is one Card that shows something that is living in the forest?
   a. Card 2a – tree
   b. Card 2d – moth
2. What is one Card that shows something that is non-living in the forest?
   a. Card 2b – rock
   b. Card 2c – soil

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to identify one living feature in the forest (Card 2a **or** Card 2d); ***and*** • is unable to identify one non-living feature in the forest (Card 2b **or** Card 2c).	The student **does not** demonstrate understanding.	0
Student… • is able to identify one living feature in the forest (Card 2a **or** Card 2d); ***and*** • is unable to identify one non-living feature in the forest (Card 2b **or** Card 2c). **OR** • is unable to identify one living feature of the forest ecosystem (Card 2a **or** Card 2d); ***and*** • **after scaffolding**, is able to identify another living feature in the forest (Card 2d).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify one living feature in the forest (Card 2a **or** Card 2d); ***and*** • is able to identify one non-living feature in the forest (Card 2b **or** Card 2c).	The student demonstrates understanding independently without scaffolding.	2

ACTIVITY 2

Essence Statement: CTAS-MS-LS2-1 Interpret data to provide evidence for the effects of resource availability on populations of organisms in an ecosystem.

Core Extension 2: Identify two resources (e.g., food, water, shelter) that affect the size of a population in a given ecosystem. (CTAS-MS-LS2-1)

Teacher Notes:

Collect the following resources for this activity:

- Activity 2 Resource 1a: One Squirrel in Tree Poster
- Activity 2 Resource 1b: Many Squirrels in Trees Poster
- Activity 2 Resource 2: Cards 2a – 2d
  - Card 2a – nuts
  - Card 2b – soil
  - Card 2c – branches
  - Card 2d – sun

Steps to Follow:

1. | **SAY** | "In this activity, we are going to talk about resources that are found in a forest ecosystem." |
2. Display Resource 1a: One Squirrel in Tree Poster for the student.
3. Indicate Resource 1a.

SAY	"In the forest, many squirrels live in trees. Here is a picture of one squirrel that lives in a tree."

4. | **ASK** | "Which two resources do the trees provide for the squirrels?" |
5. Provide Resource 2: Cards 2a – 2d to the student. Indicate and describe each Card.
   a. Indicate Card 2a.

SAY	"The **nuts** that the tree produces."

   b. Indicate Card 2b.

SAY	"The **soil** under the tree."

   c. Indicate Card 2c.

SAY	"The **branches** to make a home."

   d. Indicate Card 2d.

SAY	"The **sun** that gives energy to the trees to grow."

6. | **ASK AGAIN** | "Which two resources do the trees provide for the squirrels?" |

7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

8. Indicate Card 2a and Card 2c.

SAY	"The **nuts** that the tree produces and the **branches** to make a home are the resources that the trees provide for the squirrels."

9. Display Resource 1a: One Squirrel in Tree Poster for the student.

10. Indicate Resource 1a.

SAY	"This is a picture of one tree. One squirrel lives in the tree."

11. Display Resource 1b: Many Squirrels in Trees Poster for the student.

12. Indicate Resource 1b.

SAY	"This is a picture of many trees. Many squirrels live in these trees."

13.

ASK	"Which picture shows an ecosystem that could support a population of squirrels?"

14. Allow student to respond and record response.

15. Indicate Resource 1b

SAY	"This picture of many trees and many squirrels that live in these trees is an ecosystem that could support a population of squirrels."

16.

SAY	"We are now finished with this activity."

Scoring Guidance and Scaffolding

Scaffolding:

Note: Optionally, you may ask the student the second question, "Which picture shows an ecosystem that could support a population of squirrels?", if the scaffold is applied. However, if you choose to ask the second question and the student answers the second question correctly, the student will still receive one point.

1. After student makes first incorrect attempt, indicate Card 2a.

SAY	"The **nuts** that the tree produces are a resource that the trees provide for the squirrels."

2.

ASK	"What is another resource that the trees provide for the squirrels?"

3. Provide remaining Resource 2: Cards 2b – 2d to the student. Indicate and describe each remaining Card.

   a. Indicate Card 2b.

SAY	"The **soil** under the tree."

   b. Indicate Card 2c.

SAY	"The **branches** to make a home."

   c. Indicate Card 2d.

SAY	"The **sun** that gives energy to the trees to grow."

4.

ASK AGAIN	"What is another resource that the trees provide for the squirrels?"

5. Allow student to respond and record response.

6. Indicate Card 2c.

SAY	"The **branches** to make a home are the resources that the trees provide for the squirrels."

