



**Connecticut  
Alternate  
Science  
Assessment**

## Grade 5 Performance Tasks

### Earth Science

Storyline 1: Earth Systems

Storyline 2: Natural Resources

### Life Science

Storyline 3: Living Organisms

Storyline 4: Healthy Ecosystems

### Physical Science

Storyline 5: Forces and Motion

Storyline 6: Using Energy Every Day





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# Grade 5 Performance Tasks

## Earth Science

Storyline 1: Earth Systems

Storyline 2: Natural Resources





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Alternate  
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# **Earth Science**

## **Storyline 1: Earth Systems**

**Grade 5 Performance Task**





**Earth Science**  
**Storyline 1: Earth Systems**  
**Grade 5 Performance Task**

**Guiding Questions:** How does the weather change in different seasons? What types of climates are there and how can they be described? How do wind and water help to shape the land?

NGSS Learning Progressions	Grade 5		
	NGSS Standard Performance Expectations	Connecticut Alternate Science Essence Statements	Core Extensions
ESS2.D Weather and Climate	<p>3-ESS2-1 Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.</p> <p>3-ESS2-2 Obtain and combine information to describe climates in different regions of the world.</p>	<p>CTAS-3-ESS2-1 Use and interpret data in tables and graphs to describe typical weather conditions expected during a particular season.</p> <p>CTAS-3-ESS2-2 Use information to describe climates in different regions of the United States.</p>	<ol style="list-style-type: none"> <li>1. Recognize two forms of water (e.g., rain, snow, hail, sleet) that can fall from clouds to Earth. (CTAS-3-ESS2-1)</li> <li>2. Identify key components that describe local weather conditions (i.e., temperature, amount of cloud cover, precipitation, and wind speed). (CTAS-3-ESS2-1)</li> <li>3. From provided temperature and precipitation data, identify the likely seasons. (CTAS-3-ESS2-1)</li> <li>4. From provided data, compare weather conditions between two specific time periods. (CTAS-3-ESS2-1)</li> <li>5. Using provided information, describe the climate in Connecticut. (CTAS-3-ESS2-2)</li> <li>6. From provided data (average temperature and precipitation), compare climates in two regions of the United States (e.g., northeast vs. southwest). (CTAS-3-ESS2-2)</li> <li>7. From provided information about the climate pattern in a region, make a prediction about typical weather conditions in that region. (CTAS-3-ESS2-2)</li> <li>8. Complete a model to describe changes in the shape of a land form due to wind and water. (CTAS-5-ESS2-1)</li> </ol>
ESS2.A Earth Materials and Systems	<p>5-ESS2-1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.</p>	<p>CTAS-5-ESS2-1 Use a model to show how wind and water interact with land and living organisms.</p>	



NGSS Learning Progressions	Grade 5		
	NGSS Standard Performance Expectations	Connecticut Alternate Science Essence Statements	Core Extensions
			9. From provided information, compare the effects of severe weather (e.g., drought, flooding, or hurricane) on land and living organisms. (CTAS-5-ESS2-1)
Appropriate Vocabulary	Rain, snow, cloud, land, wind speed, temperature, degrees, weather, climate, arctic, mild, desert, seasons (spring, summer, fall, winter), drought, wind, precipitation, erosion		



**Earth Science**  
**Storyline 1: Earth Systems**  
**Grade 5 Performance Task**

General Overview:

In this task, students will interpret data on weather and climate, focusing on Connecticut weather patterns. Students will explore the role of wind and water in weather and in shaping and changing landforms.

List of Materials Needed:

*Teacher-Provided Resources:*

There are no Teacher-Provided Resources 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: Cards 1a – 1d
  - Card 1a – snowing
  - Card 1b – windy
  - Card 1c – lightning
  - Card 1d – raining
- Activity 2 Resource 1: Child Outside Poster
- Activity 2 Resource 2: Cards 2a – 2d
  - Card 2a – sunny
  - Card 2b – rainy
  - Card 2c – snowy
  - Card 2d – windy
- Activity 3 Resource 1a: Seasons Weather Data Table Poster
- Activity 3 Resource 1b: Seasons Weather Data Table Poster
- Activity 3 Resource 2: Cards 2a – 2d
  - Card 2a – summer
  - Card 2b – winter
  - Card 2c – spring
  - Card 2d – fall
- Activity 4 Resource 1: Weather Data Table Poster
- Activity 4 Resource 2: Venn Diagram Poster

- Activity 4 Resource 3: Strips 3a – 3c
  - Strip 3a – cold temperature
  - Strip 3b – rainy
  - Strip 3c – high winds
- Activity 5 Resource 1: Cards 1a – 1c
  - Card 1a – Arctic Climate
  - Card 1b – Mild Climate
  - Card 1c – Desert Climate
- Activity 6 Resource 1: Map of U.S. with Florida and Oregon Poster
- Activity 6 Resource 2: Climate Data Table Poster
- Activity 6 Resource 3: T-Chart – Florida and Oregon Poster
- Activity 6 Resource 4: Cards 4a – 4c
  - Card 4a – warmer summers
  - Card 4b – colder winters
  - Card 4c – more rain
- Activity 7 Resource 1: Map of U.S. – Hartford and Tucson Poster
- Activity 7 Resource 2: Data Table – Hartford and Tucson Poster
- Activity 7 Resource 3: Cards 3a – 3c
  - Card 3a – 10 inches
  - Card 3b – 40 inches
  - Card 3c – 72 inches
- Activity 7 Resource 4: Cards 4a – 4c
  - Card 4a – 10°
  - Card 4b – 40°
  - Card 4c – 80°
- Activity 8 Resource 1: Sand Dune Flow Chart Poster
- Activity 8 Resource 2: Cards 2a – 2c
  - Card 2a – wind
  - Card 2b – ice
  - Card 2c – waves
- Activity 8 Resource 3: Strips 3a – 3c
  - Strip 3a – only sand
  - Strip 3b – rocks and sand
  - Strip 3c – plants in sand
- Activity 9 Resource 1: Before and After Drought Poster
- Activity 9 Resource 2: Cards 2a – 2c
  - Card 2a – greener
  - Card 2b – taller
  - Card 2c – wilted



- Activity 9 Resource 3: Sentence Strips 3a – 3c
  - Sentence Strip 3a – dried out
  - Sentence Strip 3b – more plants
  - Sentence Strip 3c – got darker

## ACTIVITY 1

**Essence Statement:** CTAS-3-ESS2-1 Use and interpret data in tables and graphs to describe typical weather conditions expected during a particular season.

**Core Extension 1:** Recognize two forms of water (e.g., rain, snow, hail, sleet) that can fall from clouds to Earth. (CTAS-3-ESS2-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 1 Resource 1: Cards 1a – 1d
  - Card 1a – snowing
  - Card 1b – windy
  - Card 1c – lightning
  - Card 1d – raining

### Steps to Follow:

1. 

<b>SAY</b>	“There are many forms of water on Earth. In this activity, we are going to talk about some forms of water that fall to Earth from the clouds in the sky. We are going to look at pictures of different things that come down from the sky.”
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2. 

<b>ASK</b>	“What is one picture that shows a form of water falling from the sky?”
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3. Provide Resource 1: Cards 1a – 1d to the student. Indicate and describe each Card.
  - a. Indicate Card 1a.
 

<b>SAY</b>	“The first picture shows snow on a cold day.”
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  - b. Indicate Card 1b.
 

<b>SAY</b>	“The second picture shows leaves blowing on a windy day.”
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  - c. Indicate Card 1c.
 

<b>SAY</b>	“The third picture shows lightning striking on a stormy day.”
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  - d. Indicate Card 1d.
 

<b>SAY</b>	“The fourth picture shows rain on a wet day.”
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4. 

<b>ASK AGAIN</b>	“What is one picture that shows a form of water falling from the sky?”
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5. 

	Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
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6. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen answer Card aside.

7. **ASK** “What is another picture that shows a form of water falling from the sky?”
8. Provide remaining Resource 1: Cards 1a – 1d to the student. Indicate and describe each remaining Card.
- a. Indicate Card 1a.
- SAY** “The first picture shows snow on a cold day.”
- b. Indicate Card 1b.
- SAY** “The second picture shows leaves blowing on a windy day.”
- c. Indicate Card 1c.
- SAY** “The third picture shows lightning striking on a stormy day.”
- d. Indicate Card 1d.
- SAY** “The fourth picture shows rain on a wet day.”
9. **ASK AGAIN** “What is another picture that shows a form of water falling from the sky?”
10. Allow student to respond and record response.
11. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen answer Card aside.
12. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

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

<b>SAY</b>	“This is one picture that shows a form of water falling from the sky. Snow is a form of water that falls from the sky.”
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2. **ASK** “What is another picture that shows a form of water falling from the sky?”

3. Provide remaining Resource 1: Cards 1b – 1d to the student. Indicate and describe each remaining Card.

- a. Indicate Card 1b.

<b>SAY</b>	“The second picture shows leaves blowing on a windy day.”
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- b. Indicate Card 1c.

<b>SAY</b>	“The third picture shows lightning striking on a stormy day.”
------------	---

- c. Indicate Card 1d.

<b>SAY</b>	“The fourth picture shows rain on a wet day.”
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4. **ASK AGAIN** “What is another picture that shows a form of water falling from the sky?”

5. Allow student to respond and record response.

6. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen answer Card aside.

7. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. What is one picture that shows a form of water falling from the sky?
  - a. Card 1a – snowing
  - b. Card 1d – raining
2. What is another picture that shows a form of water falling from the sky?
  - a. Card 1a – snowing
  - b. Card 1d – raining



Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify one picture that shows a form of water falling from the sky (Card 1a <b>or</b> Card 1d); <b>and</b></li><li>is unable to identify another picture that shows a form of water falling from the sky (Card 1a <b>or</b> Card 1d).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify one picture that shows a form of water falling from the sky (Card 1a <b>or</b> Card 1d); <b>and</b></li><li>is unable to identify another picture that shows a form of water falling from the sky (Card 1a <b>or</b> Card 1d).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify one picture that shows a form of water falling from the sky (Card 1a <b>or</b> Card 1d); <b>and</b></li><li><b>after scaffolding</b>, is able to identify another picture that shows a form of water falling from the sky (Card 1d).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify one picture that shows a form of water falling from the sky (Card 1a <b>or</b> Card 1d); <b>and</b></li><li>is able to identify another picture that shows a form of water falling from the sky (Card 1a <b>or</b> Card 1d).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 2

**Essence Statement:** CTAS-3-ESS2-1 Use and interpret data in tables and graphs to describe typical weather conditions expected during a particular season.

**Core Extension 2:** Identify key components that describe local weather conditions (e.g., temperature, amount of cloud cover, precipitation, and wind speed). (CTAS-3-ESS2-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 2 Resource 1: Child Outside Poster
- Activity 2 Resource 2: Cards 2a – 2d
  - Card 2a – sunny
  - Card 2b – rainy
  - Card 2c – snowy
  - Card 2d – windy

### Steps to Follow:

1. 

<b>SAY</b>	“In this activity, we are going to talk about weather.”
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2. Display Resource 1: Child Outside Poster for the student.
3. Indicate Resource 1.
 

<b>SAY</b>	“This picture shows a child playing outside. She wears a raincoat ( <i>indicate raincoat</i> ). Her hat blows away ( <i>indicate hat</i> ). There are puddles on the ground ( <i>indicate puddles</i> ). She runs to her house ( <i>indicate house</i> ).”
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4. 

<b>ASK</b>	“What is one word that describes the weather in this picture?”
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5. Provide Resource 2: Cards 2a – 2d to the student. Indicate and read each Card.
  - a. Indicate Card 2a.
 

<b>SAY</b>	“sunny”
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  - b. Indicate Card 2b.
 

<b>SAY</b>	“rainy”
------------	---------
  - c. Indicate Card 2c.
 

<b>SAY</b>	“snowy”
------------	---------
  - d. Indicate Card 2d.
 

<b>SAY</b>	“windy”
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6. 

<b>ASK AGAIN</b>	“What is one word that describes the weather in this picture?”
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7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
8. If the student chose the correct answer, reiterate the student's correct answer. Set chosen answer Card aside.
9. **ASK** "What is another word that describes the weather in this picture?"
10. Provide remaining Resource 2: Cards 2a – 2d to the student. Indicate and read each remaining Card.
- a. Indicate Card 2a.
- SAY** "sunny"
- b. Indicate Card 2b.
- SAY** "rainy"
- c. Indicate Card 2c.
- SAY** "snowy"
- d. Indicate Card 2d.
- SAY** "windy"
11. **ASK AGAIN** "What is another word that describes the weather in this picture?"
12. Allow student to respond and record response.
13. If the student chose the correct answer, reiterate the student's correct answer. Set chosen answer Card aside.
14. **SAY** "We are now finished with this activity."



## Scoring Guidance and Scaffolding

### Scaffolding:

1. Indicate Card 2b.

<b>SAY</b>	“The child wears a raincoat. It is rainy.”
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2. **ASK** “What is another word that describes the weather in this picture?”

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

- a. Indicate Card 2a.

<b>SAY</b>	“sunny”
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- b. Indicate Card 2c.

<b>SAY</b>	“snowy”
------------	---------

- c. Indicate Card 2d.

<b>SAY</b>	“windy”
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4. **ASK** “What is another word that describes the weather in this picture?”

**AGAIN**

5. Allow student to respond and record response.

6. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen answer Card aside.

7. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. What is one word that describes the weather in this picture?
  - a. Card 2b – rainy
  - b. Card 2d – windy
2. What is another word that describes the weather in this picture?
  - a. Card 2b – rainy
  - b. Card 2d – windy



Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify one word that describes the weather in the picture (Card 2b or Card 2d); <b>and</b></li><li>is unable to identify another word that describes the weather in the picture (Card 2b or Card 2d).</li></ul>	<p>The student <b>does not</b> demonstrate understanding.</p>	<p>0</p>
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify one word that describes the weather in the picture (Card 2b or Card 2d); <b>and</b></li><li>is unable to identify another word that describes the weather in the picture (Card 2b or Card 2d).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify one word that describes the weather in the picture (Card 2b or Card 2d); <b>and</b></li><li><b>after scaffolding</b>, is able to identify another word that describes the weather in the picture (Card 2b or Card 2d).</li></ul>	<p>The student demonstrates limited understanding typically requiring additional support through scaffolding.</p>	<p>1</p>
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify one word that describes the weather in the picture (Card 2b or Card 2d); <b>and</b></li><li>is able to identify another word that describes the weather in the picture (Card 2b or Card 2d).</li></ul>	<p>The student demonstrates understanding independently without scaffolding.</p>	<p>2</p>

### ACTIVITY 3

**Essence Statement:** CTAS-3-ESS2-1 Use and interpret data in tables and graphs to describe typical weather conditions expected during a particular season.

**Core Extension 3:** From provided temperature and precipitation data, identify the likely seasons. (CTAS-3-ESS2-1)

**Teacher Notes:**

Collect the following resources for this activity:

- Activity 3 Resource 1a: Seasons Weather Data Table Poster
- Activity 3 Resource 1b: Seasons Weather Data Table Poster
- Activity 3 Resource 2: Cards 2a – 2d
  - Card 2a – summer
  - Card 2b – winter
  - Card 2c – spring
  - Card 2d – fall

*Prior to the administration of this activity, tape Resource 1a: Seasons Weather Data Table Poster and Resource 1b: Seasons Weather Data Table Poster together to make a large data table.*

**Steps to Follow:**

1. **SAY** “In this activity, we are going to use weather descriptions to identify the most likely season in Connecticut.”

2. Display Resource 1a: Seasons Weather Data Table Poster and Resource 1b: Seasons Weather Data Table Poster for the student.

3. Indicate Resource 1a and Resource 1b.

**SAY** “This is a data table of the seasons in Connecticut. The left side of the data table is labeled **‘Weather Description’** (*indicate left side of data table*). The right side of the data table is labeled **‘Season’** (*indicate right side of data table*).”

4. Indicate the first **Weather Description** in the Resource 1 data table.

**SAY** “The temperatures are becoming colder. Today, it is 30 degrees. It is snowing. The ground and trees are covered in snow. There are no leaves on the trees.”

5. **ASK** “What season is likely happening? Place the season Card on the side of the data table labeled **‘Season’**.”

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

a. Indicate Card 2a.

**SAY** “summer”

b. Indicate Card 2b.

<b>SAY</b>	“winter”
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c. Indicate Card 2c.

<b>SAY</b>	“spring”
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d. Indicate Card 2d.

<b>SAY</b>	“fall”
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7. **ASK AGAIN** “What season is likely happening? Place the season Card on the side of the data table labeled ‘**Season**’.”

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

9. If the student chose the correct answer, reiterate the student’s correct answer. Place chosen answer Card in the correct ‘**Season**’ column.

10. Indicate the second **Weather Description** in the Resource 1 data table.

<b>SAY</b>	“The temperatures are becoming warmer. Today, it is 60 degrees. There are a few clouds in the sky. The sun is shining. Light green leaves are beginning to grow on the trees.”
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11. **ASK** “What season is likely happening? Place the season Card on the side of the data table labeled ‘**Season**’.”

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

13. Allow student to respond and record response.

14. If the student chose the correct answer, reiterate the student’s correct answer. Place chosen answer Card in the correct ‘**Season**’ column.

15. Indicate the third **Weather Description** in the Resource 1 data table.

<b>SAY</b>	“The temperatures are hot. Today, it is 80 degrees. The sun is shining. Many dark green leaves are on the trees.”
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16. **ASK** “What season is likely happening? Place the season Card on the side of the data table labeled ‘**Season**’.”
17. Provide remaining Resource 2: Cards 2a – 2d to the student. Indicate and read each remaining Card.
18. Allow student to respond and record response.
19. If the student chose the correct answer, reiterate the student’s correct answer. Place chosen answer Card in the correct ‘**Season**’ column.
20. Indicate the fourth **Weather Description** in the Resource 1 data table.
- SAY** “The temperatures are becoming cooler. Today, it is 50 degrees. It is cold and windy. There are yellow, brown, orange, red, and pink leaves on the trees. Leaves fall from the trees to the ground.”
21. **ASK** “What season is likely happening? Place the season Card on the side of the data table labeled ‘**Season**’.”
22. Provide remaining Resource 2: Cards 2a – 2d to the student. Indicate and read each remaining Card.
23. Allow student to respond and record response.
24. If the student chose the correct answer, reiterate the student’s correct answer. Place chosen answer Card in the correct ‘**Season**’ column.
25. **SAY** “We are now finished with this activity.”

### Scoring Guidance and Scaffolding

#### Scaffolding:

*Note: Optionally, you may ask the student the third question and/or fourth question if the scaffold is applied. However, if you choose to ask the third question and/or fourth question and the student answers the third question and/or fourth question correctly, the student will still receive one point.*

1. After student makes first incorrect attempt, place Card 2b in the **Season** column in the first row of the data table.
2. Indicate the first **Weather Description** in the Resource 1 data table.

<b>SAY</b>	“When the temperature is 30 degrees and it is snowy, it is the winter season (indicate Card 2b).”
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3. Indicate the second **Weather Description** in the Resource 1 data table.

<b>SAY</b>	“The temperatures are becoming warmer. Today, it is 60 degrees. There are a few clouds in the sky. The sun is shining. Light green leaves are beginning to grow on the trees.”
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4. **ASK** “What season is likely happening? Place the season Card on the side of the data table labeled ‘**Season**’.”

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

6. Allow student to respond and record response.

7. If the student chose the correct answer, reiterate the student’s correct answer. Place chosen answer Card in the correct ‘**Season**’ column.

8. **SAY** “We are now finished with this activity.”

#### Correct answers are as follows:

1. The temperatures are becoming colder. Today, it is 30 degrees. It is snowing. The ground and trees are covered in snow. There are no leaves on the trees.
  - a. Card 2b – winter; place Card 2a in first row of data table
2. The temperatures are becoming warmer. Today, it is 60 degrees. There are a few clouds in the sky. The sun is shining. Light green leaves are beginning to grow on the trees.
  - a. Card 2c – spring; place Card 2b in second row of data table
3. The temperatures are hot. Today, it is 80 degrees. The sun is shining. Many dark green leaves are on the trees.
  - a. Card 2a – summer; place Card 2c in third row of data table
4. The temperatures are becoming cooler. Today, it is 50 degrees. It is cold and windy. There are yellow, brown, orange, red, and pink leaves on the trees. Leaves fall from the trees to the ground.
  - a. Card 2d – fall; place Card 2d in fourth row of data table



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to correctly place any season Card in the <b>Season</b> column of the data table.</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to correctly place one, two, or three season Cards in the <b>Season</b> column of the data table.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to correctly place one season Card in the <b>Season</b> column of the data table; <b>and</b></li><li><b>after scaffolding</b>, is able to correctly place at least one season Card in the <b>Season</b> column of the data table.</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to correctly place <b>all</b> four season Cards in the <b>Season</b> column of the data table.</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 4

**Essence Statement:** CTAS-3-ESS2-1 Use and interpret data in tables and graphs to describe typical weather conditions expected during a particular season.

**Core Extension 4:** From provided data, compare weather conditions between two specific time periods. (CTAS-3-ESS2-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 4 Resource 1: Weather Data Table Poster
- Activity 4 Resource 2: Venn Diagram Poster
- Activity 4 Resource 3: Strips 3a – 3c
  - Strip 3a – cold temperature
  - Strip 3b – rainy
  - Strip 3c – high winds

### Steps to Follow:

1. 

<b>SAY</b>	“In this activity, we are going to compare the weather on two different dates.”
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2. Display Resource 1: Weather Data Table Poster for the student.
3. Indicate Resource 1.

<b>SAY</b>	“This is a data table that describes the weather on two different dates. ( <i>Indicate first row of data table.</i> ) On February 5, the temperature was 35 degrees. It was rainy. There were light winds. ( <i>Indicate second row of data table.</i> ) On September 10, the temperature was 73 degrees. It was rainy. There were high winds.”
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4. Display Resource 2: Venn Diagram Poster for the student.
5. Indicate Resource 2.