7.

SAY	"We are now finished with this activity."

Correct answers are as follows:

1. Which two resources do the trees provide for the squirrels?
   a. Card 2a – nuts; the nuts that the tree produces.
   b. Card 2c – branches; the branches to make a home.
2. Which picture shows an ecosystem that could support a population of squirrels?
   a. Resource 1b: Many Squirrels in Trees Poster

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to identify the two resources that the trees provide for the squirrels (Card 2a **and** Card 2c); ***and*** • is unable to identify the picture that shows an ecosystem that could support a population of squirrels (Resource 1b).	The student **does not** demonstrate understanding.	0
Student… • is able to identify one or two resources that the trees provide for the squirrels (Card 2a **and/or** Card 2c); ***and*** • is unable to identify the picture that shows an ecosystem that could support a population of squirrels (Resource 1b). **OR** • is unable to identify one resource that the trees provide for the squirrels (Card 2a); ***and*** • **after scaffolding**, is able to identify a second resource that the trees provide for the squirrels (Card 2c).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify two resources that the trees provide for the squirrels (Card 2a **and** Card 2c); ***and*** • is able to identify the picture that shows an ecosystem that could support a population of squirrels (Resource 1b).	The student demonstrates understanding independently without scaffolding.	2

ACTIVITY 3

Essence Statement: CTAS-MS-LS4-6 Use data to support an explanation for a change in the traits of animals and plants in a population over time.

Core Extension 3: In a given ecosystem, describe how one trait in a plant or an animal may affect the population over time. (CTAS-MS-LS4-6)

Teacher Notes:

Collect the following resources for this activity:

- Activity 3 Resource 1: Leaves Poster
- Activity 3 Resource 2: Beetles Poster
- Activity 3 Resource 3: Cards 3a – 3d
  - Card 3a – green
  - Card 3b – brown
  - Card 3c – large
  - Card 3d – small
- Activity 3 Resource 4: Cards 4a – 4c
  - Card 4a – blend
  - Card 4b – crawl
  - Card 4c – eat

Steps to Follow:

1. | **SAY** | "In this activity, we are going to talk about beetles and how they survive in leaves." |
2. Display Resource 1: Leaves Poster for the student.
3. Indicate Resource 1.

SAY	"The leaves on trees turn brown and fall to the ground. Here are many leaves with green and brown beetles. Color is a trait of beetles. There are green and brown beetles that live in the brown leaves on the ground (*indicate the green and brown beetles).* Size is another trait of the beetles. Some beetles are large *(indicate a large beetle)*. Some beetles are small *(indicate a small beetle)*."

4. Display Resource 2: Beetles Poster for the student.
5. Indicate Resource 2.

SAY	"Birds hunt and eat the beetles. At first, there were four green beetles and four brown beetles living in the leaves *(indicate the first circle)*. A few years passed, and there were five brown beetles and three green beetles in the leaves *(indicate second circle).* A few more years passed, and there were six brown beetles and two green beetles *(indicate third circle)*."

6. | **ASK** | "What trait helped the beetles survive in the leaves?" |
7. Provide Resource 3: Cards 3a – 3d to the student. Indicate and read each Card.

a. Indicate Card 3a.

SAY	"Their **green** color."

b. Indicate Card 3b.

SAY	"Their **brown** color."

c. Indicate Card 3c.

SAY	"Their **large** size."

d. Indicate Card 3d.

SAY	"Their **small** size."

8.

ASK AGAIN	"What trait helped the beetles survive in the leaves?"

9. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

10. Indicate Card 3b.

SAY	"Their **brown** color helped the beetles survive in the leaves."

11.

ASK	"How does the brown color help the brown beetle to survive?"

12. Provide Resource 4: Cards 4a – 4c to the student. Indicate and describe each Card.

a. Indicate Card 4a.

SAY	"The brown color helps the brown beetle to **blend in** with the leaves."

b. Indicate Card 4b.

SAY	"The brown color helps the brown beetle to **crawl away** from the leaves."

c. Indicate Card 4c.

SAY	"The brown color helps the brown beetle to **eat more** leaves."

13.

ASK AGAIN	"How does the brown color help the brown beetle to survive?"

14. Allow student to respond and record response.

15. Indicate Card 4a.

SAY	"Their brown color helped the beetles to **blend in** with the leaves."

16. | **SAY** | "We are now finished with this activity." |

Scoring Guidance and Scaffolding

Scaffolding:

1. After student makes first incorrect attempt, indicate Card 3b.

| **SAY** | "Their **brown** color helped the beetles survive in the leaves." |

2. | **ASK** | "How does the brown color help the brown beetle to survive?" |

3. Provide Resource 4: Cards 4a – 4c to the student. Indicate and describe each Card.

   a. Indicate Card 4a.

| **SAY** | "The brown color helps the brown beetle to **blend in** with the leaves." |

   b. Indicate Card 4b.

| **SAY** | "The brown color helps the brown beetle to **crawl away** from the leaves." |

   c. Indicate Card 4c.

| **SAY** | "The brown color helps the brown beetle to **eat more** leaves." |

4. | **ASK AGAIN** | "How does the brown color help the brown beetle to survive?" |

5. Allow student to respond and record response.

6. Indicate Card 4a.

| **SAY** | "Their brown color helped the beetles to **blend in** with the leaves." |

7. | **SAY** | "We are now finished with this activity." |

Correct answers are as follows:

1. What trait helped the beetles survive in the leaves?
   a. Card 3b – brown; Their **brown** color helped the beetles survive in the leaves.
2. How does the brown color help the brown beetle to survive?
   a. Card 4a – blend in; The brown color helps the brown beetle to **blend in** with the leaves.

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to identify that their brown color (Card 3b) is a trait that helps the brown beetles survive; ***and*** • is unable to identify that blending in with the leaves (Card 4a) helps the brown beetle to survive.	The student **does not** demonstrate understanding.	0
Student… • is able to identify that their brown color (Card 3b) is a trait that helps the brown beetles survive; ***and*** • is unable to identify that blending in with the leaves (Card 4a) helps the brown beetle to survive. **OR** • is unable to identify that their brown color (Card 3b) is a trait that helps the brown beetles survive; ***and*** • **after scaffolding,** is able to identify that blending in with the leaves (Card 4a) helps the brown beetle to survive.	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify that their brown color (Card 3b) is a trait that helps the brown beetles survive; ***and*** • is able to identify that blending in with the leaves (Card 4a) helps the brown beetle to survive.	The student demonstrates understanding independently without scaffolding.	2

ACTIVITY 4

Essence Statement: CTAS-MS-LS2-5 Evaluate a solution to maintaining a healthy ecosystem, including the physical environment and the plants and animals that live there.

Core Extension 4: Identify how two factors (one non-living and one living) may affect the plants and animals living in an ecosystem. (CTAS-MS-LS2-5)

Teacher Notes:

Collect the following resources for this activity:

- Activity 4 Resource 1a: Stream Before Drought Poster
- Activity 4 Resource 1b: Stream After Drought Poster
- Activity 4 Resource 2: Cards 2a – 2c
  - Card 2a – increase
  - Card 2b – decrease
  - Card 2c – stay the same

Steps to Follow:

1. | **SAY** | "In this activity, we are going to talk about the same stream before and after a drought." |
2. Display Resource 1a: Stream Before Drought Poster for the student.
3. Indicate Resource 1a.

SAY	"Here is a stream before a drought. This picture shows a forest with trees and a river. There is a population of rabbits and foxes that live here. The rabbits eat the grass. The foxes eat the rabbits."

4. Display Resource 1b: Stream After Drought Poster for the student.
5. Indicate Resource 1b.

SAY	"A drought has occurred in the forest. A drought occurred because there was no rain for many months. This is the same stream after the drought."

6. | **ASK** | "How will the drought affect the size of the rabbit population?" |
7. Provide Resource 2: Cards 2a – 2c to the student. Indicate and read each Card.
   a. Indicate Card 2a.

SAY	"increase"

   b. Indicate Card 2b.

SAY	"decrease"

   c. Indicate Card 2c.

SAY	"stay the same"

8. | **ASK AGAIN** | "How will the drought affect the size of the rabbit population?" |

9. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

10. Indicate Card 2b.

| **SAY** | "The drought will cause the size of the rabbit population to **decrease**." |

11. | **ASK** | "How will fewer foxes affect the size of the rabbit population?" |

12. Provide Resource 2: Cards 2a – 2c to the student. Indicate and read each Card.

a. Indicate Card 2a.

| **SAY** | "increase" |

b. Indicate Card 2b.

| **SAY** | "decrease" |

c. Indicate Card 2c.

| **SAY** | "stay the same" |

13. | **ASK AGAIN** | "How will fewer foxes affect the size of the rabbit population?" |

14. Allow student to respond and record response.

15. Indicate Card 2a.

| **SAY** | "Fewer foxes will cause the size of the rabbit population to **increase**." |

16. | **SAY** | "We are now finished with this activity." |

Scoring Guidance and Scaffolding

Scaffolding:

1. After student makes first incorrect attempt, indicate Card 2b.

SAY	"The drought will cause the size of the rabbit population to **decrease**."