<b>SAY</b>	“This Venn Diagram is used to compare two things. On the left side of the diagram ( <i>indicate the left side of the diagram</i> ), we will place things that are true only for <b>‘February 5’</b> . On the right side of the diagram ( <i>indicate the right side of the diagram</i> ), we will place only things that are only true for <b>‘September 10’</b> . In the middle of the diagram ( <i>indicate the middle of the diagram</i> ), we will place things that are true for <b>‘Both’</b> February 5 and September 10.”
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6. Provide Resource 3: Strips 3a – 3c to the student.
7. Indicate Strip 3a.

<b>SAY</b>	“This Strip says, ‘cold temperature.’”
<b>ASK</b>	“Where should we put this Strip on the Venn Diagram: under <b>‘February 5’</b> , under <b>‘September 10’</b> , or under <b>‘Both’</b> ?”

8. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
9. If the student chose the correct answer, reiterate the student's correct answer. Place chosen answer Strip in the correct area on the Venn Diagram.
10. Indicate Strip 3b.

<b>SAY</b>	"This Strip says, 'rainy.'"
<b>ASK</b>	"Where should we put this Strip on the Venn Diagram: under ' <b>February 5</b> ', under ' <b>September 10</b> ', or under ' <b>Both</b> '?"

11. Allow student to respond and record response.
12. If the student chose the correct answer, reiterate the student's correct answer. Place chosen answer Strip in the correct area on the Venn Diagram.
13. Indicate Strip 3c.

<b>SAY</b>	"This Strip says, 'high winds.'"
<b>ASK</b>	"Where should we put this Strip on the Venn Diagram: under ' <b>February 5</b> ', under ' <b>September 10</b> ', or under ' <b>Both</b> '?"

14. Allow student to respond and record response.
15. If the student chose the correct answer, reiterate the student's correct answer. Place chosen answer Strip in the correct area on the Venn Diagram.
16. **SAY** "We are now finished with this activity."

## Scoring Guidance and Scaffolding

### Scaffolding:

*Note: Optionally, you may ask the student the third question, "This Strip says, 'high winds.' Where should we put this Strip on the Venn Diagram: under 'February 5', under 'September 10', or under 'Both'?", 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, place Strip 3a under **February 5** on the Venn Diagram.
2. Indicate Strip 3a.

<b>SAY</b>	"There was a cold temperature only on February 5 <sup>th</sup> . We'll place the ' <b>cold temperature</b> ' Strip here ( <i>place Strip 3a under 'February 5' on the Venn Diagram</i> )."
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3. Indicate Strip 3b.

<b>SAY</b>	"This Strip says, 'rainy.'"
<b>ASK</b>	"Where should we put this Strip on the Venn Diagram: under ' <b>February 5</b> ', under ' <b>September 10</b> ', or under ' <b>Both</b> '?"

4. Allow student to respond and record response.
5. If the student chose the correct answer, reiterate the student's correct answer. Place chosen answer Strip in the correct area on the Venn Diagram.
6. 

<b>SAY</b>	"We are now finished with this activity."
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### Correct answers are as follows:

1. This Strip says, "cold temperature." Where should we put this Strip on the Venn Diagram: under "**February 5**", under "**September 10**", or under "**Both**"?
  - a. Strip 3a – cold temperature placed under "**February 5**"
2. This Strip says, "rainy." Where should we put this Strip on the Venn Diagram: under "**February 5**", under "**September 10**", or under "**Both**"?
  - a. Strip 3b – rainy placed under "**Both**"
3. This Strip says, "high winds." Where should we put this Strip on the Venn Diagram: under "**February 5**", under "**September 10**", or under "**Both**"?
  - a. Strip 3c – high winds placed under "**September 10**"



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to correctly place any Strip on the Venn Diagram.</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to correctly place one <b>or</b> two Strip(s) on the Venn Diagram.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to correctly place one Strip on the Venn Diagram; <b>and</b></li><li><b>after scaffolding</b>, is able to correctly place at least one Strip on the Venn Diagram.</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to correctly place all three Strips on the Venn Diagram.</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 5

**Essence Statement:** CTAS-3-ESS2-2 Use information to describe climates in different regions of the United States.

**Core Extension 5:** Using provided information, describe the climate in Connecticut. (CTAS-3-ESS2-2)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 5 Resource 1: Cards 1a – 1c
  - Card 1a – Arctic Climate
  - Card 1b – Mild Climate
  - Card 1c – Desert Climate

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about climate. Climate describes the weather conditions that happen in an area over a long period of time. Here in Connecticut, we have hot summers. It is cold in the winter. It is warm in the spring and cool in the fall. It does rain and snow sometimes in Connecticut.”

2. **ASK** “Which type of climate does Connecticut have?”

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

a. Indicate Card 1a.

**SAY** “This is a picture of an **Arctic Climate**. This climate has long, cold winters and short, cool summers. It is cold enough to snow most of the year and few plants are able to grow.”

b. Indicate Card 1b.

**SAY** “This is a **Mild Climate**. This climate has four seasons including cold winters and warm summers. Spring and fall are mild. There is enough rain for many plants to grow.”

c. Indicate Card 1c.

**SAY** “This is a picture of a **Desert Climate**. This climate is hot and dry most of the year. There is little rain for plants to grow.”

4. **ASK AGAIN** “Which type of climate does Connecticut have?”

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

6. Indicate Card 1b.

**SAY** “Connecticut has a **Mild Climate**.”

7. **SAY** “We are now finished with this activity.”

### Scoring Guidance and Scaffolding

#### Scaffolding:

1. After student makes first incorrect attempt, remove the incorrect Card chosen by the student.

**SAY** “Connecticut does not have a(n) [insert incorrect climate Card chosen by the student].”

2. **ASK AGAIN** “Which type of climate does Connecticut have?”

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

- b. Indicate Card 1b.

**SAY** “This is a **Mild Climate**. This climate has four seasons including cold winters and warm summers. Spring and fall are mild. There is enough rain for many plants to grow.”

- c. Indicate Card 1c **OR** Card 1a.

**SAY** “This is a picture of a **Desert Climate**. This climate is hot and dry most of the year. There is little rain for plants to grow.”

**OR**

**SAY** “This is a picture of an **Arctic Climate**. This climate has long, cold winters and short, cool summers. It is cold enough to snow most of the year and few plants are able to grow.”

4. Allow student to respond and record response.

5. **SAY** “We are now finished with this activity.”

#### The correct answer is as follows:

1. Which type of climate does Connecticut have?  
a. Card 1b – Mild Climate



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to describe the climate of Connecticut (Card 1b).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li><b>after scaffolding</b>, is able to describe the climate of Connecticut (Card 1b).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to describe the climate of Connecticut (Card 1b).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 6

**Essence Statement:** CTAS-3-ESS2-2 Use information to describe climates in different regions of the United States.

**Core Extension 6:** From provided data (average temperature and precipitation), compare climates in two regions of the United States (e.g., northeast vs. southwest). (CTAS-3-ESS2-2)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 6 Resource 1: Map of U.S. with Florida and Oregon Poster
- Activity 6 Resource 2: Climate Data Table Poster
- Activity 6 Resource 3: T-Chart – Florida and Oregon Poster
- Activity 6 Resource 4: Cards 4a – 4c
  - Card 4a – warmer summers
  - Card 4b – colder winters
  - Card 4c – more rain

### Steps to Follow:

1. **SAY** “In this activity, we are going to compare the climate in Florida and the climate in Oregon.”

2. Display Resource 1: Map of U.S with Florida and Oregon Poster for the student.

3. Indicate Resource 1.

**SAY** “This is a map that shows two areas in our country: Florida and Oregon. Connecticut is also shown on this map.”

4. Display Resource 2: Climate Data Table Poster for the student.

5. Indicate Resource 2.

**SAY** “This is a data table that shows climate information about two areas in our country: Florida and Oregon (*indicate ‘Area’ column*). The average summer temperature in Florida is 80 degrees (*indicate Florida ‘Average Summer Temperature’*) and the average summer temperature in Oregon is 58 degrees (*indicate Oregon ‘Average Summer Temperature’*). The average winter temperature in Florida is 66 degrees (*indicate Florida ‘Average Winter Temperature’*) and the average winter temperature in Oregon is 38 degrees (*indicate Oregon ‘Average Winter Temperature’*). The average amount of rain in Florida is 10 inches (*indicate Florida ‘Average Amount of Rain’*) and the average amount of rain in Oregon is 15 inches (*indicate Oregon ‘Average Amount of Rain’*).”

6. Display Resource 3: T-Chart – Florida and Oregon Poster for the student.

7. Indicate Resource 3.

<b>SAY</b>	“This is a T-Chart. The left side of the T-Chart is labeled ‘ <b>Florida</b> ’ and the right side is labeled ‘ <b>Oregon</b> ’. We are going to use this T-Chart to sort statements about each state.”
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8. Provide Resource 4: Cards 4a – 4c to the student.

9. Indicate Card 4a.

<b>SAY</b>	“This Card says, ‘warmer summers’.”
<b>ASK</b>	“Should ‘warmer summers’ be placed under ‘ <b>Florida</b> ’ or under ‘ <b>Oregon</b> ?’”

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

11. If the student chose the correct answer, reiterate the student’s correct answer. Place chosen answer Card in the correct side of the T-Chart.

12. Indicate Card 4b.

<b>SAY</b>	“This Card says, ‘colder winters’.”
<b>ASK</b>	“Should ‘colder winters’ be placed under ‘ <b>Florida</b> ’ or under ‘ <b>Oregon</b> ?’”

13. Allow student to respond and record response.

14. If the student chose the correct answer, reiterate the student’s correct answer. Place chosen answer Card in the correct side of the T-Chart.

15. Indicate Card 4c.

<b>SAY</b>	“This Card says, ‘more rain’.”
<b>ASK</b>	“Should ‘more rain’ be placed under ‘ <b>Florida</b> ’ or under ‘ <b>Oregon</b> ?’”

16. Allow student to respond and record response.

17. If the student chose the correct answer, reiterate the student’s correct answer. Place chosen answer Card in the correct side of the T-Chart.

18. **SAY** “We are now finished with this activity.”

### Scoring Guidance and Scaffolding

#### Scaffolding:

*Note: Optionally, you may ask the student the third question, “Should ‘more rain’ be placed under ‘Florida’ or under ‘Oregon’?”, 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, place Card 4a under “**Florida**” on the T-Chart.
2. Indicate Card 4a.

<b>SAY</b>	“Florida has warmer summers. Let’s place the ‘warmer summers’ Card on the left side of the T-Chart under ‘ <b>Florida</b> ’.”
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3. Indicate Card 4b.

<b>SAY</b>	“This Card says, ‘colder winters’.”
<b>ASK</b>	“Should ‘colder winters’ be placed under ‘ <b>Florida</b> ’ or under ‘ <b>Oregon</b> ’?”

4. Allow student to respond and record response.

5. If the student chose the correct answer, reiterate the student’s correct answer. Place chosen answer Card in the correct side of the T-Chart.

6. 

<b>SAY</b>	“We are now finished with this activity.”
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#### Correct answers are as follows:

1. Should “warmer summers” be placed under “**Florida**” or under “**Oregon**”?
  - a. Card 4a – warmer summers should be placed under Florida
2. Should “colder winters” be placed under “**Florida**” or under “**Oregon**”?
  - a. Card 4b – colder winters should be placed under Oregon
3. Should “more rain” be placed under “**Florida**” or under “**Oregon**”?
  - a. Card 4c – cold rain should be placed under Oregon



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to place one Card on the correct side of the T-Chart.</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to place only one <b>or</b> two Card(s) on the correct side of the T-Chart.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li><b>after scaffolding</b>, is able to place at least one Card on the correct side of the T-Chart.</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to place all three Cards on the correct side of the T-Chart.</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 7

**Essence Statement:** CTAS-3-ESS2-2 Use information to describe climates in different regions of the United States.

**Core Extension 7:** From provided information about the climate pattern in a region, make a prediction about typical weather conditions in that region. (CTAS-3-ESS2-2)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 7 Resource 1: Map of U.S. – Hartford and Tucson Poster
- Activity 7 Resource 2: Data Table – Hartford and Tucson Poster
- Activity 7 Resource 3: Cards 3a – 3c
  - Card 3a – 10 inches
  - Card 3b – 40 inches
  - Card 3c – 72 inches
- Activity 7 Resource 4: Cards 4a – 4c
  - Card 4a – 10°
  - Card 4b – 40°
  - Card 4c – 80°

### Steps to Follow:

1. 

<b>SAY</b>	“In this activity, we are going to talk about the climate in Hartford, Connecticut and the climate in Tucson, Arizona. Based on each climate, we will predict the amount of rain and temperature for each area.”
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2. Display Resource 1: Map of U.S. – Hartford and Tucson Poster for the student.
3. Indicate Resource 1.

<b>SAY</b>	“This is a map showing Hartford, Connecticut ( <i>indicate Hartford</i> ) and Tucson, Arizona ( <i>indicate Tucson</i> ).”
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4. Display Resource 2: Data Table – Hartford and Tucson Poster.
5. Indicate Resource 2.

<b>SAY</b>	“This is a data table that shows information about these two areas in our country: Hartford and Tucson ( <i>indicate ‘Area’ column</i> ). The average summer temperature in Hartford is 60 degrees ( <i>indicate Hartford ‘Average Summer Temperature’</i> ) and the average summer temperature in Tucson is 84 degrees ( <i>indicate Tucson ‘Average Summer Temperature’</i> ). The average winter temperature in Hartford is 40 degrees ( <i>indicate Hartford ‘Average Winter Temperature’</i> ) and the average winter temperature in Tucson is 58 degrees ( <i>indicate Tucson ‘Average Winter Temperature’</i> ). The average amount of rain in Hartford is 44 inches ( <i>indicate Hartford ‘Average Amount of Rain’</i> ) and the average amount of rain in Tucson is 11 inches ( <i>indicate Tucson ‘Average Amount of Rain’</i> ).”
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6. **ASK** “What is the likely amount of rain that the Hartford area will get in the next year?”

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

a. Indicate Card 3a.

**SAY** “10 inches”

b. Indicate Card 3b.

**SAY** “40 inches”

c. Indicate Card 3c.

**SAY** “72 inches”

8. **ASK AGAIN** “What is the likely amount of rain that the Hartford area will get in the next year?”

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

10. Indicate Card 3b.

**SAY** “The Hartford area will likely get 40 inches of rain in the next year.”

11. **ASK** “What is the likely average summer temperature of the Tucson area next year?”

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

a. Indicate Card 4a.

**SAY** “10 degrees”

b. Indicate Card 4b.

**SAY** “40 degrees”

c. Indicate Card 4c.

**SAY** “80 degrees”

13. **ASK AGAIN** “What is the likely average summer temperature of the Tucson area next year?”

14. Allow student to respond and record response.

15. Indicate Card 4c.

<b>SAY</b>	“The Tucson area will likely have an average summer temperature of 80 degrees next year.”
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16. **SAY** “We are now finished with this activity.”

### Scoring Guidance and Scaffolding

#### Scaffolding:

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

<b>SAY</b>	“Based on the data in the data table, Hartford will likely have 40 inches of rain in the next year.”
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2. **ASK** “What is the likely average summer temperature of the Tucson area next year?”

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

a. Indicate Card 4a.

<b>SAY</b>	“10 degrees”
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b. Indicate Card 4b.

<b>SAY</b>	“40 degrees”
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c. Indicate Card 4c.

<b>SAY</b>	“80 degrees”
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4. **ASK AGAIN** “What is the likely average summer temperature of the Tucson area next year?”

5. Allow student to respond and record response.

6. **SAY** “We are now finished with this activity.”

#### Correct answers are as follows:

1. What is the likely amount of rain that the Hartford area will get in the next year?
  - a. Card 3b – 40 inches
2. What is the likely average summer temperature of the Tucson area next year?
  - a. Card 4c – 80 degrees



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to predict the likely amount of rain that the Hartford area will get in the next year (Card 3b); <b>and</b></li><li>is unable to predict the likely average summer temperature of the Tucson area next year (Card 4c).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to predict the likely amount of rain that the Hartford area will get in the next year (Card 3b); <b>and</b></li><li>is unable to predict the likely average summer temperature of the Tucson area next year (Card 4c).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to predict the likely amount of rain that the Hartford area will get in the next year (Card 3b); <b>and</b></li><li><b>after scaffolding</b>, is able to predict the likely average summer temperature of the Tucson area next year (Card 4c).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to predict the likely amount of rain that the Hartford area will get in the next year (Card 3b); <b>and</b></li><li>is able to predict the likely average summer temperature of the Tucson area next year (Card 4c).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 8

**Essence Statement:** CTAS-5-ESS2-1 Use a model to show how wind and water interact with land and living organisms.

**Core Extension 8:** Complete a model to describe changes in the shape of a land form due to wind and water. (CTAS-5-ESS2-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 8 Resource 1: Sand Dune Flow Chart Poster
- Activity 8 Resource 2: Cards 2a – 2c
  - Card 2a – wind
  - Card 2b – ice
  - Card 2c – waves
- Activity 8 Resource 2: Strips 3a – 2c
  - Strip 3a – only sand
  - Strip 3b – rocks and sand
  - Strip 3c – plants in sand

### Steps to Follow:

1. **SAY** “Some beaches have sand dunes. In this activity, we are going to talk about how a sand dune on a beach can change.”

2. Display Resource 1: Sand Dune Flow Chart Poster for the student.

3. Indicate Resource 1.

**SAY** “This is a flow chart. This is a picture of a sand dune (*indicate left box*). This is a blank box (*indicate middle box*). This is the same sand dune, but it is now much taller and the sand dune has moved to the right (*indicate right box*). We are going to figure out what changed this sand dune and place the Card in this blank box (*indicate middle box*).”

4. **ASK** “What likely changed this sand dune?”

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

a. Indicate Card 2a.

**SAY** “wind”

b. Indicate Card 2b.

**SAY** “ice”

c. Indicate Card 2c.

**SAY** “waves”

6. **ASK** “What likely changed this sand dune?”  
**AGAIN**
7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
8. If the student chose the correct answer, reiterate the student’s correct answer. Place Card 2a in the middle box on the Resource 1.
9. Indicate Card 2a.  
**SAY** “Wind changed this stand dune.”
10. Indicate completed Resource 1.  
**SAY** “Moving water or waves can erode land forms.”
11. **ASK** “Which type of dune will be **most** affected by moving water or waves?”
12. Provide Strips 3a – 3c to the student. Indicate and read each Strip.
- a. Indicate Strip 3a.  
**SAY** “a dune with only sand”
- b. Indicate Strip 3b.  
**SAY** “a dune with rocks and sand”
- c. Indicate Strip 3c.  
**SAY** “a dune with plants in the sand”
13. **ASK** “Which type of dune will be **most** affected by moving water or waves?”  
**AGAIN**
14. Allow student to respond and record response.
15. Indicate Strip 3a.  
**SAY** “A dune with only sand will be **most** affected by moving water or waves.”
16. **SAY** “We are now finished with this activity.”



### Scoring Guidance and Scaffolding

#### Scaffolding:

1. Place Card 2a in the middle box on the Resource 1.

2. Indicate Card 2a.

<b>SAY</b>	“Wind changed this sand dune.”
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3. Indicate completed Resource 1.

<b>SAY</b>	“Wind causes the sand dune to grow bigger and move to the right.”
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4. **ASK** “Which type of dune will be **most** affected by moving water or waves?”

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

a. Indicate Strip 2a.

<b>SAY</b>	“a dune with only sand”
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b. Indicate Strip 2b.

<b>SAY</b>	“a dune with rocks and sand”
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c. Indicate Strip 2c.

<b>SAY</b>	“a dune with plants in the sand”
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6. **ASK** “Which type of dune will be **most** affected by moving water or waves?”

**AGAIN**

7. Allow student to respond and record response.

8. Indicate Strip 3a.

<b>SAY</b>	“A dune with only sand will be <b>most</b> affected by moving water or waves.”
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9. **SAY** “We are now finished with this activity.”

#### Correct answers are as follows:

1. What changed this sand dune?

a. Card 2a – wind

2. Which type of dune will be **most** affected by moving water or waves?

a. Strip 3a – a dune with only sand



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to determine what changed this sand dune (Card 2a); <b>and</b></li><li>is unable to predict which type of sand dune will be most affected by moving water or waves (Strip 3a).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to determine what changed this sand dune (Card 2a); <b>and</b></li><li>is unable to predict which type of sand dune will be most affected by moving water or waves (Strip 3a).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to determine what changed this sand dune (Card 2a); <b>and</b></li><li><b>after scaffolding</b>, is able to predict which type of sand dune will be most affected by moving water or waves (Strip 3a).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to determine what changed this sand dune (Card 2a); <b>and</b></li><li>is able to predict which type of sand dune will be most affected by moving water or waves (Strip 3a).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 9

**Essence Statement:** CTAS-5-ESS2-1 Use a model to show how wind and water interact with land and living organisms.

**Core Extension 9:** From provided information, compare the effects of severe weather (e.g., drought, flooding, or hurricane) on land and living organisms. (CTAS-5-ESS2-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 9 Resource 1: Before and After Drought Poster
- Activity 9 Resource 2: Cards 2a – 2c
  - Card 2a – greener
  - Card 2b – taller
  - Card 2c – wilted
- Activity 9 Resource 3: Sentence Strips 3a – 3c
  - Sentence Strip 3a – dried out
  - Sentence Strip 3b – more plants
  - Sentence Strip 3c – got darker

### Steps to Follow:

1. Display Resource 1: Before and After Drought Poster for the student.
2. Indicate Resource 1.

<b>SAY</b>	“These are two pictures of the same field before and after a drought. A drought happens when there is little rain for a long time. Let’s look at the field before the drought ( <i>indicate ‘Field Before Drought’</i> ). There are plants in a field. The plants have bright green leaves. The plants are covering the ground and grow closely together. The soil is wet. Let’s look at the same field after a drought ( <i>indicate ‘Field After Drought’</i> ). The plants received no water for many days. There is only one plant left in the field. The plant has few leaves.”
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3. 

<b>ASK</b>	“How did the drought change the plants?”
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4. Provide Resource 2: Cards 2a – 2c to the student. Indicate and read each Card.

- a. Indicate Card 2a.

<b>SAY</b>	“The plants have greener leaves.”
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- b. Indicate Card 2b.

<b>SAY</b>	“The plants stood taller.”
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- c. Indicate Card 2c.