2.

ASK	"How will fewer foxes affect the size of the rabbit population?"

3. Provide Resource 2: Cards 2a – 2c to the student. Indicate and read each Card.

   a. Indicate Card 2a.

SAY	"increase"

   b. Indicate Card 2b.

SAY	"decrease"

   c. Indicate Card 2c.

SAY	"stay the same"

4.

ASK AGAIN	"How will fewer foxes affect the size of the rabbit population?"

5. Allow student to respond and record response.

6. Indicate Card 2a.

SAY	"Fewer foxes will cause the size of the rabbit population to **increase**."

7.

SAY	"We are now finished with this activity."

Correct answers are as follows:

1. How will the drought affect the size of the rabbit population?
   a. Card 2b – The drought will cause the size of the rabbit population to **decrease**.
2. How will fewer foxes affect the size of the rabbit population?
   a. Card 2a – Fewer foxes will cause the size of the rabbit population to **increase**.

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to identify that the size of the rabbit population would decrease (Card 2b) as a result of a drought; ***and*** • is unable to identify that the size of the rabbit population would increase (Card 2a) if there were fewer foxes.	The student **does not** demonstrate understanding.	0
Student… • is able to identify that the size of the rabbit population would decrease (Card 2b) as a result of a drought; ***and*** • is unable to identify that the size of the rabbit population would increase (Card 2a) if there were fewer foxes. **OR** • is unable to identify that the size of the rabbit population would decrease (Card 2b) as a result of a drought; ***and*** • **after scaffolding,** is able to identify that the size of the rabbit population would increase (Card 2a) if there were fewer foxes.	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify that the size of the rabbit population would decrease (Card 2b) as a result of a drought; ***and*** • is able to identify that the size of the rabbit population would increase (Card 2a) if there were fewer foxes.	The student demonstrates understanding independently without scaffolding.	2

ACTIVITY 5

Essence Statement: CTAS-MS-LS2-1 Interpret data to provide evidence for the effects of resource availability on populations of organisms in an ecosystem.

Core Extension 5: Use data from a table or a graph to provide evidence of how the availability of a resource affects the size of a population. (CTAS-MS-LS2-1)

Teacher Notes:

Collect the following resources for this activity:

- Activity 5 Resource 1: Graph – Fox and Rabbit Population Over Time Poster
- Activity 5 Resource 2: Sentence Strips 2a – 2c
  - Sentence Strip 2a – fox population increase
  - Sentence Strip 2b – fox population decrease
  - Sentence Strip 2c – fox population same
- Activity 5 Resource 3: Sentence Strips 3a – 3c
  - Sentence Strip 3a – less water
  - Sentence Strip 3b – less food
  - Sentence Strip 3c – less shelter

Steps to Follow:

1. | **SAY** | "In this activity, we are going to talk about the rabbit and the fox population in a forest." |
2. Display Resource 1: Graph – Fox and Rabbit Population Over Time Poster for the student.
3. Indicate Resource 1.

SAY	"Rabbits and foxes live in a forest. The foxes eat rabbits. Rabbits eat grass. Many years ago, the rabbit population was 100. Over many years, the rabbit population went down. This line represents the rabbit population *(indicate declining rabbit population line)*. This line represents the fox population *(indicate declining fox population line)*."

4. | **ASK** | "What happened to the fox population over many years?" |
5. Provide Resource 2: Sentence Strips 2a – 2c to the student. Indicate and read each Sentence Strip.
   a. Indicate Sentence Strip 2a.

SAY	"The fox population increased."

   b. Indicate Sentence Strip 2b.

SAY	"The fox population decreased."

   c. Indicate Sentence Strip 2c.

SAY	"The fox population stayed the same."

6. | **ASK AGAIN** | "What happened to the fox population over many years?" |

7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

8. Indicate Sentence Strip 2b.

| **SAY** | "The fox population decreased." |

9. | **ASK** | "Why does the fox population decrease when the rabbit population decreases?" |

10. Provide Resource 3: Sentence Strips 3a – 3c to the student. Indicate and read each Sentence Strip.

a. Indicate Sentence Strip 3a.

| **SAY** | "There is less water." |

b. Indicate Sentence Strip 3b.

| **SAY** | "There is less food." |

c. Indicate Sentence Strip 3c.

| **SAY** | "There is less shelter." |

11. | **ASK AGAIN** | "Why does the fox population decrease when the rabbit population decreases?" |

12. Allow student to respond and record response.

13. Indicate Sentence Strip 3b.

| **SAY** | "There is less food." |

14. | **SAY** | "We are now finished with this activity." |

Scoring Guidance and Scaffolding

Scaffolding:

1. After the student has made a first incorrect attempt, indicate Sentence Strip 2b.

SAY	"The fox population decreased when the rabbit population decreased."

2.

ASK	"Why does the fox population decrease when the rabbit population decreases?"

3. Provide Resource 3: Sentence Strips 3a – 3c to the student. Indicate and read each Sentence Strip.

   a. Indicate Sentence Strip 3a.

SAY	"There is less water."

   b. Indicate Sentence Strip 3b.

SAY	"There is less food."

   c. Indicate Sentence Strip 3c.

SAY	"There is less shelter."

4.

ASK AGAIN	"Why does the fox population decrease when the rabbit population decreases?"

5. Allow student to respond and record response.

6. Indicate Sentence Strip 3b.

SAY	"There is less food."

7.

SAY	"We are now finished with this activity."

Correct answers are as follows:

1. What happened to the fox population over many years?
   a. Sentence Strip 2b – The fox population decreased.
2. Why does the fox population decrease when the rabbit population decreases?
   a. Sentence Strip 3b – There is less food.

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to identify the evidence that the fox population decreased (Sentences Strip 2b); ***and*** • is unable to identify that the fox population will decrease when the rabbit population decreases because there is less food (Sentence Strip 3b).	The student **does not** demonstrate understanding.	0
Student… • is able to identify the evidence that the fox population decreased (Sentences Strip 2b); ***and*** • is unable to identify that the fox population will decrease when the rabbit population decreases because there is less food (Sentence Strip 3b). **OR** • is unable to identify the evidence that the fox population decreased (Sentences Strip 2b); ***and*** • **after scaffolding,** is able to identify that the fox population will decrease when the rabbit population decreases because there is less food (Sentence Strip 3b).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify the evidence that the fox population decreased (Sentences Strip 2b); ***and*** • is able to identify that the fox population will decrease when the rabbit population decreases because there is less food (Sentence Strip 3b).	The student demonstrates understanding independently without scaffolding.	2

ACTIVITY 6

Essence Statement: CTAS-MS-LS2-5 Evaluate a solution to maintaining a healthy ecosystem, including the physical environment and the plants and animals that live there.

Core Extension 6: Evaluate a solution (by identifying one benefit and one drawback) to a problem in an ecosystem (e.g., lack of water, pollution, or invasive species). (CTAS-MS-LS2-5)

Teacher Notes:

Collect the following resources for this activity:

- Activity 6 Resource 1: Eastern Pine Tree Poster
- Activity 6 Resource 2: Benefit and Drawback T-Chart Poster
- Activity 6 Resource 3: Strips 3a –3d
  - Strip 3a – less trees
  - Strip 3b – less shelter
  - Strip 3c – more shelter
  - Strip 3d – more food

Steps to Follow:

1. | **SAY** | "In this activity, we are going to talk about what happens when there is a problem in a forest ecosystem." |
2. Display Resource 1: Eastern Pine Tree Poster for the student.
3. Indicate Resource 1.

SAY	"Eastern pine trees grow naturally in Connecticut. Many animals depend upon the pine trees in the forests for food and shelter. A long time ago, people planted trees from another country. These trees had a disease that spread to the Eastern pine trees. The Eastern pine trees became sick. People decided to cut down the new trees from the other country."

4. Display Resource 2: Benefit and Drawback T-Chart Poster for the student.
5. Indicate Resource 2.

SAY	"The left side of this T-Chart is labeled '**Benefit**.' A benefit is something that helps the forest ecosystem. The right side of this T-Chart is labeled '**Drawback**'. A drawback is something that harms the forest ecosystem."

6. | **ASK** | "How is cutting down the new pine trees from the other country a **benefit** to the forest ecosystem? Place one benefit in the correct column of the T-Chart." |
7. Provide Resource 3: Strips 3a – 3d to the student. Indicate and reads each Strip.
   a. Indicate Strip 3a.

SAY	"less trees to spread disease"

b. Indicate Strip 3b.

SAY	"less shelter for animals"

c. Indicate Strip 3c.

SAY	"more shelter for animals"

d. Indicate Strip 3d.

SAY	"more food for animals"

8.