<b>SAY</b>	“The plants turned brown and wilted.”
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5. **ASK AGAIN** “How did the drought change the plants?”
6. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
7. Indicate Card 2c.
- SAY** “The plants turned brown and wilted.”
8. **ASK** “How did the drought change the soil?”
9. Provide Resource 3: Sentence Strips 3a – 3c to the student. Indicate and read each Sentence Strip.
- a. Indicate Sentence Strip 3a.
- SAY** “The soil dried out.”
- b. Indicate Sentence Strip 3b.
- SAY** “The soil had more plants.”
- c. Indicate Sentence Strip 3c.
- SAY** “The soil got darker.”
10. **ASK AGAIN** “How did the drought change the soil?”
11. Allow student to respond and record response.
12. Indicate Sentence Strip 3a.
- SAY** “The soil dried out.”
13. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

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

<b>SAY</b>	“The plants turned brown and wilted.”
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2. **ASK** “How did the drought change the soil?”

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

- a. Indicate Sentence Strip 3a.

<b>SAY</b>	“The soil dried out.”
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- b. Indicate Sentence Strip 3b.

<b>SAY</b>	“The soil had more plants.”
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- c. Indicate Sentence Strip 3c.

<b>SAY</b>	“The soil got darker.”
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4. **ASK AGAIN** “How did the drought change the soil?”

5. Allow student to respond and record response.

6. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. How did the drought change the plants?
  - a. Card 2c – The plants turned brown and wilted.
2. How did the drought change the soil?
  - a. Sentence Strip 3a – The soil dried out.



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify how the drought changed the plants (Card 2c); <b>and</b></li><li>is unable to identify how the drought changed the soil (Sentence Strip 3a).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to identify how the drought changed the plants (Card 2c); <b>and</b></li><li>is unable to identify how the drought changed the soil (Sentence Strip 3a).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify how the drought changed the plants (Card 2c); <b>and</b></li><li><b>after scaffolding</b>, is able to identify how the drought changed the soil (Sentence Strip 3a).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to identify how the drought changed the plants (Card 2c); <b>and</b></li><li>is able to identify how the drought changed the soil (Sentence Strip 3a).</li></ul>	The student demonstrates understanding independently without scaffolding.	2





Connecticut  
Alternate  
Science  
Assessment

# **Earth Science**

## **Storyline 2: Natural Resources**

**Grade 5 Performance Task**





**Earth Science**  
**Storyline 2: Natural Resources**  
**Grade 5 Performance Task**

**Guiding Questions:** From where do we get energy? From where do we get fresh water? How do we protect our natural resources?

NGSS Learning Progressions	Grade 5		
	NGSS Standard Performance Expectations	Connecticut Alternate Science Essence Statements	Core Extensions
ESS2.C The Roles of Water in Earth’s Surface Processes	5-ESS2-2 Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.	CTAS-5-ESS2-2 Interpret data to compare the relative amounts of fresh and salt water on Earth, and use maps to show their locations in various reservoirs (lakes, rivers, and oceans).	<ol style="list-style-type: none"> <li>1. Distinguish between fresh and salt water and which is needed by humans and other organisms for survival. (CTAS-5-ESS2-2)</li> <li>2. Locate sources of freshwater (a lake and river) and saltwater (ocean) shown on a map. (CTAS-5-ESS2-2)</li> <li>3. From a simple graphic, compare the relative amounts of fresh and salt water in various reservoirs. (CTAS-5-ESS2-2)</li> <li>4. Describe two ways that humans use energy sources (e.g., generate electricity, heat homes, power a car). (CTAS-4-ESS3-1)</li> <li>5. Complete a causal chain explaining two ways that non-renewable energy sources (coal, oil, natural gas) affect the environment. (CTAS-4-ESS3-1)</li> <li>6. Complete a causal chain explaining two ways that renewable energy sources (wind, water, solar) affect the environment. (CTAS-4-ESS3-1)</li> </ol>
ESS3.A Natural Resources	4-ESS3-1 Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.	CTAS-4-ESS3-1 Use information to describe renewable (wind, water, and solar) and non-renewable (coal, oil, and natural gas) sources of energy and how their uses affect the environment.	
ESS3.C Human Impacts on Earth Systems	5-ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth’s resources and environment.	CTAS-5-ESS3-1 Use information from multiple sources to describe ways people can protect our natural resources (water, air, land).	



NGSS Learning Progressions	Grade 5		
	NGSS Standard Performance Expectations	Connecticut Alternate Science Essence Statements	Core Extensions
			7. From provided information, identify a human activity that affects Earth’s natural resources. (CTAS-5-ESS3-1) 8. From provided information, identify a way to protect Earth’s natural resources. (CTAS-5-ESS3-1) 9. Given a scenario and background information, describe one positive and one negative effect of how a group of people can help to protect their community’s natural resources. (CTAS-5-ESS3-1)
Appropriate Vocabulary	Natural resources, fresh water, salt water, lakes, rivers, oceans, energy, fuel, electricity, heat, recycling, renewable, non-renewable		



**Earth Science**  
**Storyline 2: Natural Resources**  
**Grade 5 Performance Task**

General Overview:

Water is found in many places on Earth. Most of the water on Earth is salt water found mainly in oceans and seas. Fresh water is found in glaciers, lakes, ponds and rivers. Water is a natural resource that needs to be protected. Energy and fuels are derived from natural resources and their uses affect the environment. Natural resources are found throughout Earth and need to be protected.

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 1a: Fresh Water Box Poster
- Activity 1 Resource 1b: Salt Water Box Poster
- Activity 1 Resource 2: Cards 2a – 2c
  - Card 2a – dog
  - Card 2b – jellyfish
  - Card 2c – human
- Activity 1 Resource 3: Faucet Poster
- Activity 1 Resource 4: Card 4a and Card 4b
  - Card 4a – fresh water
  - Card 4b – salt water
- Activity 2 Resource 1: Map of Connecticut Poster
- Activity 2 Resource 2: Strips 2a – 2d
  - Strip 2a – salt water
  - Strip 2b – fresh water
  - Strip 2c – fresh water
  - Strip 2d – salt water
- Activity 3 Resource 1: Water on Earth Poster

- Activity 3 Resource 2: Cards 2a – 2c
  - Card 2a – more
  - Card 2b – less
  - Card 2c – same
- Activity 4 Resource 1: Cards 1a – 1d
  - Card 1a – vacuum cleaner
  - Card 1b – swimming
  - Card 1c – playground
  - Card 1d – video game
- Activity 5 Resource 1: Coal Power Plant Poster
- Activity 5 Resource 2: Strips 2a – 2d
  - Strip 2a – sunlight brighter
  - Strip 2b – forms clouds
  - Strip 2c – pollutes water
  - Strip 2d – hard to breathe
- Activity 6 Resource 1: Wind Energy Poster
- Activity 6 Resource 2: Sentence Strips 2a – 2d
  - Sentence Strip 2a – no pollution
  - Sentence Strip 2b – renewable energy
  - Sentence Strip 2c – change habitats
  - Sentence Strip 2d – loud noises
- Activity 7 Resource 1: Pond Cleanup Poster
- Activity 7 Resource 2: Strips 2a – 2d
  - Strip 2a – stay clear
  - Strip 2b – fish to be healthy
  - Strip 2c – different color
  - Strip 2d – pond smaller
- Activity 8 Resource 1: Path to Park Poster 1
- Activity 8 Resource 2: Path to Park Poster 2
- Activity 8 Resource 3: Cards 3a – 3c
  - Card 3a – remove rocks and soil
  - Card 3b – add rocks and soil
  - Card 3c – plant grass and bushes
- Activity 8 Resource 4: Strips 4a – 4c
  - Strip 4a – change the color
  - Strip 4b – stop moving
  - Strip 4c – different sizes
- Activity 9 Resource 1: Sentence Strips 1a – 1c
  - Sentence Strip 1a – washing away
  - Sentence Strip 1b – different food
  - Sentence Strip 1c – smell sweet

- Activity 9 Resource 2: Sentence Strips 2a – 2c
  - Sentence Strip 2a – fly away
  - Sentence Strip 2b – eat fruit
  - Sentence Strip 2c – find water

## ACTIVITY 1

**Essence Statement:** CTAS-5-ESS2-2 Interpret data to compare the relative amounts of fresh and salt water on Earth, and use maps to show their locations in various reservoirs (lakes, rivers, and oceans).

**Core Extension 1:** Distinguish between fresh and salt water and which is needed by humans and other organisms for survival. (CTAS-5-ESS2-2)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 1 Resource 1a: Fresh Water Box Poster
- Activity 1 Resource 1b: Salt Water Box Poster
- Activity 1 Resource 2: Cards 2a – 2c
  - Card 2a – dog
  - Card 2b – jellyfish
  - Card 2c – human
- Activity 1 Resource 3: Faucet Poster
- Activity 1 Resource 4: Card 4a and Card 4b
  - Card 4a – fresh water
  - Card 4b – salt water

### Steps to Follow:

1. **SAY** “Earth has both fresh and salt water. In this activity, we are going to talk about the differences between fresh and salt water.”

2. Display Resource 1a: Fresh Water Box Poster for the student.

3. Display Resource 1b: Salt Water Box Poster for the student.

4. Indicate Resource 1a and Resource 1b.

**SAY** “Here are two boxes. This box says, ‘**Fresh Water**’ (*indicate Resource 1a*) and this box says, ‘**Salt Water**’ (*indicate Resource 1b*).”

5. **SAY** “Most living things need water to survive. Some living things need different types of water to survive. We are going to move each living thing to the type of water it needs.”

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

a. Indicate Card 2a.

**SAY** “dog”

b. Indicate Card 2b.

**SAY** “jellyfish”

c. Indicate Card 2c.

**SAY** “human”

7. **SAY AGAIN** “We are going to move each of these cards to the correct type of water the organism needs.”

8. Indicate Card 2a.

**ASK** “Does a **dog** need fresh water (*indicate Resource 1a*) or salt water (*indicate Resource 1b*) to survive?”

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

10. Move Card 2a to Resource 1a.

**SAY** “A **dog** needs fresh water to survive.”

11. Indicate Card 2b.

**ASK** “Does a **jellyfish** need fresh water (*indicate Resource 1a*) or salt water (*indicate Resource 1b*) to survive?”

12. Allow student to respond and record response.

13. Move Card 2b to Resource 1b.

**SAY** “A **jellyfish** needs salt water to survive.”

14. Indicate Card 2c.

**ASK** “Does a **human** need fresh water (*indicate Resource 1a*) or salt water (*indicate Resource 1b*) to survive?”

15. Allow student to respond and record response.

16. Move Card 2c to Resource 1a.

**SAY** “A **human** needs fresh water to survive.”

17. Display Resource 3: Faucet Poster for the student.

18. Indicate Resource 3.

**SAY** “This is a faucet in a sink. We use the water from the faucet to brush our teeth.”

19. **ASK** “Is the water in our faucet fresh water or salt water?”

20. Provide Resource 4: Card 4a and Card 4b to the student. Indicate and read each Card.

a. Indicate Card 4a.

<b>SAY</b>	“fresh water”
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b. Indicate Card 4b.

<b>SAY</b>	“salt water”
------------	--------------

21. Allow student to respond and record response.

22. Indicate Card 4a.

<b>SAY</b>	“The water in our faucet is fresh water.”
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23. **SAY** “We are now finished with this activity.”

### Scoring Guidance and Scaffolding

#### Scaffolding:

*Note: Optionally, you may ask the student the third question and/or fourth question, “Does a human need fresh water or salt water to survive?” and “Is the water in our faucet fresh water or salt water?”, if the scaffold is applied. However, if you choose to ask the third question and/or fourth question and the student answers the third question and/or fourth question correctly, the student will still receive one point.*

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

<b>SAY</b>	“A <b>dog</b> needs fresh water to survive. Let’s place the dog in the fresh water box (move Card 2a to Resource 1a).”
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2. Indicate Card 2b.

<b>ASK</b>	“Does a <b>jellyfish</b> need fresh water (indicate Resource 1a) or salt water (indicate Resource 1b) to survive?”
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3. Allow student to respond and record response.

4. Move Card 2b to Resource 1b.

<b>SAY</b>	“A <b>jellyfish</b> needs salt water to survive.”
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5. **SAY** “We are now finished with this activity.”

**Correct answers are as follows:**

1. Does a **dog** need fresh water or salt water to survive?
  - a. Card 2a/Resource 1a – Fresh Water
2. Does a **jellyfish** need fresh water or salt water to survive?
  - a. Card 2b/Resource 1b – Salt Water
3. Does a **human** need fresh water or salt water to survive?
  - a. Card 2c/Resource 1a – Fresh Water
4. Is the water in our faucet fresh water or salt water?
  - a. Card 4a – fresh water

Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"> <li>• gives NO response.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify that both dogs and humans (Card 2a <b>and</b> Card 2c) need fresh water; <b>and</b></li> <li>• is unable to identify that jellyfish (Card 2b) need salt water; <b>and</b></li> <li>• is unable to identify that the water in our faucet is fresh water (Card 4a).</li> </ul>	<p>The student <b>does not</b> demonstrate understanding.</p>	<p>0</p>
<p>Student...</p> <ul style="list-style-type: none"> <li>• is able to identify that either dogs and/or humans (Cards 2a <b>and/or</b> 2c) need fresh water; <b>and</b></li> <li>• is able to identify that jellyfish (Card 2b) need salt water; <b>and</b></li> <li>• is unable to identify that the water in our faucet is fresh water (Card 4a).</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify that either dogs or humans (Card 2a <b>or</b> Card 2c) need fresh water; <b>and</b></li> <li>• <b>after scaffolding</b>, is able to identify that jellyfish (Card 2b) need salt water.</li> </ul>	<p>The student demonstrates limited understanding typically requiring additional support through scaffolding.</p>	<p>1</p>
<p>Student...</p> <ul style="list-style-type: none"> <li>• is able to identify that both dogs and humans (Cards 2a <b>and</b> 2c) need fresh water; <b>and</b></li> <li>• is able to identify that jellyfish (Card 2b) need salt water; <b>and</b></li> <li>• is able to identify that the water in our faucet is fresh water (Card 4a).</li> </ul>	<p>The student demonstrates understanding independently without scaffolding.</p>	<p>2</p>

## ACTIVITY 2

**Essence Statement:** CTAS-5-ESS2-2 Interpret data to compare the relative amounts of fresh and salt water on Earth, and use maps to show their locations in various reservoirs (lakes, rivers, and oceans).

**Core Extension 2:** Locate sources of freshwater (a lake and river) and saltwater (ocean) shown on a map. (CTAS-5-ESS2-2)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 2 Resource 1: Map of Connecticut Poster
- Activity 2 Resource 2: Strips 2a – 2d
  - Strip 2a – salt water
  - Strip 2b – fresh water
  - Strip 2c – fresh water
  - Strip 2d – salt water

### Steps to Follow:

1. 

<b>SAY</b>	“In this activity, we are going to use a map to identify places where water is found in Connecticut as salt water or fresh water.”
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2. Display Resource 1: Map of Connecticut Poster for the student.

3. Indicate Resource 1.

<b>SAY</b>	“This is a map of Connecticut. Here are places where water is found in and near Connecticut: Candlewood Lake ( <i>indicate Candlewood Lake</i> ), the Connecticut River ( <i>indicate the Connecticut River</i> ), and the Long Island Sound that leads to the Atlantic Ocean ( <i>indicate the Long Island Sound [Atlantic Ocean]</i> ).”
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4. 

<b>SAY</b>	“We are going to use labels to label the empty boxes next to each place where water is found in and near Connecticut as salt water or fresh water.”
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5. Provide Resource 2: Strips 2a – 2d to the student. Indicate and read each Strip.

a. Indicate Strip 2a.

<b>SAY</b>	“salt water”
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b. Indicate Strip 2b.

<b>SAY</b>	“fresh water”
------------	---------------

c. Indicate Strip 2c.

<b>SAY</b>	“fresh water”
------------	---------------

d. Indicate Strip 2d.

<b>SAY</b>	“salt water”
------------	--------------

6. Indicate Candlewood Lake on Resource 1.

<b>ASK</b>	“Does Candlewood Lake have fresh water or salt water?”
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7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

8. Indicate Strip 2c.

<b>SAY</b>	“Candlewood Lake has <b>fresh water.</b> ”
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9. Move Strip 2c to Candlewood Lake.

10. Indicate the Long Island Sound (Atlantic Ocean) on Resource 1.

<b>ASK</b>	“Does the Long Island Sound have fresh water or salt water?”
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11. Allow student to respond and record response.

12. Indicate Strip 2a.

<b>SAY</b>	“The Long Island Sound has <b>salt water.</b> ”
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13. Move Strip 2a to the Long Island Sound.

14. Indicate the Connecticut River on Resource 1.

<b>ASK</b>	“Does the Connecticut River have fresh water or salt water?”
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15. Allow student to respond and record response.

16. Indicate Strip 2b.

<b>SAY</b>	“The Connecticut River has <b>fresh water.</b> ”
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17. Move Strip 2b to the Connecticut River.

<b>SAY</b>	“We are now finished with this activity.”
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**Scoring Guidance and Scaffolding**

**Scaffolding:**

*Note: Optionally, you may ask the student the third question, “Does the Connecticut River have fresh water or salt water?”, 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 Candlewood Lake on Resource 1.

<b>SAY</b>	“This is a lake. Lakes have fresh water. Let’s label Candlewood Lake <b>fresh water.</b> ”
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2. Move Strip 2c to Candlewood Lake.
3. Indicate the Long Island Sound (Atlantic Ocean) on Resource 1.

<b>ASK</b>	“Does the Long Island Sound have fresh water or salt water?”
------------	--

4. Allow student to respond and record response.

5. Indicate Strip 2a.

<b>SAY</b>	“The Long Island Sound has <b>salt water.</b> ”
------------	---

6. Move Strip 2a to the Long Island Sound.

7. **SAY** “We are now finished with this activity.”

**Correct answers are as follows:**

1. Does Candlewood Lake have fresh water or salt water?
  - a. Strip 2c – Candlewood Lake has **fresh water.**
2. Does the Long Island Sound have fresh water or salt water?
  - a. Strip 2a – The Long Island Sound has **salt water.**
3. Does the Connecticut River have fresh water or salt water?
  - a. Strip 2b – The Connecticut River has **fresh water.**

<b>Content Guidance</b>	<b>Rating</b>	<b>Score</b>
Student... <ul style="list-style-type: none"> <li>• gives NO response.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify <b>any</b> of the bodies of water as fresh water or salt water.</li> </ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"> <li>• <b>with or without scaffolding</b>, is able to identify one <b>or</b> two bodies of water as fresh water or salt water.</li> </ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"> <li>• is able to identify <b>all</b> bodies of water correctly as fresh water or salt water.</li> </ul>	The student demonstrates understanding independently without scaffolding.	2

### ACTIVITY 3

**Essence Statement:** CTAS-5-ESS2-2 Interpret data to compare the relative amounts of fresh and salt water on Earth, and use maps to show their locations in various reservoirs (lakes, rivers, and oceans).

**Core Extension 3:** From a simple graphic, compare the relative amounts of fresh and salt water in various reservoirs. (CTAS-5-ESS2-2)

**Teacher Notes:**

Collect the following resources for this activity:

- Activity 3 Resource 1: Water on Earth Poster
- Activity 3 Resource 2: Cards 2a – 2c
  - Card 2a – more
  - Card 2b – less
  - Card 2c – same

**Steps to Follow:**

1. **SAY** “In this activity, we are going to use a circle graph to compare the amount of fresh water and the amount of salt water on Earth.”

2. Display Resource 1: Water on Earth Poster for the student.

3. Indicate Resource 1.

**SAY** “Water is found in many places on Earth. This circle graph is titled ‘**Water on Earth**’ and represents all of the water on Earth (*indicate Resource 1*). The dotted area of the graph shows how much fresh water is on Earth (*indicate dotted area on graph*). The lined area of the graph shows how much salt water there is on Earth (*indicate lined area on graph*).”

4. **ASK** “Based on this circle graph, which statement is true?”

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

a. Indicate Card 2a.

**SAY** “There is **more** fresh water than salt water.”

b. Indicate Card 2b.

**SAY** “There is **less** fresh water than salt water.”

c. Indicate Card 2c.

**SAY** “There is the **same** amount of fresh water and salt water.”

6. **ASK AGAIN** “Based on this circle graph, which statement is true?”

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

8. Indicate Card 2b.

**SAY** "There is **less** fresh water than salt water."

9. **SAY** "We are now finished with this activity."

### Scoring Guidance and Scaffolding

#### Scaffolding:

1. After student makes first incorrect attempt, remove Card 2c.

**SAY** "The statement 'There is the **same** amount of fresh water and salt water' is not true."

2. **ASK AGAIN** "Based on this circle graph, which statement is true?"

3. Provide Resource 2: Card 2a and Card 2b to the student. Indicate and describe each Card.

a. Indicate Card 2a.

**SAY** "There is **more** fresh water than salt water."

b. Indicate Card 2b.

**SAY** "There is **less** fresh water than salt water."

4. Allow student to respond and record response.

5. Indicate Card 2b.

**SAY** "There is **less** fresh water than salt water."

6. **SAY** "We are now finished with this activity."

#### Correct answer is as follows:

1. Based on this circle graph, which statement is true?

a. Card 2b – There is **less** fresh water than salt water.



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response;</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to compare the amount of fresh water to the amount of salt water (Card 2b).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li><b>after scaffolding</b>, is able to compare the amount of fresh water to the amount of salt water (Card 2b).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to compare the amount of fresh water to the amount of salt water (Card 2b).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 4

**Essence Statement:** CTAS-4-ESS3-1 Use information to describe renewable (wind, water, and solar) and non-renewable (coal, oil, and natural gas) sources of energy and how their uses affect the environment.

**Core Extension 4:** Describe two ways that humans use energy sources (e.g., generate electricity, heat homes, power a car). (CTAS-4-ESS3-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 4 Resource 1: Cards 1a – 1d
  - Card 1a – vacuum cleaner
  - Card 1b – swimming
  - Card 1c – playground
  - Card 1d – video game

### Steps to Follow:

1. 

<b>SAY</b>	“In this activity, we are going to talk about how people use electricity. People use electricity when they do certain activities. Here are some activities: using a vacuum cleaner, swimming in a lake, playing at a playground, and playing a video game. People use electricity when they do two of these activities.”
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2. 

<b>ASK</b>	“What is an activity that uses electricity?”
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3. Provide Resource 1: Cards 1a – 1d to the student. Indicate and describe each Card.

a. Indicate Card 1a.

<b>SAY</b>	“using a <b>vacuum cleaner</b> ”
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b. Indicate Card 1b.

<b>SAY</b>	“ <b>swimming</b> in a lake”
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c. Indicate Card 1c.

<b>SAY</b>	“playing at the <b>playground</b> ”
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d. Indicate Card 1d.

<b>SAY</b>	“playing a <b>video game</b> ”
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4. 

<b>ASK</b> <b>AGAIN</b>	“What is an activity that uses electricity?”
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5. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

6. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen answer Card aside.

7. 

<b>ASK</b>	“What is another activity that uses electricity?”
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8. Provide remaining Resource 1: Cards 1a – 1d to the student. Indicate and describe each remaining Card.
- a. Indicate Card 1a.  

<b>SAY</b>	“using a <b>vacuum cleaner</b> ”
------------	----------------------------------
- b. Indicate Card 1b.  

<b>SAY</b>	“ <b>swimming</b> in a lake”
------------	------------------------------
- c. Indicate Card 1c.  

<b>SAY</b>	“playing at the <b>playground</b> ”
------------	-------------------------------------
- d. Indicate Card 1d.  

<b>SAY</b>	“playing a <b>video game</b> ”
------------	--------------------------------
9. 

<b>ASK</b> <b>AGAIN</b>	“What is another activity that uses electricity?”
----------------------------	---
10. 

Allow student to respond and record response.
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11. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen answer Card aside.
12. 

<b>SAY</b>	“We are now finished with this activity.”
------------	---

### Scoring Guidance and Scaffolding

#### Scaffolding:

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

<b>SAY</b>	“People use electricity while they are using a vacuum cleaner.”
------------	---
2. 

<b>ASK</b>	“What is another activity that uses electricity?”
------------	---
3. Provide remaining Resource 1: Cards 1a – 1d to the student. Indicate and describe each remaining Card.
- a. Indicate Card 1a.  

<b>SAY</b>	“using a <b>vacuum cleaner</b> ”
------------	----------------------------------

b. Indicate Card 1b.

<b>SAY</b>	“swimming in a lake”
------------	----------------------

c. Indicate Card 1c.

<b>SAY</b>	“playing at the <b>playground</b> ”
------------	-------------------------------------

d. Indicate Card 1d.

<b>SAY</b>	“playing a <b>video game</b> ”
------------	--------------------------------

4. **ASK** “What is another activity that uses electricity?”  
**AGAIN**

5. Allow student to respond and record response.

6. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen answer Card aside.

7. **SAY** “We are now finished with this activity.”

**Correct answers as follows:**

1. What is an activity that uses electricity?
  - a. Card 1a – using a **vacuum cleaner**
  - b. Card 1d – playing a **video game**
2. What is another activity that uses electricity?
  - a. Card 1a – using a **vacuum cleaner**
  - b. Card 1d – playing a **video game**

Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"> <li>• gives NO response.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify that people use electricity while using a vacuum cleaner (Card 1a); <b>and</b></li> <li>• is unable to identify that people use electricity while playing a video game (Card 1d).</li> </ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"> <li>• is able to identify that people use electricity while using a vacuum cleaner (Card 1a); <b>and</b></li> <li>• is unable to identify that people use electricity while playing a video game (Card 1d).</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify that people use electricity while using a vacuum cleaner (Card 1a); <b>and</b></li> <li>• <b>after scaffolding</b>, is able to identify that people use electricity while playing a video game (Card 1d).</li> </ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"> <li>• is able to identify that people use electricity while using a vacuum cleaner (Card 1a); <b>and</b></li> <li>• is able to identify that people use electricity while playing a video game (Card 1d).</li> </ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 5

**Essence Statement:** CTAS-4-ESS3-1 Use information to describe renewable (wind, water, and solar) and non-renewable (coal, oil, and natural gas) sources of energy and how their uses affect the environment.

**Core Extension 5:** Complete a causal chain explaining two ways that non-renewable energy sources (coal, oil, natural gas) affect the environment. (CTAS-4-ESS3-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 5 Resource 1: Coal Power Plant Poster
- Activity 5 Resource 2: Strips 2a – 2d
  - Strip 2a – sunlight brighter
  - Strip 2b – forms clouds
  - Strip 2c – pollutes water
  - Strip 2d – hard to breathe

### Steps to Follow:

1. **SAY** “In this activity, we will talk about how non-renewable resources, such as coal, affect the environment.”

2. Display Resource 1: Coal Power Plant Poster for the student.

3. Indicate Resource 1.

**SAY** “Some sources of energy come from non-renewable resources. Coal is a non-renewable resource. This coal power plant is near a lake (*indicate power plant*). The power plant burns coal to make electricity. The power plant also produces lots of smoke (*indicate smoke*).”

4. **ASK** “What is one way that the smoke from the coal plant harms the fish?”

5. Provide Resource 2: Strips 2a – 2d to the student. Indicate and describe each Strip.

a. Indicate Strip 2a.

**SAY** “makes the **sunlight brighter**”

b. Indicate Strip 2b.

**SAY** “**forms clouds** in the sky”

c. Indicate Strip 2c.

**SAY** “**pollutes the water** in the lake”

d. Indicate Strip 2d.

**SAY** “makes it **hard to breathe** the air”

6. **ASK AGAIN** “What is one way that the smoke from the coal plant harms the fish?”

7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
8. Indicate Strip 2c.
- |            |   |
|------------|---|
| <b>SAY</b> | “The smoke from the coal plant harms the fish because it <b>pollutes</b> the <b>water</b> in the lake.” |
|------------|---|
9. **ASK** “What is one way that the smoke from the coal plant harms the man fishing?”
10. Provide remaining Resource 2: Strips 2a – 2d to the student. Indicate and read each remaining Strip.
- a. Indicate Strip 2a.
- |            |                                       |
|------------|---------------------------------------|
| <b>SAY</b> | “makes the <b>sunlight brighter</b> ” |
|------------|---------------------------------------|
- b. Indicate Strip 2b.
- |            |                                   |
|------------|-----------------------------------|
| <b>SAY</b> | “ <b>forms clouds</b> in the sky” |
|------------|-----------------------------------|
- c. Indicate Strip 2d.
- |            |   |
|------------|---|
| <b>SAY</b> | “makes it <b>hard to breathe</b> the air” |
|------------|---|
11. **ASK AGAIN** “What is one way that the smoke from the coal plant harms the man fishing?”
12. Allow student to respond and record response.
13. Indicate Strip 2d.
- |            |   |
|------------|---|
| <b>SAY</b> | “The smoke from the coal plant harms the man fishing because it makes it <b>hard to breathe</b> the air.” |
|------------|---|
14. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

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

<b>SAY</b>	“The coal-burning power plant produces smoke. The smoke can mix with rain and pollutes the lake water. The smoke from the coal plant harms the fish because it <b>pollutes</b> the <b>water</b> in the lake.”
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2. 

<b>ASK</b>	“What is one way that the smoke from the coal plant harms the man fishing?”
------------	---

3. Provide remaining Resource 2: Strips 2a – 2d to the student. Indicate and read each remaining Strip.

- a. Indicate Strip 2a.

<b>SAY</b>	“makes the <b>sunlight brighter</b> ”
------------	---------------------------------------

- b. Indicate Strip 2b.

<b>SAY</b>	“ <b>forms clouds</b> in the sky”
------------	-----------------------------------

- c. Indicate Strip 2d.

<b>SAY</b>	“makes it <b>hard to breathe</b> the air”
------------	---

4. 

<b>ASK AGAIN</b>	“What is one way that the smoke from the coal plant harms the man fishing?”
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5. Allow student to respond and record response.

6. Indicate Strip 2d.

<b>SAY</b>	“The smoke from the coal plant harms the man fishing because it <b>hard to breathe</b> the air.”
------------	--

7. 

<b>SAY</b>	“We are now finished with this activity.”
------------	---

### Correct answers are as follows:

1. What is one way that the smoke from the coal plant harms the fish?
  - a. Strip 2c – **pollutes** the **water** in the lake
2. What is one way that the smoke from the coal plant harms the man fishing?
  - a. Strip 2d – makes it **hard to breathe** the air



Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify that the smoke harms the fish because it pollutes the water in the lake (Strip 2c); <b>and</b></li><li>is unable to identify that smoke harms the man fishing because it makes it hard to breathe the air (Strip 2d).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify that the smoke harms the fish because it pollutes the water in the lake (Strip 2c); <b>and</b></li><li>is unable to identify that smoke harms the man fishing because it makes it hard to breathe the air (Strip 2d).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify that the smoke harms the fish because it pollutes the water in the lake (Strip 2c); <b>and</b></li><li><b>after scaffolding</b>, is able to identify that smoke harms the man fishing because it makes it hard to breathe the air (Strip 2d).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify that the smoke harms the fish because it pollutes the water in the lake (Strip 2c); <b>and</b></li><li>is able to identify that smoke harms the man fishing because it makes it hard to breathe the air (Strip 2d).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 6

**Essence Statement:** CTAS-4-ESS3-1 Use information to describe renewable (wind, water, and solar) and non-renewable (coal, oil, and natural gas) sources of energy and how their uses affect the environment.

**Core Extension 6:** Complete a causal chain explaining two ways that renewable energy sources (wind, water, solar) affect the environment. (CTAS-4-ESS3-1)

### Teacher Notes:

- Activity 6 Resource 1: Wind Energy Poster
- Activity 6 Resource 2: Sentence Strips 2a – 2d
  - Sentence Strip 2a – no pollution
  - Sentence Strip 2b – renewable energy
  - Sentence Strip 2c – change habitats
  - Sentence Strip 2d – loud noises

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about how wind energy affects the environment.”

2. Display Resource 1: Wind Energy Poster for the student.

3. Indicate Resource 1.

**SAY** “There are different forms of energy. Renewable energy can be produced in a short period of time. Wind is one form of renewable energy. People build large wind turbines (*indicate the wind turbines*). Electricity is produced when the wind turns the blades on the wind turbines. Here are some facts about Wind Energy: it makes no pollution; it is a renewable energy source; and it can change the habitats of some animals.”

4. **ASK** “What is one way that wind energy helps the environment?”

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

a. Indicate Sentence Strip 2a.

**SAY** “It makes no pollution.”

b. Indicate Sentence Strip 2b.

**SAY** “It is a renewable energy source.”

c. Indicate Sentence Strip 2c.

**SAY** “It can change the habitats of some animals.”

d. Indicate Sentence Strip 2d.

**SAY** “It produces loud noises when the blades turn.”

6. **ASK** “What is one way that wind energy helps the environment?”  
**AGAIN**
7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
8. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen Sentence Strip aside.
9. **ASK** “What is another way that wind energy helps the environment?”
10. Provide remaining Resource 2: Sentence Strips 2a – 2d to the student. Indicate and read each remaining Sentence Strip.
- a. Indicate Sentence Strip 2a.  
**SAY** “It makes no pollution.”
- b. Indicate Sentence Strip 2b.  
**SAY** “It is a renewable energy source.”
- c. Indicate Sentence Strip 2c.  
**SAY** “It can change the habitats of some animals.”
- d. Indicate Sentence Strip 2d.  
**SAY** “It produces loud noises when the blades turn.”
11. **ASK** “What is another way that wind energy helps the environment?”  
**AGAIN**
12. Allow student to respond and record response.
13. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen Sentence Strip aside.
14. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

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

<b>SAY</b>	“Wind energy makes no pollution so it helps the environment.”
------------	---

2. **ASK** “What is another way that wind energy helps the environment?”

3. Provide remaining Resource 2: Sentence Strips 2b – 2d to the student. Indicate and read each remaining Sentence Strip.

- a. Indicate Sentence Strip 2b.

<b>SAY</b>	“It is a renewable energy source.”
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- b. Indicate Sentence Strip 2c.

<b>SAY</b>	“It can change the habitats of some animals.”
------------	---

- c. Indicate Sentence Strip 2d.

<b>SAY</b>	“It produces loud noises when the blades turn.”
------------	---

4. **ASK AGAIN** “What is another way that wind energy helps the environment?”

5. Allow student to respond and record response.

6. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen Sentence Strip aside.

7. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. What is one way that wind energy helps the environment?
  - a. Sentence Strip 2a – It makes no pollution.
  - b. Sentence Strip 2b – It is a renewable energy source.
2. What is another way that wind energy helps the environment?
  - a. Sentence Strip 2a – It makes no pollution.
  - b. Sentence Strip 2b – It is a renewable energy source.



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify one way wind energy helps the environment (Sentence Strip 2a <b>or</b> Sentence Strip 2b); <b>and</b></li><li>is unable to identify another way that wind energy helps the environment (Sentence Strip 2a <b>or</b> Sentence Strip 2b).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to identify one way wind energy helps the environment (Sentence Strip 2a <b>or</b> Sentence Strip 2b); <b>and</b></li><li>is unable to identify another way that wind energy helps the environment (Sentence Strip 2a <b>or</b> Sentence Strip 2b).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify one way wind energy helps the environment (Sentence Strip 2a <b>or</b> Sentence Strip 2b); <b>and</b></li><li><b>after scaffolding</b>, is able to identify another way wind energy helps the environment (Sentence Strip 2b).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to identify one way wind energy helps the environment (Sentence Strip 2a <b>or</b> Sentence Strip 2b); <b>and</b></li><li>is able to identify another way wind energy helps the environment (Sentence Strip 2a <b>or</b> Sentence Strip 2b).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 7

**Essence Statement:** CTAS-5-ESS3-1 Use information from multiple sources to describe ways people can protect our natural resources (water, air, land).

**Core Extension 7:** From provided information, identify a human activity that affects Earth’s natural resources. (CTAS-5-ESS3-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 7 Resource 1: Pond Cleanup Poster
- Activity 7 Resource 2: Strips 2a – 2d
  - Strip 2a – stay clear
  - Strip 2b – fish to be healthy
  - Strip 2c – different color
  - Strip 2d – pond smaller

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about natural resources. Earth has many natural resources. Natural resources are things like water, plants, animals, air, and soil. People need to protect these natural resources.”

2. Display Resource 1: Pond Cleanup Poster for the student.

3. Indicate Resource 1.

**SAY** “This is a picture of some friends cleaning up a pond in their neighborhood. They remove old tires, bottles, and cans from the water. They pick up bottles, cans, and other trash from the banks of the pond.”

4. **ASK** “What is one reason why picking up the trash is good for the pond environment?”

5. Provide Resource 2: Strips 2a – 2d to the student. Indicate and read each Strip.

a. Indicate Strip 2a.

**SAY** “because it helps the water to stay clear”

b. Indicate Strip 2b.

**SAY** “because it helps the fish to be healthy”

c. Indicate Strip 2c.

**SAY** “because it makes the pond a different color”

d. Indicate Strip 2d.

**SAY** “because it makes the pond smaller”

6. **ASK AGAIN** “What is one reason why picking up the trash is good for the pond environment?”
7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
8. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen Strip aside.
9. **ASK** “What is another reason why picking up the trash is good for the pond environment?”
10. Provide remaining Resource 2: Strips 2a – 2d to the student. Indicate and read each remaining Strip.
- a. Indicate Strip 2a.
- SAY** “because it helps the water to stay clear”
- b. Indicate Strip 2b.
- SAY** “because it helps the fish to be healthy”
- c. Indicate Strip 2c.
- SAY** “because it makes the pond a different color”
- d. Indicate Strip 2d.
- SAY** “because it makes the pond smaller”
11. **ASK AGAIN** “What is another reason why picking up the trash is good for the pond environment?”
12. Allow student to respond and record response.
13. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen Strip aside.
14. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

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

<b>SAY</b>	“Picking up trash is good for the pond environment because it helps the water to stay clear.”
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2. **ASK** “What is another reason why picking up the trash is good for the pond environment?”

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

- b. Indicate Strip 2b.

<b>SAY</b>	“because it helps the fish to be healthy”
------------	---

- c. Indicate Strip 2c.

<b>SAY</b>	“because it makes the pond a different color”
------------	---

- d. Indicate Strip 2d.

<b>SAY</b>	“because it makes the pond smaller”
------------	-------------------------------------

4. **ASK AGAIN** “What is another reason why picking up the trash is good for the pond environment?”

5. Allow student to respond and record response.

6. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen Strip aside.

7. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. What is one reason why is picking up the trash is good for the pond environment?
  - a. Strip 2a – because it helps the water to stay clear

**OR**

  - b. Strip 2b – because it helps the fish to be healthy
2. What is another reason why is picking up the trash is good for the pond environment?
  - a. Strip 2a – because it helps the water to stay clear

**OR**

  - b. Strip 2b – because it helps the fish to be healthy

Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"> <li>• gives NO response.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify one reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b); <b>and</b></li> <li>• is unable to identify another reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b).</li> </ul>	<p>The student <b>does not</b> demonstrate understanding.</p>	<p>0</p>
<p>Student...</p> <ul style="list-style-type: none"> <li>• is able to identify one reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b); <b>and</b></li> <li>• is unable to identify another reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b).</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify one reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b); <b>and</b></li> <li>• <b>after scaffolding</b>, is able to identify another reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b).</li> </ul>	<p>The student demonstrates limited understanding typically requiring additional support through scaffolding.</p>	<p>1</p>
<p>Student...</p> <ul style="list-style-type: none"> <li>• is able to identify one reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b); <b>and</b></li> <li>• is able to identify another reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b).</li> </ul>	<p>The student demonstrates understanding independently without scaffolding.</p>	<p>2</p>

## ACTIVITY 8

**Essence Statement:** CTAS-5-ESS3-1 Use information from multiple sources to describe ways people can protect our natural resources (water, air, land).

**Core Extension 8:** From provided information, identify a way to protect Earth’s natural resources. (CTAS-5-ESS3-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 8 Resource 1: Path to Park Poster 1
- Activity 8 Resource 2: Path to Park Poster 2
- Activity 8 Resource 3: Cards 3a – 3c
  - Card 3a – remove rocks and soil
  - Card 3b – add rocks and soil
  - Card 3c – plant grass and bushes
- Activity 8 Resource 4: Strips 4a – 4c
  - Strip 4a – change the color
  - Strip 4b – stop moving
  - Strip 4c – different sizes

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about how we can protect Earth’s natural resources.”

2. Display Resource 1: Path to Park Poster 1 for the student.

3. Indicate Resource 1.

**SAY** “A new park was built in town. The path leading to the park was just right for Sarah and Zack’s wheelchairs.”

4. Display Resource 2: Path to Park Poster 2 for the student.

5. Indicate Resource 2.

**SAY** “A heavy rainstorm fell at the park. Sarah and Zack wanted to go back to the park. Sarah and Zack could not move their wheelchairs down the path. The rocks and soil from the hill blocked their path.”

6. **ASK** “What is one idea that would keep the rocks and soil from blocking the path when it rains?”

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

a. Indicate Card 3a.

**SAY** “remove rocks and soil from the path”

b. Indicate Card 3b.

<b>SAY</b>	“add rocks and soil to the hill”
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c. Indicate Card 3c.

<b>SAY</b>	“plant grass and bushes on the hill”
------------	--------------------------------------

8. **ASK** “What is one idea that would keep the rocks and soil from blocking the path  
**AGAIN** when it rains?”

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

10. Indicate Card 3c.

<b>SAY</b>	“Planting grass and bushes on the hill will keep rocks and soil from blocking the path.”
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11. **ASK** “Why does planting grass and bushes on the hill keep rocks and soil from blocking the path?”

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

a. Indicate Strip 4a.

<b>SAY</b>	“Because the plants <b>change the color of the rocks and soil.</b> ”
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b. Indicate Strip 4b.

<b>SAY</b>	“Because the plant roots <b>stop the rocks and soil from moving.</b> ”
------------	--

c. Indicate Strip 4c.

<b>SAY</b>	“Because the plants <b>make the rocks and soil different sizes.</b> ”
------------	---

13. **ASK** “Why does planting grass and bushes on the hill keep rocks and soil from blocking the path?”  
**AGAIN**

14. Allow student to respond and record response.

15. Indicate Strip 4b.

<b>SAY</b>	“Because the plant roots <b>stop the rocks and soil from moving.</b> ”
------------	--

16. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

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

<b>SAY</b>	“Planting grass and bushes on the hill will keep the rocks and soil from blocking the path.”
------------	--

2. **ASK** “Why does planting grass and bushes on the hill keep rocks and soil from blocking the path?”

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

- a. Indicate Strip 4a.

<b>SAY</b>	“Because the plants <b>change the color of the rocks and soil.</b> ”
------------	--

- b. Indicate Strip 4b.

<b>SAY</b>	“Because the plant roots <b>stop the rocks and soil from moving.</b> ”
------------	--

- c. Indicate Strip 4c.

<b>SAY</b>	“Because the plants <b>make the rocks and soil different sizes.</b> ”
------------	---

4. **ASK AGAIN** “Why does planting grass and bushes on the hill keep rocks and soil from blocking the path?”

5. Allow student to respond and record response.

6. Indicate Strip 4b.

<b>SAY</b>	“Because the plant roots <b>stop the rocks and soil from moving.</b> ”
------------	--

7. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. What is one idea that would help keep the rocks and soil from blocking the path when it rains?
  - a. Card 3c – plant grass and bushes on the hill
2. Why does planting grass and bushes on the hill keep rocks and soil from blocking the path?
  - a. Strip 4b – Because the plant roots **stop the rocks and soil from moving.**

Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"> <li>• gives NO response.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify that planting grass and bushes on the hill keeps the rocks and soil from blocking the path when it rains (Card 3c); <b>and</b></li> <li>• is unable to identify that plant roots keep the rocks and soil from moving (Strip 4b).</li> </ul>	<p>The student <b>does not</b> demonstrate understanding.</p>	<p>0</p>
<p>Student...</p> <ul style="list-style-type: none"> <li>• is able to identify that planting grass and bushes on the hill prevents the rocks and soil from blocking the path when it rains (Card 3c); <b>and</b></li> <li>• is unable to identify that plant roots keep the rocks and soil from moving (Strip 4b).</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify that planting grass and bushes on the hill prevents the rocks and soil from blocking the path when it rains (Card 3c); <b>and</b></li> <li>• <b>after scaffolding</b>, is able to identify that plant roots keep the rocks and soil from moving (Strip 4b).</li> </ul>	<p>The student demonstrates limited understanding typically requiring additional support through scaffolding.</p>	<p>1</p>
<p>Student...</p> <ul style="list-style-type: none"> <li>• is able to identify that planting grass and bushes on the hill prevents the rocks and soil from blocking the path when it rains (Card 3c); <b>and</b></li> <li>• is able to identify that plant roots keep the rocks and soil from moving (Strip 4b).</li> </ul>	<p>The student demonstrates understanding independently without scaffolding.</p>	<p>2</p>

## ACTIVITY 9

**Essence Statement:** CTAS-5-ESS3-1 Use information from multiple sources to describe ways people can protect our natural resources (water, air, land).