ASK AGAIN	"How is cutting down the new pine trees from the other country a **benefit** to the forest ecosystem? Place one benefit in the correct column of the T-Chart."

9. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

10. Indicate Strip 3a.

SAY	"There will be less trees to spread disease."

11.

ASK	"How is cutting down the new pine trees from the other country a **drawback** to the forest ecosystem? Place one drawback in the correct column of the T-Chart."

12. Provide remaining Resource 3: Strips 3b – 3d to the student. Indicate and read each remaining Strip.

a. Indicate Strip 3b.

SAY	"less shelter for animals"

b. Indicate Strip 3c.

SAY	"more shelter for animals"

c. Indicate Strip 3d.

SAY	"more food for animals"

13.

ASK AGAIN	"How is cutting down the new pine trees from the other country a **drawback** to the forest ecosystem? Place one drawback in the correct column of the T-Chart."

14. Allow student to respond and record response.

15. Indicate Strip 3b.

SAY	"There will be less shelter for animals."

16.

SAY	"We are now finished with this activity."

Scoring Guidance and Scaffolding

Scaffolding:

1. After student makes first incorrect attempt, place Strip 3a in the column in the T-Chart labeled "**Benefit**".

SAY	"Less trees to spread disease is a benefit to the forest ecosystem."

2.

ASK	"How is cutting down the new pine trees from the other country a **drawback** to the forest ecosystem? Place one drawback in the correct column of the T-Chart."

3. Provide remaining Resource 3: Strips 3b – 3d to the student. Indicate and read each remaining Strip.

a. Indicate Strip 3b.

SAY	"less shelter for animals"

b. Indicate Strip 3c.

SAY	"more shelter for animals"

c. Indicate Strip 3d.

SAY	"more food for animals"

4.

ASK AGAIN	"How is cutting down the new pine trees from the other country a **drawback** to the forest ecosystem? Place one drawback in the correct column of the T-Chart."

5. Allow student to respond and record response.

6. Indicate Strip 3b.

SAY	"There will be less shelter for animals."

7.

SAY	"We are now finished with this activity."

Correct answers are as follows:

1. How is cutting down the new pine trees from the other country a **benefit** to the forest ecosystem? Place one benefit in the correct column of the T-Chart.
    a. Strip 3a – less trees to spread disease.
2. How is cutting down the new pine trees from the other country a **drawback** to the forest ecosystem? Place one drawback in the correct column of the T-Chart.
    a. Strip 3b – less shelter for animals.

Benefit	Drawback
Strip 3a – less trees to spread disease	Strip 3b – less shelter for animals

Resource 3: Strip 3c and Strip 3d are distractors and should not be placed on the Resource 2: Benefit and Drawback T-Chart.

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to identify the benefit to the forest ecosystem (Strip 3a); ***and*** • is unable to identify the drawback to the forest ecosystem (Strip 3b).	The student **does not** demonstrate understanding.	0
Student… • is able to identify the benefit to the forest ecosystem (Strip 3a); ***and*** • is unable to identify the drawback to the forest ecosystem (Strip 3b). **OR** • is unable to identify the benefit to the forest ecosystem (Strip 3a); ***and*** • **after scaffolding,** is able to identify the drawback to the forest ecosystem (Strip 3b).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify the benefit to the forest ecosystem (Strip 3a); ***and*** • is able to identify the drawback to the forest ecosystem (Strip 3b).	The student demonstrates understanding independently without scaffolding.	2

ACTIVITY 7

Essence Statement: CTAS-MS-LS4-6 Use data to support an explanation for a change in the traits of animals and plants in a population over time.

Core Extension 7: Describe how a trait in a plant or animal population has changed over time from provided visual representations. (CTAS-MS-LS4-6)

Teacher Notes:

Collect the following resources for this activity:

- Activity 7 Resource 1a: Finch 1 Beak Poster
- Activity 7 Resource 1b: Finch 2 Beak Poster
- Activity 7 Resource 2: Sentence Strips 2a –2c
  - Sentence Strip 2a – eyes see farther
  - Sentence Strip 2b – feathers longer
  - Sentence Strip 2c – beaks bigger
- Activity 7 Resource 3: Sentence Strips 3a –3c
  - Sentence Strip 3a – different food
  - Sentence Strip 3b – more water
  - Sentence Strip 3c – fewer branches

Steps to Follow:

1. | **SAY** | "In this activity, we are going to talk about a trait in a type of bird called a finch that changed over time." |
2. Display Resource 1a: Finch 1 Beak Poster for the student.
3. Display Resource 1b: Finch 2 Beak Poster for the student.
4. Indicate Resource 1a and Resource 1b.