**Core Extension 9:** Given a scenario and background information, describe one positive and one negative effect of how a group of people can help to protect their community’s natural resources. (CTAS-5-ESS3-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 9 Resource 1: Sentence Strips 1a – 1c
  - Sentence Strip 1a – washing away
  - Sentence Strip 1b – different food
  - Sentence Strip 1c – smell sweet
- Activity 9 Resource 2: Sentence Strips 2a – 2c
  - Sentence Strip 2a – fly away
  - Sentence Strip 2b – eat fruit
  - Sentence Strip 2c – find water

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about a forest that needs to be replanted. The forest used to have many animals living here. The animals depended on the tall pine trees in the forest for food and shelter. People decide to plant fruit trees in this forest. The fruit trees produce different food than the pine trees.”

2. **ASK** “How does planting the fruit trees **help** protect the land in the forest?”

3. Provide Resource 1: Sentence Strips 1a – 1c. Indicate and read each Sentence Strip.

a. Indicate Sentence Strip 1a.

**SAY** “They prevent the soil from washing away.”

b. Indicate Sentence Strip 1b.

**SAY** “They produce different food.”

c. Indicate Sentence Strip 1c.

**SAY** “They help the forest smell sweet.”

4. **ASK AGAIN** “How does planting the fruit trees **help** protect the land in the forest?”

5. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
6. Indicate Sentence Strip 1a.
 

<b>SAY</b>	“They prevent the soil from washing away.”
------------	--
7.
 

<b>ASK</b>	“How does planting the fruit trees <b>not help</b> the animals in the forest?”
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8. Provide Resource 2: Sentence Strips 2a – 2c to the student. Indicate and read each Sentence Strip.
  - a. Indicate Sentence Strip 2a.
 

<b>SAY</b>	“Some animals are not able to fly away.”
------------	--
  - b. Indicate Sentence Strip 2b.
 

<b>SAY</b>	“Some animals are not able to eat the fruit.”
------------	---
  - c. Indicate Sentence Strip 2c.
 

<b>SAY</b>	“Some animals are not able to find water.”
------------	--
9.
 

<b>ASK AGAIN</b>	“How does planting the fruit trees <b>not help</b> the animals in the forest?”
----------------------	--
10. Allow student to respond and record response.
11. Indicate Sentence Strip 2b.
 

<b>SAY</b>	“Some animals are not able to eat the fruit.”
------------	---
12.
 

<b>SAY</b>	“We are now finished with this activity.”
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### Scoring Guidance and Scaffolding

#### Scaffolding:

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

<b>SAY</b>	“The fruit trees roots prevent soil from washing away.”
------------	---

2. **ASK** “How does planting the fruit trees **not help** the animals in the forest?”

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

- a. Indicate Sentence Strip 2a.

<b>SAY</b>	“Some animals are not able to fly away.”
------------	--

- b. Indicate Sentence Strip 2b.

<b>SAY</b>	“Some animals are not able to eat the fruit.”
------------	---

- c. Indicate Sentence Strip 2c.

<b>SAY</b>	“Some animals are not able to find water.”
------------	--

4. **ASK AGAIN** “How does planting the fruit trees **not help** the animals in the forest?”

5. Allow student to respond and record response.

6. Indicate Sentence Strip 2b.

<b>SAY</b>	“Some animals are not able to eat the fruit.”
------------	---

7. **SAY** “We are now finished with this activity.”

#### Correct answers are as follows:

1. How does planting the fruit trees **help** protect the land in the forest?
  - a. Sentence Strip 1a – They prevent the soil from washing away.
2. How does planting the fruit trees **not help** the animals in the forest?
  - a. Sentence Strip 2b – Some animals are not able to eat the fruit.

Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"> <li>• gives NO response.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify that planting fruit trees helps protect the land in the forest because it prevents the soil from washing away (Sentence Strip 1a); <b>and</b></li> <li>• is unable to identify that planting fruit trees does not help the animals in the forest because some animals are not able to eat the fruit (Sentence Strip 2b).</li> </ul>	<p>The student <b>does not</b> demonstrate understanding.</p>	<p>0</p>
<p>Student...</p> <ul style="list-style-type: none"> <li>• is able to identify that planting fruit trees helps protect the land in the forest because it prevents the soil from washing away (Sentence Strip 1a); <b>and</b></li> <li>• is unable to identify that planting fruit trees does not help the animals in the forest because some animals are not able to eat the fruit (Sentence Strip 2b).</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify that planting fruit trees helps protect the land in the forest because it prevents the soil from washing away (Sentence Strip 1a); <b>and</b></li> <li>• <b>after scaffolding</b>, is able to identify that planting fruit trees does not help the animals in the forest because some animals are not able to eat the fruit (Sentence Strip 2b).</li> </ul>	<p>The student demonstrates limited understanding typically requiring additional support through scaffolding.</p>	<p>1</p>
<p>Student...</p> <ul style="list-style-type: none"> <li>• is able to identify that planting fruit trees helps protect the land in the forest because it prevents the soil from washing away (Sentence Strip 1a); <b>and</b></li> <li>• is able to identify that planting fruit trees does not help the animals in the forest because some animals are not able to eat the fruit (Sentence Strip 2b).</li> </ul>	<p>The student demonstrates understanding independently without scaffolding.</p>	<p>2</p>





**Connecticut  
Alternate  
Science  
Assessment**

# Grade 5 Performance Tasks

## Life Science

Storyline 3: Living Organisms

Storyline 4: Healthy Ecosystems





Connecticut  
Alternate  
Science  
Assessment

# **Life Science**

## Storyline 3: Living Organisms

Grade 5 Performance Task





**Life Science**  
**Storyline 3: Living Organisms**  
**Grade 5 Performance Task**

**Guiding Questions:** What features do plants and animals have that allow them to survive? What life stages do living things go through over time?

NGSS Learning Progressions	Grade 5		
	NGSS Standard Performance Expectations	Connecticut Alternate Science Essence Statements	Core Extensions
LS1.A Structure and Function	4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	CTAS-4-LS1-1 Make and support a claim that plants and animals have structures that function to support survival, growth, and behavior.	<ol style="list-style-type: none"> <li>1. Identify a structure (part) of a plant or an animal that supports survival. (CTAS-4-LS1-1)</li> <li>2. Match one structure (part) of a plant or an animal to its function (e.g., wings help a bird to fly). (CTAS-4-LS1-1)</li> <li>3. Identify key stages (i.e., birth, growth, reproduction, death) of a plant or animal's life cycle. (CTAS-3-LS1-1)</li> </ol>
LS1.B Growth and Development of Organisms	3-LS1-1 Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.	CTAS-3-LS1-1 Compare simple models to describe the similarities and differences in the life cycle stages (birth, growth, reproduction, and death) of common organisms.	<ol style="list-style-type: none"> <li>4. Compare and contrast the life cycles of two plants or two animals to identify one similarity and one difference. (CTAS-3-LS1-1)</li> <li>5. Make a claim about a structure that supports the survival or growth of a plant or an animal (e.g., stem of a plant transports water or food/nutrients to the plant; water and nutrients/food allow plant to survive; stem is thick on a sunflower; thick stem allows sunflower to grow tall). (CTAS-4-LS1-1)</li> </ol>
Appropriate Vocabulary	Structures of common organisms (e.g., leaves, roots, thorns, fur, claws, etc.), birth, growth, reproduction, life cycle stages of common organisms (e.g., seed, egg, pupa, larva, caterpillar, adult, etc.), environment, function, survival		



**Life Science**  
**Storyline 3: Living Organisms**  
**Grade 5 Performance Task**

General Overview:

Students will complete a series of activities focused on familiar plants and animals. Students will evaluate plant and/or animal characteristics, sometimes considering life cycle stages to better understand the effects on survival, growth, and behaviors.

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 1a: Field Mouse Poster
- Activity 1 Resource 1b: Fox Poster
- Activity 1 Resource 2: Cards 2a – 2c
  - Card 2a – ears
  - Card 2b – tail
  - Card 2c – fur
- Activity 2 Resource 1a: Giraffe Poster
- Activity 2 Resource 1b: Giraffe in its Environment Poster
- Activity 2 Resource 2: Cards 2a – 2c
  - Card 2a – large ears
  - Card 2b – long neck
  - Card 2c – brown spots
- Activity 3 Resource 1: Plant Life Cycle Poster
- Activity 3 Resource 2: Cards 2a – 2c
  - Card 2a – Reproduction Stage
  - Card 2b – Sprout Stage
  - Card 2c – Growth Stage
- Activity 4 Resource 1: Life Cycle of a Chicken Poster
- Activity 4 Resource 2: Life Cycle of a Butterfly Poster



- Activity 4 Resource 3: Cards 3a – 3c
  - Card 3a – Larva Stage
  - Card 3b – Egg Stage
  - Card 3c – Pupa Stage
- Activity 4 Resource 4: Cards 4a – 4c
  - Card 4a – Egg Stage
  - Card 4b – Adult Stage
  - Card 4c – Larva Stage
- Activity 5 Resource 1: Statement 1 Poster
- Activity 5 Resource 2: Cards 2a – 2c
  - Card 2a – seeds
  - Card 2b – roots
  - Card 2c – petals
- Activity 5 Resource 3: Statement 2 Poster
- Activity 5 Resource 4: Cards 4a – 4c
  - Card 4a – pollen
  - Card 4b – leaves
  - Card 4c – stems

## ACTIVITY 1

**Essence Statement:** CTAS-4-LS1-1 Make and support a claim that plants and animals have structures that function to support survival, growth, and behavior.

**Core Extension 1:** Identify a structure (part) of a plant or an animal that supports survival. (CTAS-4-LS1-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 1 Resource 1a: Field Mouse Poster
- Activity 1 Resource 1b: Fox Poster
- Activity 1 Resource 2: Cards 2a – 2c
  - Card 2a – ears
  - Card 2b – tail
  - Card 2c – fur

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about the parts of a mouse that help the mouse to survive.”

2. Display Resource 1a: Field Mouse Poster for the student.

3. Indicate Resource 1a.

**SAY** “Here is a mouse that lives in a field. This mouse has big ears (*indicate mouse’s big ears*), thick fur (*indicate mouse’s fur*) and a long tail (*indicate mouse’s tail*).”

4. Display Resource 1b: Fox Poster for the student.

5. Indicate Resource 1b.

**SAY** “Here is a fox. This fox eats mice.”

6. **ASK** “Which part of the mouse helps the mouse to know when a fox is near?”

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

a. Indicate Card 2a.

**SAY** “ears”

b. Indicate Card 2b.

**SAY** “tail”

c. Indicate Card 2c.

**SAY** “fur”

8. **ASK** AGAIN “Which part of the mouse helps the mouse to know when a fox is near?”
9. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
10. Indicate Card 2a.
- SAY** “The mouse’s ears help the mouse to know when a fox is near.”
11. **ASK** “Which part of the mouse helps the mouse to stay warm?”
12. Provide remaining Resource 2: Card 2b and Card 2c to the student. Indicate and read each remaining Card.
- a. Indicate Card 2b.
- SAY** “tail”
- b. Indicate Card 2c.
- SAY** “fur”
13. **ASK** AGAIN “Which part of the mouse helps the mouse to stay warm?”
14. Allow student to respond and record response.
15. Indicate Card 2c.
- SAY** “The mouse’s fur helps the mouse to stay warm.”
16. **SAY** “We are now finished with this activity.”



### Scoring Guidance and Scaffolding

#### Scaffolding:

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

<b>SAY</b>	“The mouse’s ears help the mouse to know when a fox is near. The mouse can hear the fox coming.”
------------	--

2. **ASK** “Which part of the mouse helps the mouse to stay warm?”

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

- a. Indicate Card 2b.

<b>SAY</b>	“tail”
------------	--------

- b. Indicate Card 2c.

<b>SAY</b>	“fur”
------------	-------

4. **ASK** “Which part of the mouse helps the mouse to stay warm?”

<b>AGAIN</b>	
--------------	--

5. Allow student to respond and record response.

6. Indicate Card 2c.

<b>SAY</b>	“The mouse’s fur helps the mouse to stay warm.”
------------	---

7. **SAY** “We are now finished with this activity.”

#### Correct answers are as follows:

1. Which part of the mouse helps the mouse to know when a fox is near?
  - a. Card 2a – ears
2. Which part of the mouse helps the mouse to stay warm?
  - a. Card 2c – fur



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the part of a mouse that helps the mouse know when a fox is near (Card 2a); <b>and</b></li><li>is unable to identify the part of a mouse that helps the mouse stay warm (Card 2c).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to identify the part of a mouse that helps the mouse know when a fox is near (Card 2a); <b>and</b></li><li>is unable to identify the part of a mouse that helps the mouse stay warm (Card 2c).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the part of a mouse that helps the mouse to know when a fox is near (Card 2a); <b>and</b></li><li><b>after scaffolding</b>, is able to identify the part of a mouse that helps the mouse to stay warm (Card 2c).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to identify the part of a mouse that helps the mouse to know when a fox is near (Card 2a); <b>and</b></li><li>is able to identify the part of a mouse that helps the mouse to stay warm (Card 2c).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 2

**Essence Statement:** CTAS-4-LS1-1 Make and support a claim that plants and animals have structures that function to support survival, growth, and behavior.

**Core Extension 2:** Match one structure (part) of a plant or an animal to its function (e.g., wings help a bird to fly). (CTAS-4-LS1-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 2 Resource 1a: Giraffe Poster
- Activity 2 Resource 1b: Giraffe in its Environment Poster
- Activity 2 Resource 2: Cards 2a – 2c
  - Card 2a – large ears
  - Card 2b – long neck
  - Card 2c – brown spots

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about the parts of a giraffe. We will talk about how the functions of those parts help the giraffe in its environment.”

2. Display Resource 1a: Giraffe Poster for the student.

3. Indicate Resource 1a.

**SAY** “This is a giraffe. The giraffe has a long neck (*indicate the giraffe’s neck*), brown spots (*indicate giraffe’s spots*), and large ears (*indicate giraffe’s ears*).”

4. Display Resource 1b: Giraffe in its Environment Poster for student.

5. Indicate Resource 1b.

**SAY** “This is the giraffe in its environment.”

6. **ASK** “What part of the giraffe’s body helps it to reach the leaves on a tall tree?”

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

a. Indicate Card 2a.

**SAY** “large ears”

b. Indicate Card 2b.

**SAY** “long neck”

c. Indicate Card 2c.

**SAY** “brown spots”

8. **ASK AGAIN** “What part of the giraffe’s body helps it to reach the leaves on a tall tree?”

9. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
10. Indicate Card 2b.
- |            |  |
|------------|--|
| <b>SAY</b> | “The giraffe’s long neck helps it to reach the leaves on a tall tree.” |
|------------|--|
11. **ASK** “What part of the giraffe’s body helps it blend into its environment?”
12. Provide remaining Resource 2: Card 2a and Card 2c to the student. Indicate and read each remaining Card.
- a. Indicate Card 2a.
- |            |              |
|------------|--------------|
| <b>SAY</b> | “large ears” |
|------------|--------------|
- b. Indicate Card 2c.
- |            |               |
|------------|---------------|
| <b>SAY</b> | “brown spots” |
|------------|---------------|
13. **ASK AGAIN** “What part of the giraffe’s body helps it blend into its environment?”
14. Allow student to respond and record response.
15. Indicate Card 2c.
- |            |   |
|------------|---|
| <b>SAY</b> | “The giraffe’s brown spots help it to blend in with its environment.” |
|------------|---|
16. **SAY** “We are now finished with this activity.”

### Scoring Guidance and Scaffolding

#### Scaffolding:

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

<b>SAY</b>	“The giraffe’s long neck helps it to reach the leaves on a tall tree.”
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2. **ASK** “What part of the giraffe’s body helps it blend into its environment?”

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

- a. Indicate Card 2a.

<b>SAY</b>	“large ears”
------------	--------------

- b. Indicate Card 2c.

<b>SAY</b>	“brown spots”
------------	---------------

4. **ASK AGAIN** “What part of the giraffe’s body helps it blend into its environment?”

5. Allow student to respond and record response.

6. Indicate Card 2c.

<b>SAY</b>	“The giraffe’s brown spots help it to blend in with its environment.”
------------	---

7. **SAY** “We are now finished with this activity.”

#### Correct answers are as follows:

1. What part of the giraffe’s body helps it to reach the leaves on a tall tree?
  - a. Card 2b – long neck
2. What part of the giraffe’s body helps it blend into its environment?
  - a. Card 2c – brown spots



Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the part of the giraffe's body that helps it to reach the leaves on a tall tree (Card 2b); <b>and</b></li><li>is unable to identify the part of the giraffe's body that helps it to blend in with its environment (Card 2c).</li></ul>	<p>The student <b>does not</b> demonstrate understanding.</p>	0
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify the part of the giraffe's body that helps it to reach the leaves on a tall tree (Card 2b); <b>and</b></li><li>is unable to identify the part of the giraffe's body that helps it to blend in with its environment (Card 2c).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the part of the giraffe's body that helps it to reach the leaves on a tall tree (Card 2b); <b>and</b></li><li><b>after scaffolding</b>, is able to identify the part of the giraffe's body that helps it to blend in with its environment (Card 2c).</li></ul>	<p>The student demonstrates limited understanding typically requiring additional support through scaffolding.</p>	1
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify the part of the giraffe's body that helps it to reach the leaves on a tall tree (Card 2b); <b>and</b></li><li>is able to identify the part of the giraffe's body that helps it to blend in with its environment (Card 2c).</li></ul>	<p>The student demonstrates understanding independently without scaffolding.</p>	2

### ACTIVITY 3

**Essence Statement:** CTAS-3-LS1-1 Compare simple models to describe the similarities and differences in the life cycle stages (birth, growth, reproduction, and death) of common organisms.

**Core Extension 3:** Identify key stages (i.e., birth, growth, reproduction, death) of a plant or animal’s life cycle. (CTAS-3-LS1-1)

**Teacher Notes:**

Collect the following resources for this activity:

- Activity 3 Resource 1: Plant Life Cycle Poster
- Activity 3 Resource 2: Cards 2a – 2c
  - Card 2a – Reproduction Stage
  - Card 2b – Sprout Stage
  - Card 2c – Growth Stage

**Steps to Follow:**

1. 

<b>SAY</b>	“In this activity, we are going to talk about the life cycle of a plant.”
------------	---
2. Display Resource 1: Plant Life Cycle Poster for the student.
3. Indicate Resource 1.
 

<b>SAY</b>	“Here is the life cycle of a plant. The plant’s life cycle begins as a seed ( <i>indicate Seeds Stage</i> ). The seed is planted and watered. Then, the seed sprouts and a root begins to grow ( <i>indicate Sprout Stage</i> ). Next, the plant begins to grow a stem and leaves ( <i>indicate Growth Stage</i> ). Then, a flower opens and makes seeds ( <i>indicate Reproduction Stage</i> ). The seeds fall to the ground ( <i>indicate seeds falling</i> ), as the flower dies ( <i>indicate Death Stage</i> ). The seeds will become new plants ( <i>indicate Seeds Stage</i> ).”
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4. 

<b>ASK</b>	“In which stage of the plant life cycle does the plant make seeds?”
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5. Provide Resource 2: Cards 2a – 2c to the student. Indicate and read each Card.
  - a. Indicate Card 2a.
 

<b>SAY</b>	“Reproduction Stage”
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  - b. Indicate Card 2b.
 

<b>SAY</b>	“Sprout Stage”
------------	----------------
  - c. Indicate Card 2c.
 

<b>SAY</b>	“Growth Stage”
------------	----------------
6. 

<b>ASK AGAIN</b>	“In which stage of the plant life cycle does the plant make seeds?”
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7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
8. Indicate Card 2a.
- |            |  |
|------------|--|
| <b>SAY</b> | “The plant makes seeds during the Reproduction Stage of the plant life cycle.” |
|------------|--|
9. **ASK** “In which stage of the plant life cycle does the plant **begin to** grow roots?”
10. Provide remaining Resource 2: Card 2b and Card 2c to the student. Indicate and read each remaining Card.
- a. Indicate Card 2b.
- |            |                |
|------------|----------------|
| <b>SAY</b> | “Sprout Stage” |
|------------|----------------|
- b. Indicate Card 2c.
- |            |                |
|------------|----------------|
| <b>SAY</b> | “Growth Stage” |
|------------|----------------|
11. **ASK AGAIN** “In which stage of the plant life cycle does the plant **begin to** grow roots?”
12. Allow student to respond and record response.
13. Indicate Card 2b.
- |            |  |
|------------|--|
| <b>SAY</b> | “The plant <b>begins to</b> grow roots during the Sprout Stage of the plant life cycle.” |
|------------|--|
14. **SAY** “We are now finished with this activity.”



### Scoring Guidance and Scaffolding

#### Scaffolding:

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

<b>SAY</b>	“The plant makes seeds during the Reproduction Stage of the plant life cycle.”
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2. **ASK** “In which stage of the plant life cycle does the plant **begin to** grow roots?”

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

- a. Indicate Card 2b.

<b>SAY</b>	“Sprout Stage”
------------	----------------

- b. Indicate Card 2c.

<b>SAY</b>	“Growth Stage”
------------	----------------

4. **ASK AGAIN** “In which stage of the plant life cycle does the plant **begin to** grow roots?”

5. Allow student to respond and record response.

6. Indicate Card 2b.

<b>SAY</b>	“The plant <b>begins to</b> grow roots during the Sprout Stage of the plant life cycle.”
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7. **SAY** “We are now finished with this activity.”