SAY	"These are posters of two finches. At first, the finches looked like Finch 1 *(indicate Resource 1a)*. Over hundreds of years, the finches looked like Finch 2 *(indicate Resource 1b)*."

5. | **ASK** | "What trait in the finches changed over time?" |
6. Provide Resource 2: Sentence Strips 2a – 2c to the student. Indicate and read each Sentence Strip.
   a. Indicate Sentence Strip 2a.

SAY	"Their eyes could see farther."

   b. Indicate Sentence Strip 2b.

SAY	"Their feathers became longer."

   c. Indicate Sentence Strip 2c.

SAY	"Their beaks became bigger."

7. | **ASK AGAIN** | "What trait in the finches changed over time?" |

8. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

9. Indicate Sentence Strip 2c.

| **SAY** | "Their beaks became bigger." |

10. | **ASK** | "What was the most likely cause of the change in the finches' beaks over time?" |

11. Provide Resource 3: Sentence Strips 3a – 3c to the student. Indicate and read each Sentence Strip.

a. Indicate Sentence Strip 3a.

| **SAY** | "There was different food available." |

b. Indicate Sentence Strip 3b.

| **SAY** | "There was more water available." |

c. Indicate Sentence Strip 3c.

| **SAY** | "There were fewer branches available." |

12. | **ASK AGAIN** | "What was the most likely cause of the change in the finches' beaks over time?" |

13. Allow student to respond and record response.

14. Indicate Sentence Strip 3a.

| **SAY** | "There was different food available." |

15. | **SAY** | "We are now finished with this activity." |

Scoring Guidance and Scaffolding

Scaffolding:

1. After student makes first incorrect attempt, indicate Sentence Strip 2c.

SAY	"Their beaks became bigger."

2.

ASK	"What was the most likely cause of the change in the finches' beaks over time?"

3. Provide Resource 3: Sentence Strips 3a – 3c to the student. Indicate and read each Sentence Strip.

   a. Indicate Sentence Strip 3a.

SAY	"There was different food available."

   b. Indicate Sentence Strip 3b.

SAY	"There was more water available."

   c. Indicate Sentence Strip 3c.

SAY	"There were fewer branches available."

4.

ASK AGAIN	"What was the most likely cause of the change in the finches' beaks over time?"

5. Allow student to respond and record response.

6. Indicate Sentence Strip 3a.

SAY	"There was different food available."

7.

SAY	"We are now finished with this activity."

Correct answers are as follows:

1. What trait in the finches changed over time?
   a. Sentence Strip 2c – Their beaks became bigger.
2. What was the most likely cause of the change in the finches' beaks over time?
   a. Sentence Strip 3a – There was different food available.

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to identify the trait in the finches that changed over time (Sentence Strip 2c); ***and*** • is unable to identify the most likely cause of the change in the finches' beaks over time (Sentence Strip 3a).	The student **does not** demonstrate understanding.	0
Student… • is able to identify the trait in the finches that changed over time (Sentence Strip 2c); ***and*** • is unable to identify the most likely cause of the change in the finches' beaks over time (Sentence Strip 3a). **OR** • is unable to identify the trait in the finches that changed over time (Sentence Strip 2c); ***and*** • **after scaffolding,** is able to identify the most likely cause of the change in the finches' beaks over time (Sentence Strip 3a).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... • is able to identify the trait in the finches that changed over time (Sentence Strip 2c); ***and*** • is able to identify the most likely cause of the change in the finches' beaks over time (Sentence Strip 3a).	The student demonstrates understanding independently without scaffolding.	2

ACTIVITY 8

Essence Statement: CTAS-MS-LS4-6 Use data to support an explanation for a change in the traits of animals and plants in a population over time.

Core Extension 8: Use data from a table or graph to support an explanation of how a trait in a plant or animal population has changed over time. (CTAS-MS-LS4-6)

Teacher Notes:

Collect the following resources for this activity:

- Activity 8 Resource 1: Forest Poster
- Activity 8 Resource 2: Moths on Trees Poster
- Activity 8 Resource 3: Moth Data Table Poster
- Activity 8 Resource 4: Cards 4a – 4c
  - Card 4a – more black moths
  - Card 4b – more grey moths
  - Card 4c – all grey moths
- Activity 8 Resource 5: Sentence Strips 5a – 5c
  - Sentence Strip 5a – more grey trees
  - Sentence Strip 5b – equal trees
  - Sentence Strip 5c – more black trees

Steps to Follow:

1. | **SAY** | "In this activity, we are going to talk about how the moths in a forest change over time." |
2. Display Resource 1: Forest Poster for the student.
3. Indicate Resource 1.

   | **SAY** | "Here is a forest. Some of the trees have grey bark and some of the trees have black bark (*indicate each type of tree*). The moths in this forest are either grey or black *(indicate the moths in the forest)*." |
4. Display Resource 2: Moths on Trees Poster for the student.
5. Indicate Resource 2.

   | **SAY** | "Birds can easily see the black moths on a grey tree (*indicate the black moth on the grey tree)*. Birds can easily see grey moths on black trees (*indicate the grey moth on the black tree)*." |
6. Display Resource 3: Moths Data Table Poster for the student.
7. Indicate Resource 3.

   | **SAY** | "This is a table of the grey and black moths. The moths live in a forest that has many trees with black bark (*indicate the black tree in Resource 2*). In generation 1, there were five grey moths and 1 black moth. In generation 2, there were two black moths and four grey moths. In generation 3, there were four black moths and two grey moths." |

8. | **ASK** | "Which picture represents the moths in generation 4?" |

9. Provide Resource 4: Cards 4a – 4c to the student. Indicate and describe each Card.

a. Indicate Card 4a.

SAY	"More Black Moths: There are five black moths and one grey moth in generation 4."

b. Indicate Card 4b.

SAY	"More Grey Moths: There are two black moths and four grey moths in generation 4."

c. Indicate Card 4c.

SAY	"All Grey Moths: There are six grey moths in generation 4."

10. | **ASK AGAIN** | "Which picture represents the moths in generation 4?" |

11. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

12. Indicate Card 4a.

SAY	"More Black Moths: There are five black moths and one grey moth in generation 4."

13. | **ASK** | "Why were there more grey moths than black moths in generation 1?" |

14. Provide Resource 5: Sentence Strips 5a – 5c to the student. Indicate and read each Sentence Strip.

a. Indicate Sentence Strip 5a.

SAY	"There were more grey trees in generation 1."

b. Indicate Sentence Strip 5b.

SAY	"There were an equal number of grey and black trees in generation 1."

c. Indicate Sentence Strip 5c.

SAY	"There were more black trees in generation 1."

15. | **ASK AGAIN** | "Why were there more grey moths than black moths in generation 1?" |

16. Allow student to respond and record response.

17. Indicate Sentence Strip 5a.

SAY	"There were more grey trees in generation 1."

18.

SAY	"We are now finished with this activity."

Scoring Guidance and Scaffolding

Scaffolding:

1. After student makes first incorrect attempt, indicate Card 4a.

SAY	"More Black Moths: There are five black moths and one grey moth in generation 4."

2.

ASK	"Why were there more grey moths than black moths in generation 1?"

3. Provide Resource 5: Sentence Strips 5a – 5c to the student. Indicate and read each Sentence Strip.

a. Indicate Sentence Strip 5a.

SAY	"There were more grey trees in generation 1."

b. Indicate Sentence Strip 5b.

SAY	"There were an equal number of grey and black trees in generation 1."

c. Indicate Sentence Strip 5c.

SAY	"There were more black trees in generation 1."

4.

ASK AGAIN	"Why were there more grey moths than black moths in generation 1?"

5. Allow student to respond and record response.

6. Indicate Sentence Strip 5a.

SAY	"There were more grey trees in generation 1."

7.

SAY	"We are now finished with this activity."

Correct answers are as follows:

1. Which picture represents the moths in generation 4?
    a. Card 4a – More Black Moths: There are five black moths and one grey moth in generation 4.
2. Why were there more grey moths than black moths in generation 1?
    a. Sentence Strip 5a – There were more grey trees in generation 1.

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to predict the number of moths of each color in generation 4 (Card 4a); ***and*** • is unable to identify why there were more grey moths than black moths in generation 1 (Sentence Strip 5a).	The student **does not** demonstrate understanding.	0
Student… • is able to predict the number of moths of each color in generation 4 (Card 4a); ***and*** • is unable to identify why there were more grey moths than black moths in generation 1 (Sentence Strip 5a). **OR** • is unable to predict the number of moths of each color in generation 4 (Card 4a); ***and*** • **after scaffolding,** is able to identify why there were more grey moths than black moths in generation 1 (Sentence Strip 5a).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to predict the number of moths in each color in generation 4 (Card 4a); ***and*** • is able to identify why there were more grey moths than black moths in generation 1 (Sentence Strip 5a).	The student demonstrates understanding independently without scaffolding.	2