#### Correct answers are as follows:

1. In which stage of the plant life cycle does the plant make seeds?
  - a. Card 2a – Reproduction Stage
2. In which stage of the plant life cycle does the plant **begin to** grow roots?
  - a. Card 2b – Sprout Stage



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the stage of the plant life cycle in which the plant makes seeds (Card 2a); <b>and</b></li><li>is unable to identify the stage of the plant life cycle in which the plant begins to grow roots (Card 2b).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to identify the stage of the plant life cycle in which the plant makes seeds (Card 2a); <b>and</b></li><li>is unable to identify the stage of the plant life cycle in which the plant begins to grow roots (Card 2b).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the stage of the plant life cycle in which the plant makes seeds (Card 2a); <b>and</b></li><li><b>after scaffolding</b>, is able to identify the stage of the plant life cycle in which the plant begins to grow roots (Card 2b).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to identify the stage of the plant life cycle in which the plant makes seeds (Card 2a); <b>and</b></li><li>is able to identify the stage of the plant life cycle in which the plant begins to grow roots (Card 2b).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 4

**Essence Statement:** CTAS-3-LS1-1 Compare simple models to describe the similarities and differences in the life cycle stages (birth, growth, reproduction, and death) of common organisms.

**Core Extension 4:** Compare and contrast the life cycles of two plants or two animals to identify one similarity and one difference. (CTAS-3-LS1-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 4 Resource 1: Life Cycle of a Chicken Poster
- Activity 4 Resource 2: Life Cycle of a Butterfly Poster
- Activity 4 Resource 3: Cards 3a – 3c
  - Card 3a – Larva Stage
  - Card 3b – Egg Stage
  - Card 3c – Pupa Stage
- Activity 4 Resource 4: Cards 4a – 4c
  - Card 4a – Egg Stage
  - Card 4b – Adult Stage
  - Card 4c – Larva Stage

### Steps to Follow:

1. **SAY** “In this activity, we are going to compare and contrast the life cycle of a chicken and the life cycle of a butterfly.”

2. Display Resource 1: Life Cycle of a Chicken Poster for the student.

3. Indicate Resource 1.

**SAY** “Here is the life cycle of a chicken. In the Egg Stage (*indicate Egg Stage*), the chicken develops inside an egg. In the Hatchling Stage (*indicate Hatchling Stage*), a chick hatches from the egg. In the Growth Stage (*indicate Growth Stage*), the chick grows larger. In the Adult Stage (*indicate Adult Stage*), the chicken is fully grown and can lay eggs.”

4. Display Resource 2: Life Cycle of a Butterfly Poster for the student.

5. Indicate Resource 2.

**SAY** “Here is the life cycle of a butterfly. In the Egg Stage (*indicate Egg Stage*), the butterfly starts off as an egg. In the Larva Stage (*indicate Larva Stage*), a caterpillar, or larva, hatches from the egg. In the Pupa Stage (*indicate Pupa Stage*), the caterpillar forms a pupa. In the Adult Stage (*indicate Adult Stage*), a butterfly comes out of the pupa and can fly.”

6. **ASK** “What is one way that the life cycle of a chicken and the life cycle of a butterfly are alike?”

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

a. Indicate Card 3a.

<b>SAY</b>	“They both have a <b>Larva Stage.</b> ”
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b. Indicate Card 3b.

<b>SAY</b>	“They both have an <b>Egg Stage.</b> ”
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c. Indicate Card 3c.

<b>SAY</b>	“They both have a <b>Pupa Stage.</b> ”
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8. **ASK** “What is one way that the life cycle of a chicken and the life cycle of a butterfly are alike?”  
**AGAIN**

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

10. Indicate Card 3b.

<b>SAY</b>	“They both have an <b>Egg Stage.</b> ”
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11. **ASK** “What is one way that the life cycle of a chicken and the life cycle of a butterfly are different?”

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

a. Indicate Card 4a.

<b>SAY</b>	“Only the butterfly life cycle has an <b>Egg Stage.</b> ”
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b. Indicate Card 4b.

<b>SAY</b>	“Only the butterfly life cycle has an <b>Adult Stage.</b> ”
------------	---

c. Indicate Card 4c.

<b>SAY</b>	“Only the butterfly life cycle has a <b>Larva Stage.</b> ”
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13. **ASK** “What is one way that the life cycle of a chicken and the life cycle of a butterfly are different?”  
**AGAIN**

14. Allow student to respond and record response.

15. Indicate Card 4c.

<b>SAY</b>	“Only the life cycle of a butterfly has a <b>Larva Stage.</b> ”
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16. **SAY** “We are now finished with this activity.”

### Scoring Guidance and Scaffolding

#### Scaffolding:

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

<b>SAY</b>	“One way that the life cycle of a chicken and the life cycle of a butterfly are alike is that they both start off as an egg. They both have an <b>Egg Stage.</b> ”
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2. **ASK** “What is one way that the life cycle of a chicken and the life cycle of a butterfly are different?”

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

a. Indicate Card 4a.

<b>SAY</b>	“Only the butterfly life cycle has an <b>Egg Stage.</b> ”
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b. Indicate Card 4b.

<b>SAY</b>	“Only the butterfly life cycle has an <b>Adult Stage.</b> ”
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c. Indicate Card 4c.

<b>SAY</b>	“Only the butterfly life cycle has a <b>Larva Stage.</b> ”
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4. **ASK AGAIN** “What is one way that the life cycle of a chicken and the life cycle of a butterfly are different?”

5. Allow student to respond and record response.

6. Indicate Card 4c.

<b>SAY</b>	“Only the life cycle of a butterfly has a <b>Larva Stage.</b> ”
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7. **SAY** “We are now finished with this activity.”

#### Correct answers are as follows:

1. What is one way that the life cycle of a chicken and the life cycle of a butterfly are alike?
  - a. Card 3b – They both have an **Egg Stage.**
2. What is one way that the life cycle of a chicken and the life cycle of a butterfly are different?
  - a. Card 4c – Only the life cycle of a butterfly has a **Larva Stage.**



Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify that the life cycle of a chicken and the life cycle of a butterfly both have an egg stage (Card 3b); <b>and</b></li><li>is unable to identify that only the life cycle of a butterfly has a larva stage (Card 4c).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify that the life cycle of a chicken and the life cycle of a butterfly both have an egg stage (Card 3b); <b>and</b></li><li>is unable to identify that only the life cycle of a butterfly has a larva stage (Card 4c).</li></ul> <p><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify that the life cycle of a chicken and the life cycle of a butterfly both have an egg stage (Card 3b); <b>and</b></li><li><b>after scaffolding</b>, is able to identify that only the life cycle of a butterfly has a larva stage (Card 4c).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify that the life cycle of a chicken and the life cycle of a butterfly both have an egg stage (Card 3b); <b>and</b></li><li>is able to identify that only the life cycle of a butterfly has a larva stage (Card 4c).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 5

**Essence Statement:** CTAS-4-LS1-1 Make and support a claim that plants and animals have structures that function to support survival, growth, and behavior.

**Core Extension 5:** Make a claim about a structure that supports the survival or growth of a plant or an animal (e.g., stem of a plant transports water or food/nutrients to the plant; water and nutrients/food allow plant to survive; stem is thick on a sunflower; thick stem allows sunflower to grow tall). (CTAS-4-LS1-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 5 Resource 1: Statement 1 Poster
- Activity 5 Resource 2: Cards 2a – 2c
  - Card 2a – seeds
  - Card 2b – roots
  - Card 2c – petals
- Activity 5 Resource 3: Statement 2 Poster
- Activity 5 Resource 4: Cards 4a – 4c
  - Card 4a – pollen
  - Card 4b – leaves
  - Card 4c – stems

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about plant structures. Plants have many structures that help them to survive.”

2. Display Resource 1: Statement 1 Poster for the student.

3. Indicate Resource 1.

**SAY** “This is a statement about the function, or job, of a plant structure. The statement needs to be completed: ‘**Statement 1:** Plant **‘blank’** are colorful to attract bees to their nectar.’”

4. **ASK** “Which plant structure completes Statement 1?”

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

a. Indicate Card 2a.

**SAY** “seeds”

b. Indicate Card 2b.

**SAY** “roots”

c. Indicate Card 2c.

**SAY** “petals”

6. **ASK AGAIN** “Which plant structure completes Statement 1?”
7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
8. Indicate Card 2c.
- SAY** “Plant **petals** are colorful to attract bees to their nectar.”
9. Display Resource 3: Statement 2 Poster for the student.
10. Indicate Resource 3.
- SAY** “This is another statement about the function of a plant structure. The statement needs to be completed: ‘**Statement 2:** Bees spread ‘**blank**’ in order to help plants reproduce.’”
11. **ASK** “Which plant structure completes Statement 2?”
12. Provide Resource 4: Cards 4a – 4c to the student. Indicate and read each Card.
- a. Indicate Card 4a.
- SAY** “pollen”
- b. Indicate Card 4b.
- SAY** “leaves”
- c. Indicate Card 4c.
- SAY** “stems”
13. **ASK AGAIN** “Which plant structure completes Statement 2?”
14. Allow student to respond and record response.
15. Indicate Card 4a.
- SAY** “Bees spread **pollen** in order to help plants reproduce.”
16. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

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

<b>SAY</b>	“Plant <b>petals</b> are colorful to attract bees to their nectar.”
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2. Display Resource 3: Statement 2 Poster for the student.

3. Indicate Resource 3.

<b>SAY</b>	“This is another statement about the function of a plant structure. The statement needs to be completed: ‘ <b>Statement 2:</b> Bees spread ‘ <b>blank</b> ’ in order to help plants reproduce.’”
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4. **ASK** “Which plant structure completes Statement 2?”

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

- a. Indicate Card 4a.

<b>SAY</b>	“pollen”
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- b. Indicate Card 4b.

<b>SAY</b>	“leaves”
------------	----------

- c. Indicate Card 4c.

<b>SAY</b>	“stems”
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6. **ASK AGAIN** “Which plant structure completes Statement 2?”

7. Allow student to respond and record response.

8. Indicate Card 4a.

<b>SAY</b>	“Bees spread <b>pollen</b> in order to help plants reproduce.”
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9. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. Which plant structure completes Statement 1?
  - a. Card 2c – petals; **Statement 1:** Plant **petals** are colorful to attract bees to their nectar.
2. Which plant structure completes Statement 2?
  - a. Card 4a – pollen; **Statement 2:** Bees spread **pollen** in order to help plants reproduce.



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the structure that plant flowers use to attract bees (Card 2c); <b>and</b></li><li>is unable to identify the structure that plants and bees use to help plants reproduce (Card 4a).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to identify the structure that plant flowers use to attract bees (Card 2c); <b>and</b></li><li>is unable to identify the structure that plants and bees use to help plants reproduce (Card 4a).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the structure that plant flowers use to attract bees (Card 2c); <b>and</b></li><li><b>after scaffolding</b>, is able to identify the structure that plants and bees use to help plants reproduce (Card 4a).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to identify the structure that plant flowers use to attract bees (Card 2c); <b>and</b></li><li>is able to identify the structure that plants and bees use to help plants reproduce (Card 4a).</li></ul>	The student demonstrates understanding independently without scaffolding.	2





Connecticut  
Alternate  
Science  
Assessment

# **Life Science**

## Storyline 4: Healthy Ecosystems

### Grade 5 Performance Task





**Life Science**  
**Storyline 4: Healthy Ecosystems**  
**Grade 5 Performance Task**

**Guiding Questions:** Where do plants and animals get the matter they need to survive? What causes organisms to thrive or not thrive in an ecosystem? How can humans contribute to a healthier environment?

NGSS Learning Progressions	Grade 5		
	NGSS Standard Performance Expectations	Connecticut Alternate Science Essence Statements	Core Extensions
LS2.A Interdependent Relationships in Ecosystems	5-LS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.	CTAS-5-LS2-1 Use a simple model to describe the movement of matter among plants and animals in the environment.	1. Given several examples, identify which are plants and which are animals. (CTAS-5-LS2-1) 2. Identify two traits that help an organism survive in a given habitat. (CTAS-3-LS4-3) 3. Make and support a claim why some animals would not survive in a given habitat. (CTAS-LS4-3) 4. Describe the role of plants as producers and animals as consumers in the environment. (CTAS-5-LS2-1)
LS2.C Ecosystem Dynamics, Functioning, and Resilience			
LS4.C Adaptation	3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.*	CTAS-3-LS4-4 Given evidence, compare possible solutions to a problem that causes changes in an environment affecting the plants and animals that live there.*	5. Use a simple food chain as a model to show the interactions of plants and animals in cycling matter. (CTAS-5-LS2-1) 6. Make a claim using evidence about two factors affecting the survival of an organism in a given habitat. (CTAS-3-LS4-3) 7. When given an environmental problem, identify a way to help reduce the harmful effects on plants or animals. (CTAS-3-LS4-4)



NGSS Learning Progressions	Grade 5		
	NGSS Standard Performance Expectations	Connecticut Alternate Science Essence Statements	Core Extensions
	3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	CTAS-3-LS4-3 Make and support a claim that in a given habitat, some organisms can survive well, some survive less well, and some cannot survive at all.	8. From two possible solutions, compare them and select one that may prevent environmental problems that affect plants or animals. (CTAS-3-LS4-4)
Appropriate Vocabulary	Environment, food chain, ecosystem, solution, habitat, producer, consumer, plant, animal, energy, increase, decrease		

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



**Life Science**  
**Storyline 4: Healthy Ecosystems**  
**Grade 5 Performance Task**

General Overview:

Students will complete a series of activities focused on a pond ecosystem. Students will consider the variety of plants (producers) and animals (consumers) in food chains, as well as potential problems that might arise in the ecosystem and possible solutions.

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: Healthy Pond Habitat Poster
- Activity 1 Resource 2: Cards 2a – 2h
  - Card 2a – sun
  - Card 2b – lily pad
  - Card 2c – marsh grass
  - Card 2d – fish
  - Card 2e – beetle
  - Card 2f – frog
  - Card 2g – bird
  - Card 2h – turtle
- Activity 2 Resource 1: Cards 1a – 1d
  - Card 1a – bird
  - Card 1b – wings
  - Card 1c – beak
  - Card 1d – feet
- Activity 2 Resource 2: *Use Activity 1 Resource 1: Healthy Pond Habitat Poster*
- Activity 3 Resource 1: *Use Activity 1 Resource 1: Healthy Pond Habitat Poster*
- Activity 3 Resource 2: Cards 2a – 2c
  - Card 2a – polar bear
  - Card 2b – turtle
  - Card 2c – duck

- Activity 3 Resource 3: Cards 3a – 3c
  - Card 3a – fur
  - Card 3b – nose
  - Card 3c – paws
- Activity 4 Resource 1: Strips 1a – 1d
  - Strip 1a – use energy
  - Strip 1b – eat plants
  - Strip 1c – eat animals
  - Strip 1d – make food
- Activity 5 Resource 1: Food Chain Poster
- Activity 5 Resource 2: *Use Activity 1 Resource 2: Cards 2b – 2h*
  - Card 2b – lily pad
  - Card 2c – marsh grass
  - Card 2d – fish
  - Card 2e – beetle
  - Card 2f – frog
  - Card 2g – bird
  - Card 2h – turtle
- Activity 6 Resource 1: Pond Organisms Data Table Poster
- Activity 6 Resource 2a: Statement 1 Poster
- Activity 6 Resource 2b: Statement 2 Poster
- Activity 6 Resource 3: Cards 3a – 3f
  - Card 3a – increased
  - Card 3b – decreased
  - Card 3c – decrease
  - Card 3d – increase
  - Card 3e – increase
  - Card 3f – decrease
- Activity 7 Resource 1: Healthy Pond Environment Poster
- Activity 7 Resource 2: Unhealthy Pond Environment Poster
- Activity 7 Resource 3: Strips 3a – 3c
  - Strip 3a – too few people
  - Strip 3b – too much trash
  - Strip 3c – too many animals
- Activity 7 Resource 4: Strips 4a – 4c
  - Strip 4a – remove animals
  - Strip 4b – more people
  - Strip 4c – trash bins
- Activity 8 Resource 1: *Use Activity 7 Resource 2: Unhealthy Pond Environment Poster*
- Activity 8 Resource 2: Card 2a and Card 2b
  - Card 2a – trash can
  - Card 2b – rowboat



- Activity 8 Resource 3: Strips 3a – 3c
  - Strip 3a – not move fast
  - Strip 3b – not have motors
  - Strip 3c – not make noise

## ACTIVITY 1

**Essence Statement:** CTAS-5-LS2-1 Use a simple model to describe the movement of matter among plants and animals in the environment.

**Core Extension 1:** Given several examples, identify which are plants and which are animals. (CTAS-5-LS2-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 1 Resource 1: Healthy Pond Habitat Poster
- Activity 1 Resource 2: Cards 2a – 2h
  - Card 2a – sun
  - Card 2b – lily pad
  - Card 2c – marsh grass
  - Card 2d – fish
  - Card 2e – beetle
  - Card 2f – frog
  - Card 2g – bird
  - Card 2h – turtle

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about a pond habitat.”

2. Display Resource 1: Healthy Pond Habitat Poster for the student.

3. Indicate Resource 1.

**SAY** “Here is a healthy pond habitat. There is lots of marsh grass on the bank (*indicate marsh grass on poster*). There are many beetles (*indicate beetles on poster*). There are lots of fish and frogs swimming in clear water (*indicate frogs and fish on poster*). There is a turtle in the water (*indicate turtle on poster*). There is a bird flying in the air and a bird sitting on the bank of the pond (*indicate birds on poster*). Some birds catch fish and frogs to eat.”

4. **ASK** “Which pictures show a plant or a producer? Select all pictures that show a plant or a producer.”

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

a. Indicate Card 2a.

**SAY** “sun”

b. Indicate Card 2b.

**SAY** “lily pad”

c. Indicate Card 2c.

**SAY** “marsh grass”

d. Indicate Card 2d.

<b>SAY</b>	“fish”
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e. Indicate Card 2e.

<b>SAY</b>	“beetle”
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f. Indicate Card 2f.

<b>SAY</b>	“frog”
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g. Indicate Card 2g.

<b>SAY</b>	“bird”
------------	--------

h. Indicate Card 2h.

<b>SAY</b>	“turtle”
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6. **ASK** “Which pictures show a plant or a producer? Select all pictures that show a plant or a producer.”  
**AGAIN**

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

8. If the student chose one or more of the correct answer(s), reiterate the student’s correct answer(s). Set chosen answer Card(s) aside.

9. **ASK** “Which pictures show an animal or a consumer? Select all pictures that show an animal or a consumer.”

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

a. Indicate Card 2a.

<b>SAY</b>	“sun”
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b. Indicate Card 2b.

<b>SAY</b>	“lily pad”
------------	------------

c. Indicate Card 2c.

<b>SAY</b>	“marsh grass”
------------	---------------

d. Indicate Card 2d.

<b>SAY</b>	“fish”
------------	--------

e. Indicate Card 2e.

<b>SAY</b>	“beetle”
------------	----------



f. Indicate Card 2f.

<b>SAY</b>	"frog"
------------	--------

g. Indicate Card 2g.

<b>SAY</b>	"bird"
------------	--------

h. Indicate Card 2h.

<b>SAY</b>	"turtle"
------------	----------

11. **ASK AGAIN** "Which pictures show an animal or a consumer? Select all pictures that show an animal or a consumer."

12. Allow student to respond and record response.

13. If the student chose one or more of the correct answer(s), reiterate the student's correct answer(s). Set chosen answer Card(s) 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, “Which pictures show an animal or a consumer?”, 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 2b.

<b>SAY</b>	“This is a lily pad. A lily pad is a plant.”
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2. 

<b>ASK</b>	“Which other picture shows a plant?”
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3. Provide remaining Resource 2: Cards 2a – 2h to the student. Indicate and read each remaining Card.

- a. Indicate Card 2a.

<b>SAY</b>	“sun”
------------	-------

- b. Indicate Card 2c.

<b>SAY</b>	“marsh grass”
------------	---------------

- c. Indicate Card 2d.

<b>SAY</b>	“fish”
------------	--------

- d. Indicate Card 2e.

<b>SAY</b>	“beetle”
------------	----------

- e. Indicate Card 2f.

<b>SAY</b>	“frog”
------------	--------

- f. Indicate Card 2g.

<b>SAY</b>	“bird”
------------	--------

- g. Indicate Card 2h.

<b>SAY</b>	“turtle”
------------	----------

4. 

<b>ASK AGAIN</b>	“Which other picture shows a plant?”
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5. Allow student to respond and record response.

6. If the student chose one or more of the correct answer(s), reiterate the student’s correct answer(s). Set chosen answer Card(s) aside.

7. 

<b>SAY</b>	“We are now finished with this activity.”
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**Correct answers are as follows:**

1. Which pictures show a plant or a producer?
  - a. Card 2b – lily pad
  - b. Card 2c – marsh grass
2. Which pictures show an animal or a consumer?
  - a. Card 2d – fish
  - b. Card 2e – beetle
  - c. Card 2f – frog
  - d. Card 2g – bird
  - e. Card 2h – turtle

Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"> <li>• gives NO response.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify at least one plant (Card 2b or Card 2c); <b>and</b></li> <li>• is unable to identify at least one animal (Card 2d – Card 2h).</li> </ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"> <li>• is able to identify only one plant (Card 2b or Card 2c); <b>and</b></li> <li>• is unable to identify at least one animal (Card 2d – Card 2h).</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is able to identify only one plant (Card 2b or Card 2c); <b>and</b></li> <li>• is able to identify between one and four animals (Card 2d – Card 2h).</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify at least one plant (Card 2b or Card 2c); <b>and</b></li> <li>• <b>after scaffolding</b>, is able to identify a plant (Card 2c).</li> </ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"> <li>• is able to identify both plants (Card 2b and Card 2c); <b>and</b></li> <li>• is able to identify all five animals (Card 2d – Card 2h).</li> </ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 2

**Essence Statement:** CTAS-3-LS4-3 Make and support a claim that in a given habitat, some organisms can survive well, some survive less well, and some cannot survive at all.

**Core Extension 2:** Identify two traits that help an organism survive in a given habitat. (CTAS-3-LS4-3)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 2 Resource 1: Cards 1a – 1d
  - Card 1a – bird
  - Card 1b – wings
  - Card 1c – beak
  - Card 1d – feet
- Activity 2 Resource 2: *Use Activity 1 Resource 1: Healthy Pond Habitat Poster*

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about one of the birds that lives in the pond habitat.”

2. Display Resource 1: Card 1a for the student.

3. Display Resource 2: Healthy Pond Habitat Poster for the student.

4. Indicate Card 1a and the bird in Resource 2.

**SAY** “This bird flies around the pond and catches fish or frogs to eat.”

5. Set Card 1a aside.

6. **ASK** “What is the most helpful body part that allows the bird to fly?”

7. Provide Resource 1: Cards 1b – 1d to the student. Indicate and read each Card.

a. Indicate Card 1b.

**SAY** “wings”

b. Indicate Card 1c.

**SAY** “beak”

c. Indicate Card 1d.

**SAY** “feet”

8. **ASK AGAIN** “What is the most helpful body part that allows the bird to fly?”

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

10. Indicate Card 1b.

<b>SAY</b>	“The bird’s wings are the most helpful body part that allows the bird to fly.”
------------	--

11. **ASK** “What is the most helpful body part that allows the bird to eat?”

12. Provide Resource 1: Card 1c and Card 1d to the student. Indicate and read each Card.

a. Indicate Card 1c.

<b>SAY</b>	“beak”
------------	--------

b. Indicate Card 1d.

<b>SAY</b>	“feet”
------------	--------

13. **ASK AGAIN** “What is the most helpful body part that allows the bird to eat?”

14. Allow student to respond and record response.

15. Indicate Card 1c.

<b>SAY</b>	“The bird’s beak is the most helpful body part that allows the bird to eat.”
------------	--

16. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

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

<b>SAY</b>	“The bird’s wings are the most helpful body part that allows the bird to fly.”
------------	--

2. **ASK** “What is the most helpful body part that allows the bird to eat?”

3. Provide Resource 1: Card 1c and Card 1d to the student. Indicate and read each Card.

- a. Indicate Card 1c.

<b>SAY</b>	“beak”
------------	--------

- b. Indicate Card 1d.

<b>SAY</b>	“feet”
------------	--------

4. **ASK** “What is the most helpful body part that allows the bird to eat?”

**AGAIN**

5. Allow student to respond and record response.

6. Indicate Card 1c.

<b>SAY</b>	“The bird’s beak is the most helpful body part that allows the bird to eat.”
------------	--

7. **SAY** “We are now finished with this activity.”

Correct answers are as follows:

1. What is the most helpful body part that allows the bird to fly?
  - a. Card 1b – wings
2. What is the most helpful body part that allows the bird to eat?
  - a. Card 1c – beak

*For the first question, feathers is also an acceptable answer. For the second question, mouth is also an acceptable answer.*



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the most helpful body part that allows the bird to fly (Card 1b); <b>and</b></li><li>is unable to identify the most helpful body part that allows the bird to eat (Card 1c).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to identify the most helpful body part that allows the bird to fly (Card 1b); <b>and</b></li><li>is unable to identify the most helpful body part that allows the bird to eat (Card 1c).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the most helpful body part that allows the bird to fly (Card 1b); <b>and</b></li><li><b>after scaffolding</b>, is able to identify the most helpful body part that allows the bird to eat (Card 1c).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to identify the most helpful body part that allows the bird to fly (Card 1b); <b>and</b></li><li>is able to identify the most helpful body part that allows the bird to eat (Card 1c).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

### ACTIVITY 3

**Essence Statement:** CTAS-3-LS4-3 Make and support a claim that in a given habitat, some organisms can survive well, some survive less well, and some cannot survive at all.

**Core Extension 3:** Make and support a claim why some animals would not survive in a given habitat. (CTAS-3-LS4-3)

**Teacher Notes:**

Collect the following resources for this activity:

- Activity 3 Resource 1: *Use Activity 1 Resource 1: Healthy Pond Habitat Poster*
- Activity 3 Resource 2: Cards 2a – 2c
  - Card 2a – polar bear
  - Card 2b – turtle
  - Card 2c – duck
- Activity 3 Resource 3: Cards 3a – 3c
  - Card 3a – fur
  - Card 3b – nose
  - Card 3c – paws

**Steps to Follow:**

1. 

<b>SAY</b>	“In this activity, we are going to talk about the pond habitat to determine which animals cannot survive in this pond habitat and why.”
------------	---
2. Display Resource 1: Healthy Pond Habitat Poster to the student.
3. Indicate Resource 1.
 

<b>SAY</b>	“Let’s look at this pond habitat again. This pond is located in an area that has very warm temperatures for most of the year.”
------------	--
4. 

<b>ASK</b>	“Which two animals <b>survive well</b> in this pond habitat? Choose two animals that survive well in this pond habitat.”
------------	--
5. Provide Resource 2: Cards 2a – 2c to the student. Indicate and read each Card.
  - a. Indicate Card 2a.
 

<b>SAY</b>	“polar bear”
------------	--------------
  - b. Indicate Card 2b.
 

<b>SAY</b>	“turtle”
------------	----------
  - c. Indicate Card 2c.
 

<b>SAY</b>	“duck”
------------	--------
6. 

<b>ASK AGAIN</b>	“Which two animals <b>survive well</b> in this pond habitat? Choose two animals that survive well in this pond habitat.”
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7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
8. Indicate Card 2b and Card 2c.
 

<b>SAY</b>	“Both the turtle and the duck <b>survive well</b> in this pond habitat.”
------------	--
9. Set Card 2b and Card 2c aside.
10. Indicate Card 2a.
 

<b>SAY</b>	“It is difficult for a polar bear to survive in this pond habitat.”
------------	---
11. **ASK** “What makes it difficult for the polar bear to survive in this pond habitat?”
12. Provide Resource 3: Cards 3a – 3c to the student. Indicate and read each Card.
  - a. Indicate Card 3a.
 

<b>SAY</b>	“The polar bear has <b>thick fur</b> and fat to stay warm all year.”
------------	--
  - b. Indicate Card 3b.
 

<b>SAY</b>	“The polar bear has a <b>nose</b> to smell other animals.”
------------	--
  - c. Indicate Card 3c.
 

<b>SAY</b>	“The polar bear has <b>large paws</b> to swim in the water.”
------------	--
13. **ASK AGAIN** “What makes it difficult for the polar bear to survive in this pond habitat?”
14. Allow student to respond and record response.
15. Indicate Card 3a.
 

<b>SAY</b>	“The polar bear has <b>thick fur</b> and fat to stay warm all year.”
------------	--
16. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

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

<b>SAY</b>	“Both the turtle and the duck <b>survive well</b> in this pond habitat.”
------------	--

2. Set Card 2b and Card 2c aside.

3. Indicate Card 2a.

<b>SAY</b>	“It is difficult for a polar bear to survive in this pond habitat.”
------------	---

4. **ASK** “What makes it difficult for the polar bear to survive in this pond habitat?”

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

- a. Indicate Card 3a.

<b>SAY</b>	“The polar bear has <b>thick fur</b> and fat to stay warm all year.”
------------	--

- b. Indicate Card 3b.

<b>SAY</b>	“The polar bear has a <b>nose</b> to smell other animals.”
------------	--

- c. Indicate Card 3c.

<b>SAY</b>	“The polar bear has <b>large paws</b> to swim in the water.”
------------	--

6. **ASK AGAIN** “What makes it difficult for the polar bear to survive in this pond habitat?”

7. Allow student to respond and record response.

8. Indicate Card 3a.

<b>SAY</b>	“The polar bear has <b>thick fur</b> and fat to stay warm all year.”
------------	--

9. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. Which two animals **survive well** in this pond habitat? Choose two animals that survive well in this pond habitat.
  - a. Card 2b – turtle
  - b. Card 2c – duck
2. What makes it difficult for the polar bear to survive in this pond habitat?
  - a. Card 3a – thick fur



Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify that the turtle and the duck can survive well in this pond habitat (Card 2b and Card 2c); <b>and</b></li><li>is unable to identify that it is difficult for the polar bear to survive in this pond habitat because it has thick fur (Card 3a).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify that the turtle and the duck can survive well in this pond habitat (Card 2b and Card 2c); <b>and</b></li><li>is unable to identify that it is difficult for the polar bear to survive in this pond habitat because it has thick fur (Card 3a).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify that the turtle and the duck can survive well in this pond habitat (Card 2b and Card 2c); <b>and</b></li><li><b>after scaffolding</b>, is able to identify that it is difficult for the polar bear to survive in this pond habitat because it has thick fur (Card 3a).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify that the turtle and the duck can survive well in this pond habitat (Card 2b and Card 2c); <b>and</b></li><li>is able to identify that it is difficult for the polar bear to survive in this pond habitat because it has thick fur (Card 3a).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 4

**Essence Statement:** CTAS-5-LS2-1 Use a simple model to describe the movement of matter among plants and animals in the environment.

**Core Extension 4:** Describe the role of plants as producers and animals as consumers in the environment. (CTAS-5-LS2-1)

**Teacher Notes:**

Collect the following resources for this activity:

- Activity 4 Resource 1: Strips 1a – 1d
  - Strip 1a – use energy
  - Strip 1b – eat plants
  - Strip 1c – eat animals
  - Strip 1d – make food

**Steps to Follow:**

1. 

<b>SAY</b>	“In this activity, we are going to talk about what plants and animals do. All plants and animals need food to survive. Producers are plants. Consumers are animals. Producers and consumers get their food in different ways.”
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2. 

<b>ASK</b>	“What is <b>one</b> description of what a producer does?”
------------	---
3. Provide Resource 1: Strips 1a – 1d. Indicate and read each Strip.
  - a. Indicate Strip 1a.
 

<b>SAY</b>	“use energy from the sun”
------------	---------------------------
  - b. Indicate Strip 1b.
 

<b>SAY</b>	“eat plants”
------------	--------------
  - c. Indicate Strip 1c.
 

<b>SAY</b>	“eat animals”
------------	---------------
  - d. Indicate Strip 1d.
 

<b>SAY</b>	“make their own food”
------------	-----------------------
  
4. 

<b>ASK AGAIN</b>	“What is <b>one</b> description of what a producer does?”
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5. 

	Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
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6. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen answer Strip aside.

7. 

<b>ASK</b>	“What is <b>one</b> description of what a consumer does?”
------------	---
8. Provide remaining Resource 1: Strips 1a – 1d to the student. Indicate and read each remaining Strip.
- a. Indicate Strip 1a.
- |            |                           |
|------------|---------------------------|
| <b>SAY</b> | “use energy from the sun” |
|------------|---------------------------|
- b. Indicate Strip 1b.
- |            |              |
|------------|--------------|
| <b>SAY</b> | “eat plants” |
|------------|--------------|
- c. Indicate Strip 1c.
- |            |               |
|------------|---------------|
| <b>SAY</b> | “eat animals” |
|------------|---------------|
- d. Indicate Strip 1d.
- |            |                       |
|------------|-----------------------|
| <b>SAY</b> | “make their own food” |
|------------|-----------------------|
9. 

<b>ASK</b> <b>AGAIN</b>	“What is <b>one</b> description of what a consumer does?”
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10. 

Allow student to respond and record response.
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11. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen answer Strip aside.
12. 

<b>SAY</b>	“We are now finished with this activity.”
------------	---

## Scoring Guidance and Scaffolding

### Scaffolding:

1. After student makes first incorrect attempt, indicate Strip 1a.

<b>SAY</b>	“Plants use energy from the sun. This describes a producer.”
------------	--

2. **ASK** “What is **one** description of what a consumer does?”

3. Provide remaining Resource 1: Strips 1b – 1d to the student. Indicate and read each remaining Strip.

- a. Indicate Strip 1b.

<b>SAY</b>	“eat plants”
------------	--------------

- b. Indicate Strip 1c.

<b>SAY</b>	“eat animals”
------------	---------------

- c. Indicate Strip 1d.

<b>SAY</b>	“make their own food”
------------	-----------------------

4. **ASK AGAIN** “What is **one** description of what a consumer does?”

5. Allow student to respond and record response.

6. If the student chose the correct answer, reiterate the student’s correct answer. Set chosen answer Strip aside.

7. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. What is **one** description of what a producer does?
  - a. Strip 1a – use energy from the sun

**OR**

  - b. Strip 1d – make their own food
2. What is **one** description of what a consumer does?
  - a. Strip 1b – eat plants

**OR**

  - b. Strip 1c – eat animals



Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify <b>one</b> description of what a producer does (Strip 1a or Strip 1d); <b>and</b></li><li>is unable to identify <b>one</b> description of what a consumer does (Strip 1b or Strip 1c).</li></ul>	<p>The student <b>does not</b> demonstrate understanding.</p>	<p>0</p>
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify <b>one</b> description of what a producer does (Strip 1a or Strip 1d); <b>and</b></li><li>is unable to identify <b>one</b> description of what a consumer does (Strip 1b or Strip 1c).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify <b>one</b> description of what a producer does (Strip 1a or Strip 1d); <b>and</b></li><li><b>after scaffolding</b>, is able to identify <b>one</b> description of what a consumer does (Strip 1b or Strip 1c).</li></ul>	<p>The student demonstrates limited understanding typically requiring additional support through scaffolding.</p>	<p>1</p>
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify <b>one</b> description of what a producer does (Strip 1a or Strip 1d); <b>and</b></li><li>is able to identify <b>one</b> description of what a consumer does (Strip 1b or Strip 1c).</li></ul>	<p>The student demonstrates understanding independently without scaffolding.</p>	<p>2</p>

## ACTIVITY 5

**Essence Statement:** CTAS-5-LS2-1 Use a simple model to describe the movement of matter among plants and animals in the environment.

**Core Extension 5:** Use a simple food chain as a model to show the interactions of plants and animals in cycling matter. (CTAS-5-LS2-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 5 Resource 1: Food Chain Poster
- Activity 5 Resource 2: *Use Activity 1 Resource 2: Cards 2b – 2h*
  - Card 2b – lily pad
  - Card 2c – marsh grass
  - Card 2d – fish
  - Card 2e – beetle
  - Card 2f – frog
  - Card 2g – bird
  - Card 2h – turtle

### Steps to Follow:

1. 

<b>SAY</b>	“In this activity, we are going to use a food chain to show the feeding relationships between living things in an environment. Plants get energy from the sun. Some animals eat plants. Large animals eat smaller animals.”
------------	---

2. Display the Resource 1: Food Chain Poster for the student.

3. Indicate Resource 1.

<b>SAY</b>	“Here is a blank food chain. The food chain starts with energy from the sun ( <i>indicate the first box of the food chain with the sun</i> ). This food chain should be completed with <i>at least</i> one plant and two animals in the pond environment.”
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4. 

<b>SAY</b>	“Let’s place these Cards on the food chain.”
------------	--

<b>ASK</b>	“After the sun, which organism might go next in the food chain?”
------------	--

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

- a. Indicate Card 2b.

<b>SAY</b>	“lily pad”
------------	------------

- b. Indicate Card 2c.

<b>SAY</b>	“marsh grass”
------------	---------------

- c. Indicate Card 2d.

<b>SAY</b>	“fish”
------------	--------

d. Indicate Card 2e.

<b>SAY</b>	“beetle”
------------	----------

e. Indicate Card 2f.

<b>SAY</b>	“frog”
------------	--------

f. Indicate Card 2g.

<b>SAY</b>	“bird”
------------	--------

g. Indicate Card 2h.

<b>SAY</b>	“turtle”
------------	----------

<b>SAY</b> <b>AGAIN</b>	“Let’s place these Cards on the food chain.”
	“After the sun, which organism might go next in the food chain?”
<b>ASK</b> <b>AGAIN</b>	

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

8. If the student chose the correct answer(s), reiterate the student’s correct answer(s). Set chosen answer Cards(s) on the food chain to complete the food chain. Read the completed food chain to the student.

<b>SAY</b>	“Let’s place more Cards on the food chain.”
	“Which organisms might go next in the food chain?”
<b>ASK</b>	

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

a. Indicate Card 2b.

<b>SAY</b>	“lily pad”
------------	------------

b. Indicate Card 2c.

<b>SAY</b>	“marsh grass”
------------	---------------

c. Indicate Card 2d.

<b>SAY</b>	“fish”
------------	--------

d. Indicate Card 2e.

<b>SAY</b>	“beetle”
------------	----------

e. Indicate Card 2f.

<b>SAY</b>	"frog"
------------	--------

f. Indicate Card 2g.

<b>SAY</b>	"bird"
------------	--------

g. Indicate Card 2h.

<b>SAY</b>	"turtle"
------------	----------

- |     |              |  |
|-----|--------------|--|
| 11. | <b>SAY</b>   | "Let's place more Cards on the food chain."        |
|     | <b>AGAIN</b> |  |
|     | <b>ASK</b>   | "Which organisms might go next in the food chain?" |
|     | <b>AGAIN</b> |  |

12. Allow student to respond and record response.

13. If the student chose the correct answer(s), reiterate the student's correct answer(s). Set chosen answer Cards(s) on the food chain to complete the food chain. Read the completed food chain to the student.

14.	<b>SAY</b>	"We are now finished with this activity."
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### Scoring Guidance and Scaffolding

#### Scaffolding:

1. After student makes first incorrect attempt, place Card 2c in the second link of the food chain.

<b>SAY</b>	“The marsh grass gets its energy from the sun.”
------------	---

2. **ASK** “What gets its energy from the marsh grass?”

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

- a. Indicate Card 2b.

<b>SAY</b>	“lily pad”
------------	------------

- b. Indicate Card 2d.

<b>SAY</b>	“fish”
------------	--------

- c. Indicate Card 2e.

<b>SAY</b>	“beetle”
------------	----------

- d. Indicate Card 2f.

<b>SAY</b>	“frog”
------------	--------

- e. Indicate Card 2g.

<b>SAY</b>	“bird”
------------	--------

- f. Indicate Card 2h.

<b>SAY</b>	“turtle”
------------	----------

4. **ASK AGAIN** “What gets its energy from the marsh grass?”

5. Allow student to respond and record response.

6. If the student chose the correct answer(s), reiterate the student’s correct answer(s). Set chosen answer Cards(s) on the food chain to complete the food chain. Read the completed food chain to the student.

7. **SAY** “We are now finished with this activity.”

**Correct answers for food chains in the pond environment include, but are not limited to, the following examples:**

sun → lily pad → fish → bird

sun → lily pad → turtle

sun → marsh grass → beetle → frog

sun → marsh grass → beetle → fish

sun → marsh grass → turtle

sun → marsh grass → turtle → bird

Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"> <li>• gives NO response.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to complete any of the links in the food chain.</li> </ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"> <li>• <b>with or without scaffolding</b>, is able to place at least one link in the food chain.</li> </ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"> <li>• is able to complete a food chain with at least one plant and at least one animal.</li> </ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 6

**Essence Statement:** CTAS-3-LS4-3 Make and support a claim that in a given habitat, some organisms can survive well, some survive less well, and some cannot survive at all.

**Core Extension 6:** Make a claim using evidence about two factors affecting the survival of an organism in a given habitat. (CTAS-3-LS4-3)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 6 Resource 1: Pond Organisms Data Table Poster
- Activity 6 Resource 2a: Statement 1 Poster
- Activity 6 Resource 2b: Statement 2 Poster
- Activity 6 Resource 3: Cards 3a – 3f
  - Card 3a – increased
  - Card 3b – decreased
  - Card 3c – decrease
  - Card 3d – increase
  - Card 3e – increase
  - Card 3f – decrease

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about how the water level in a pond can affect the frogs and insects who live in and around the pond.”

2. Display Resource 1: Pond Organisms Data Table Poster for the student.

3. Indicate Resource 1.

**SAY** “Let’s look at this data table. This data table shows the water level in the pond over a three-year period. Also shown are the number of insects and frogs in the pond over the same three years. Frogs eat insects to stay alive.”

4. Display Resource 2a: Statement 1 Poster for the student.

5. Provide Resource 3: Cards 3a – 3d to the student.

6. Indicate Resource 1 and Resource 2a.

**SAY** “We will use the data table (*indicate Resource 1*) to complete Statement 1 (*indicate Resource 2a*) using increase and decrease Cards. Statement 1 says ‘From Year 1 to Year 2, the water level in the pond **‘blank’**. This caused the number of insects in the pond to **‘blank’**.’”

7. **SAY** “Let’s use the increase(d) or decrease(d) Cards to fill in the blanks of Statement 1.”

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

a. Indicate Card 3a.

<b>SAY</b>	“increased”
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b. Indicate Card 3b.

<b>SAY</b>	“decreased”
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c. Indicate Card 3c.

<b>SAY</b>	“decrease”
------------	------------

d. Indicate Card 3d.

<b>SAY</b>	“increase”
------------	------------

9. **SAY AGAIN** “Let’s use the increase(d) or decrease(d) Cards to fill in the blanks of Statement 1.”

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

11. If the student chose the correct answer, place the chosen answer Cards in the blanks.

12. **SAY** “From Year 1 to Year 2, the water level in the pond **decreased**. This caused the number of insects in the pond to **decrease**.”

13. Display Resource 2b: Statement 2 Poster for the student.

14. Provide Resource 3: Cards 3e – 3f to the student.

15. Indicate Resource 1, Resource 2b, and Resource 3.

<b>SAY</b>	“We will use the data on pond organisms to complete Statement 2 using the increase and decrease Cards.”
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16. **SAY** “In year 3, there was a lot of rain that filled the pond to 9 feet (*indicate year 3 on data table*). The number of insects in the pond increased. Statement 2 says, ‘In Year 3, the increase in the number of insects in the pond caused the number of frogs in the pond to **blank**.’”

17. **SAY** “Let’s use an increase or decrease Card to fill in the blank in Statement 2.”

18. Provide Resource 3: Cards 3e and Card 3f to the student. Indicate and read each Card.

a. Indicate Card 3e.

<b>SAY</b>	“increase”
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b. Indicate Card 3f.

<b>SAY</b>	“decrease”
------------	------------

19. **SAY AGAIN** “Let’s use an increase or decrease Card to fill in the blank of Statement 2.”

20. Allow student to respond and record response.

21. If the student chose the correct answer, place the chosen answer Card in the blank.

22. **SAY** “In Year 3, the increase in the number of insects in the pond caused the number of frogs in the pond to **increase**.”

23. **SAY** “We are now finished with this activity.”

### Scoring Guidance and Scaffolding

#### Scaffolding:

1. After student makes first incorrect attempt, complete Statement 1 using the decrease(d) Cards (Card 3b and Card 3c).

2. **SAY** “From Year 1 to Year 2, the water level in the pond **decreased**. This caused the number of insects in the pond to **decrease**.”

3. Display Resource 2b: Statement 2 Poster for the student.

4. Provide Resource 3: Cards 3e – 3f to the student.

5. Indicate Resource 1, Resource 2b, and Resource 3.

<b>SAY</b>	“We will use the data on pond organisms to complete Statement 2 using the increase and decrease Cards.”
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6. **SAY** “In year 3, there was a lot of rain that filled the pond to 9 feet (*indicate year 3 on data table*). The number of insects in the pond increased. Statement 2 says, ‘In Year 3, the increase in the number of insects in the pond caused the number of frogs in the pond to **‘blank’**.”

7. **SAY** “Let’s use an increase or decrease Card to fill in the blank in Statement 2.”

8. Provide Resource 3: Cards 3e and Card 3f to the student. Indicate and read each Card.

a. Indicate Card 3e.

<b>SAY</b>	“increase”
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b. Indicate Card 3f.

<b>SAY</b>	“decrease”
------------	------------

9. 

<b>SAY AGAIN</b>	“Let’s use an increase or decrease Card to fill in the blank of Statement 2.”
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10. Allow student to respond and record response.

11. If the student chose the correct answer, place the chosen answer Card in the blank.

12. 

<b>SAY</b>	“In Year 3, the increase in the number of insects in the pond caused the number of frogs in the pond to <b>increase</b> .”
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13. 

<b>SAY</b>	“We are now finished with this activity.”
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**Correct answers are as follows:**

1. Let’s use the increase or decrease Cards to fill in the blanks of Statement 1.
  - a. decreased (Card 3b), decrease (Card 3c)
2. Let’s use an increase or decrease Card to fill in the blank in Statement 2.
  - a. increase (Card 3e)

Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"> <li>• gives NO response.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to complete Statement 1 using the decrease(d) Cards (Card 3b and Card 3c); <b>and</b></li> <li>• is unable to complete Statement 2 using an increase Card (Card 3e).</li> </ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"> <li>• is able to complete Statement 1 using the decrease(d) Cards (Card 3b and Card 3c); <b>and</b></li> <li>• is unable to complete Statement 2 using an increase Card (Card 3e).</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to complete Statement 1 using the decrease(d) Cards (Card 3b and Card 3c); <b>and</b></li> <li>• <b>after scaffolding</b>, is able to complete Statement 2 using an increase Card (Card 3e).</li> </ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"> <li>• is able to complete Statement 1 using the decrease(d) Cards (Card 3b and Card 3c); <b>and</b></li> <li>• is able to complete Statement 2 using an increase Card (Card 3e).</li> </ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 7

**Essence Statement:** CTAS-3-LS4-4 Given evidence, compare possible solutions to a problem that causes changes in an environment affecting the plants and animals that live there.\*

**Core Extension 7:** When given an environmental problem, identify a way to help reduce the harmful effects on plants or animals. (CTAS-3-LS4-4)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 7 Resource 1: Healthy Pond Environment Poster
- Activity 7 Resource 2: Unhealthy Pond Environment Poster
- Activity 7 Resource 3: Strips 3a – 3c
  - Strip 3a – too few people
  - Strip 3b – too much trash
  - Strip 3c – too many animals
- Activity 7 Resource 4: Strips 4a – 4c
  - Strip 4a – remove animals
  - Strip 4b – more people
  - Strip 4c – trash bins

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about how we can make a pond environment healthy.”

2. Display Resource 1: Healthy Pond Habitat Poster for the student.

3. Indicate Resource 1.

**SAY** “This is a healthy pond environment with many plants and animals living there.”

4. Display Resource 2: Unhealthy Pond Environment Poster for the student.

5. Indicate Resource 2.

**SAY** “This is the same pond a few years later. The pond is now an unhealthy environment. There is trash on the banks and in the water (*indicate trash on poster*). For example, plastic rings from soda cans can harm animals such as frogs. There are only a few animals in and around the pond.”

6. **ASK** “What is one problem that made the pond environment unhealthy?”

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

a. Indicate Strip 3a.

**SAY** “too few people near the pond”

b. Indicate Strip 3b.

<b>SAY</b>	“too much trash in the pond”
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c. Indicate Strip 3c.

<b>SAY</b>	“too many animals in the pond”
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8. **ASK AGAIN** “What is one problem that made the pond environment unhealthy?”

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

10. Indicate Strip 3b.

<b>SAY</b>	“One problem that made the pond environment unhealthy is that there is too much trash in the pond.”
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11. **ASK** “How can we make the pond environment healthy again?”

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

a. Indicate Strip 4a.

<b>SAY</b>	“remove animals from the pond”
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b. Indicate Strip 4b.

<b>SAY</b>	“invite more people to the pond”
------------	----------------------------------

c. Indicate Strip 4c.

<b>SAY</b>	“place the trash from the pond in trash bins”
------------	---

13. **ASK AGAIN** “How can we make the pond environment healthy again?”

14. Allow student to respond and record response.

15. Indicate Strip 4c.

<b>SAY</b>	“One way that we make the pond environment healthy again is to place the trash from the pond in trash bins.”
------------	--

16. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

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

<b>SAY</b>	“One problem that made the pond environment unhealthy is that there is too much trash in the pond.”
------------	---

2. **ASK** “How can we make the pond environment healthy again?”

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

- a. Indicate Strip 4a.

<b>SAY</b>	“remove animals from the pond”
------------	--------------------------------

- b. Indicate Strip 4b.

<b>SAY</b>	“invite more people to the pond”
------------	----------------------------------

- c. Indicate Strip 4c.

<b>SAY</b>	“place the trash from the pond in trash bins”
------------	---

4. **ASK AGAIN** “How can we make the pond environment healthy again?”

5. Allow student to respond and record response.

6. Indicate Strip 4c.

<b>SAY</b>	“One way that we make the pond environment healthy again is to place the trash from the pond in trash bins.”
------------	--

7. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. What is one problem that made the pond environment unhealthy?
  - a. Strip 3b – too much trash in the pond
2. How can we make the pond environment healthy again?
  - a. Strip 4c – place the trash from the pond in trash bins



Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the environmental problem (Strip 3b); <b>and</b></li><li>is unable to identify a way to reduce the harmful effects on the pond environment (Strip 4c).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify the environmental problem in the pond (Strip 3b); <b>and</b></li><li>is unable to identify a way to reduce the harmful effects on the pond environment (Strip 4c).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the environmental problem (Strip 3b); <b>and</b></li><li><b>after scaffolding</b>, is able to identify a way to reduce the harmful effects on the pond environment (Strip 4c).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify the environmental problem in the pond (Strip 3b); <b>and</b></li><li>is able to identify a way to reduce the harmful effects on the pond environment (Strip 4c).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 8

**Essence Statement:** CTAS-3-LS4-4 Given evidence, compare possible solutions to a problem that causes changes in an environment affecting the plants and animals that live there.\*

**Core Extension 8:** From two possible solutions, compare them and select one that may prevent environmental problems that affect plants or animals. (CTAS-3-LS4-4)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 8 Resource 1: *Use Activity 7 Resource 2: Unhealthy Pond Environment Poster*
- Activity 8 Resource 2: Card 2a and Card 2b
  - Card 2a – trash can
  - Card 2b – rowboat
- Activity 8 Resource 3: Strips 3a – 3c
  - Strip 3a – not move fast
  - Strip 3b – not have motors
  - Strip 3c – not make noise

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about an unhealthy pond environment.”

2. Display Resource 1: Unhealthy Pond Environment Poster for the student.

3. Indicate Resource 1.

**SAY** “This is an unhealthy pond environment. There is a motorboat on the pond. There is oil floating on top of the pond water. The motorboat spilled oil from the engine. The oil from the engine made the pond water unhealthy. The water is dirty. Few fish live there. There are not many birds. The grass around the pond is brown.”

4. **SAY** “Let’s look at two possible solutions to help the pond become healthy again. Place trash cans near the pond or only use rowboats in the pond.”

5. **ASK** “What is the best solution that would help the pond to become healthy again?”

6. Provide Resource 2: Card 2a and Card 2b to the student. Indicate and describe each Card.

a. Indicate Card 2a.

**SAY** “place trash cans near the pond”

b. Indicate Card 2b.

**SAY** “only use rowboats in the pond”

7. **ASK AGAIN** “What is the best solution that would help the pond to become healthy again?”
8. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
9. Indicate Card 2b.
- SAY** “Using only rowboats in the pond is the best solution that would help the pond to become healthy again.”
10. **ASK** “Why would using only rowboats in the pond help the pond to become healthy?”
11. Provide Resource 3: Strips 3a – 3c to the student. Indicate and describe each Strip.
- a. Indicate Strip 3a.
- SAY** “because rowboats do **not move fast** in the water”
- b. Indicate Strip 3b.
- SAY** “because rowboats do **not have motors** that use oil”
- c. Indicate Strip 3c.
- SAY** “because rowboats do **not make** a lot of **noise**”
12. **ASK AGAIN** “Why would using only rowboats in the pond help the pond to become healthy?”
13. Allow student to respond and record response.
14. Indicate Strip 3b.
- SAY** “Using only rowboats in the pond would help the pond to become healthy because rowboats do **not have motors** that use oil.”
15. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

1. Indicate Card 2b.

<b>SAY</b>	“Using only rowboats in the pond is the best solution that would help the pond to become healthy again.”
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2. **ASK** “Why would using only rowboats in the pond help the pond to become healthy?”

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

- a. Indicate Strip 3a.

<b>SAY</b>	“because rowboats do <b>not move fast</b> in the water”
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- b. Indicate Strip 3b.

<b>SAY</b>	“because rowboats do <b>not have motors</b> that use oil”
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- c. Indicate Strip 3c.

<b>SAY</b>	“because rowboats do <b>not make</b> a lot of <b>noise</b> ”
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4. **ASK AGAIN** “Why would using only rowboats in the pond help the pond to become healthy?”

5. Allow student to respond and record response.

6. Indicate Strip 3b.

<b>SAY</b>	“Using only rowboats in the pond would help the pond to become healthy because rowboats do <b>not have motors</b> that use oil.”
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7. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. What is the best solution that would help the pond to become healthy again?
  - a. Card 2b – only use rowboats in the pond
2. Why would using only rowboats in the pond help the pond to become healthy?
  - a. Strip 3b – because rowboats do **not have motors** that use oil



Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the best solution that would help the pond to become healthy again (Card 2b); <b>and</b></li><li>is unable to identify why only using the rowboats in the pond would fix the problem of the unhealthy pond environment (Strip 3b).</li></ul>	<p>The student <b>does not</b> demonstrate understanding.</p>	0
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify the best solution that would help the pond to become healthy again (Card 2b); <b>and</b></li><li>is unable to identify why only using the rowboats in the pond would fix the problem of the unhealthy pond environment (Strip 3b).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the best solution that would help the pond to become healthy again (Card 2b); <b>and</b></li><li><b>after scaffolding</b>, is able to identify why only using the rowboats in the pond would fix the problem of the unhealthy pond water (Strip 3b).</li></ul>	<p>The student demonstrates limited understanding typically requiring additional support through scaffolding.</p>	1
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify the best solution that would help the pond to become healthy again (Card 2b); <b>and</b></li><li>is able to identify why only using the rowboats in the pond would fix the problem of the unhealthy pond water (Strip 3b).</li></ul>	<p>The student demonstrates understanding independently without scaffolding.</p>	2





**Connecticut  
Alternate  
Science  
Assessment**

# Grade 5 Performance Tasks

## Physical Science

Storyline 5: Forces and Motion

Storyline 6: Using Energy Every Day





Connecticut  
Alternate  
Science  
Assessment

# **Physical Science**

## Storyline 5: Forces and Motion

Grade 5 Performance Task





**Physical Science**  
**Storyline 5: Forces and Motion**  
**Grade 5 Performance Task**

**Guiding Questions:** What makes objects move? How can the pattern of an object’s motion be described?

NGSS Learning Progressions	Grade 5		
	NGSS Standard Performance Expectations	Connecticut Alternate Science Essence Statements	Core Extensions
PS2.A Forces and Motion	<p>3-PS2-1 Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.</p> <p>3-PS2-2 Make observations and/or measurements of an object’s motion to provide evidence that a pattern can be used to predict future motion.</p>	<p>CTAS-3-PS2-1 Use the results of an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.</p> <p>CTAS-3-PS2-2 Make observations and/or measurements to show the pattern of an object’s motion in order to make predictions.</p>	<ol style="list-style-type: none"> <li>1. Identify a force as a push or pull on an object. (CTAS-3-PS2-1)</li> <li>2. Recognize that an unbalanced force can cause an object to move. (CTAS-3-PS2-1)</li> <li>3. Recognize that balanced forces do not cause an object to move or change motion. (CTAS-3-PS2-1)</li> <li>4. Use the results of an investigation as evidence that two or more unbalanced forces will cause an object to move. (CTAS-3-PS2-1)</li> <li>5. Make one qualitative observation about the pattern of an object in motion. (CTAS-3-PS2-2)</li> <li>6. Make two quantitative observations to show the pattern of the motion of an object. (CTAS-3-PS2-2)</li> <li>7. Make a prediction about the effect of a change in one variable on the motion of an object. (CTAS -3-PS2-2)</li> </ol>
Appropriate Vocabulary	Force = a push or a pull; balanced = equal and opposite; unbalanced = not equal; variable; trial; distance		



**Physical Science**  
**Storyline 5: Forces and Motion**  
**Grade 5 Performance Task**

General Overview:

Students will view a series of images and a tug of war investigation related to forces. Students will participate in a guided, hands-on investigation using a toy car rolling down a ramp to make observations and measurements about its motion when a force is applied. Students should be informed that this performance task will focus on forces (push or pull). Forces are all around us and they affect the motion of different objects, such as a toy car that is pushed or that rolls down a ramp.

List of Materials Needed:

*Teacher-Provided Resources:*

**ACTIVITY 5 & ACTIVITY 6**

Use the materials and instructions included in Activity 5: Resource 3 to set up the investigation according to the diagram included in Activity 5: Resource 4. **Teacher must set up and test the investigation prior to introducing the investigation to the student.** Teacher-Provided Resources include:

- Table/Floor
- 3 Books
- Toy Car (or a Ball)
- Tape
- Measuring Device (Meter Stick, Yard Stick, or Measuring Tape)\*

\*Best practice is to use metric measuring devices and units.

*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: Sled Poster
- Activity 1 Resource 2: Card 2a and Card 2b
  - Card 2a – Push
  - Card 2b – Pull
- Activity 1 Resource 3: Swing Poster
- Activity 1 Resource 4: Card 4a and Card 4b
  - Card 4a – Push
  - Card 4b – Pull
- Activity 2 Resource 1: *Use Activity 1 Resource 1: Sled Poster*

- Activity 2 Resource 2: Cards 2a – 2c
  - Card 2a – forward
  - Card 2b – backward
  - Card 2c – stays still
- Activity 2 Resource 3: *Use Activity 1 Resource 3: Swing Poster*
- Activity 2 Resource 4: Cards 4a – 4c
  - Card 4a – forward
  - Card 4b – backward
  - Card 4c – stays still
- Activity 2 Resource 5: Boy and Wagon Poster
- Activity 2 Resource 6: Card 6a and Card 6b
  - Card 6a – pull
  - Card 6b – push
- Activity 3 Resource 1: Pushing a Box Poster
- Activity 3 Resource 2: Card 2a and Card 2b
  - Card 2a – yes
  - Card 2b – no
- Activity 3 Resource 3: Pulling on a Toy Cart Poster
- Activity 4 Resource 1: Results of the Tug of War Investigation Data Table Poster
- Activity 4 Resource 2: Strips 2a – 2c
  - Strip 2a – not move
  - Strip 2b – left
  - Strip 2c – right
- Activity 4 Resource 3: Cards 3a – 3c
  - Card 3a – Trial 1
  - Card 3b – Trial 2
  - Card 3c – Trial 3
- Activity 5 Resource 1: Toy Car on Ramp Poster
- Activity 5 Resource 2: Sentence Strips 2a – 2c
  - Sentence Strip 2a – not move
  - Sentence Strip 2b – down
  - Sentence Strip 2c – up
- Activity 5 Resource 3: Teacher Directions for Toy Car Investigation – Materials
- Activity 5 Resource 4: Teacher Directions for Toy Car Investigation – Diagram
- Activity 5 Resource 5: Strips 5a – 5c
  - Strip 5a – not move
  - Strip 5b – down
  - Strip 5c – up
- Activity 6 Resource 1: Toy Car Investigation Data Table Poster

- Activity 6 Resource 2: Strips 2a – 2c
  - Strip 2a – longer distance
  - Strip 2b – shorter distance
  - Strip 2c – same distance
- Activity 6 Resource 3: *Use Activity 5 Resource 3: Teacher Directions for Toy Car Investigation – Materials*
- Activity 6 Resource 4: *Use Activity 5 Resource 4: Teacher Directions for Toy Car Investigation – Diagram*
- Activity 7 Resource 1: *Use Completed Activity 6 Resource 1: Toy Car Investigation Data Table Poster*
- Activity 7 Resource 2: Strips 2a – 2c
  - Strip 2a – longer distance
  - Strip 2b – shorter distance
  - Strip 2c – same distance

## ACTIVITY 1

**Essence Statement:** CTAS-3-PS2-1 Use the results of an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

**Core Extension 1:** Identify a force as a push or pull on an object. (CTAS-3-PS2-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 1 Resource 1: Sled Poster
- Activity 1 Resource 2: Card 2a and Card 2b
  - Card 2a – Push
  - Card 2b – Pull
- Activity 1 Resource 3: Swing Poster
- Activity 1 Resource 4: Card 4a and Card 4b
  - Card 4a – Push
  - Card 4b – Pull

### Steps to Follow:

1. 

<b>SAY</b>	“In this activity, we are going to talk about forces.”
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2. Display Resource 1: Sled Poster for the student.
3. Indicate Resource 1.
 

<b>SAY</b>	“This picture shows a snowy day. There are children sitting on a sled. The tall girl is bringing them up the hill.”
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4. 

<b>ASK</b>	“What type of force is the girl using to bring the children up the hill?”
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5. Provide Resource 2: Card 2a and Card 2b to the student. Indicate and describe each Card.
  - a. Indicate Card 2a.
 

<b>SAY</b>	“This is a <b>push</b> force.”
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  - b. Indicate Card 2b.
 

<b>SAY</b>	“This is a <b>pull</b> force.”
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6. 

<b>ASK AGAIN</b>	“What type of force is the girl using to bring the children up the hill?”
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7. 

Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
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8. Place Card 2b in the small box below the sled picture.

<b>SAY</b>	“The girl is pulling the children up the hill. This is a <b>pull</b> force.”
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9. Display Resource 3: Swing Poster for the student.

10. Indicate Resource 3.

<b>SAY</b>	“This is a picture of a man and a boy playing with a swing. The boy is sitting on the swing.”
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11. **ASK** “Look at the force the man is putting on the boy in the swing. What type of force is this?”

12. Provide Resource 4: Card 4a and Card 4b to the student. Indicate and describe each Card.

a. Indicate Card 4a.

<b>SAY</b>	“This is a <b>push</b> force.”
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b. Indicate Card 4b.

<b>SAY</b>	“This is a <b>pull</b> force.”
------------	--------------------------------

13. **ASK AGAIN** “Look at the force the man is putting on the boy in the swing. What type of force is this?”

14. Allow student to respond and record response.

15. Place Card 4a in the small box below the swing picture.

<b>SAY</b>	“The man is pushing the boy on the swing. This is a <b>push</b> force.”
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16. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

1. After student makes first incorrect attempt, place Card 2b in the small box below the sled picture.

<b>SAY</b>	“The girl is pulling the children up the hill. This is a <b>pull</b> force.”
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2. Display Resource 3: Swing Poster for the student.
3. Indicate Resource 3.

<b>SAY</b>	“This is a picture of a man and a boy playing with a swing. The boy is sitting on the swing.”
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4. **ASK** “Look at the force the man is putting on the boy in the swing. What type of force is this?”

5. Provide Resource 4: Card 4a and Card 4b to the student. Indicate and describe each Card.

- a. Indicate Card 4a.

<b>SAY</b>	“This is a <b>push</b> force.”
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- b. Indicate Card 4b.

<b>SAY</b>	“This is a <b>pull</b> force.”
------------	--------------------------------

6. **ASK AGAIN** “Look at the force the man is putting on the boy in the swing. What type of force is this?”

7. Allow student to respond and record response.

8. Place Card 4a in the small box below the swing picture.

<b>SAY</b>	“The man is pushing the boy on the swing. This is a <b>push</b> force.”
------------	---

9. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. What type of force is the girl using to bring the children up the hill?
  - a. Card 2b – This is a **pull** force.
2. Look at the force the man is putting on the boy in the swing. What type of force is this?
  - a. Card 4a – This is a **push** force.



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the force the girl is using to bring the children up the hill (Card 2b); <b>and</b></li><li>is unable to identify the force the man is putting on the boy in the swing (Card 4a).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to identify the force the girl is using to bring the children up the hill (Card 2b); <b>and</b></li><li>is unable to identify the force the man is putting on the boy in the swing (Card 4a).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the force the girl is using to bring the children up the hill (Card 2b); <b>and</b></li><li><b>after scaffolding</b>, is able to identify the force the man is putting on the boy in the swing (Card 4a).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to identify the force the girl is using to bring the children up the hill (Card 2b); <b>and</b></li><li>is able to identify the force the man is putting on the boy in the swing (Card 4a).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 2

**Essence Statement:** CTAS-3-PS2-1 Use the results of an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

**Core Extension 2:** Recognize that an unbalanced force can cause an object to move. (CTAS-3-PS2-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 2 Resource 1: *Use Activity 1 Resource 1: Sled Poster*
- Activity 2 Resource 2: Cards 2a – 2c
  - Card 2a – forward
  - Card 2b – backward
  - Card 2c – stays still
- Activity 2 Resource 3: *Use Activity 1 Resource 3: Swing Poster*
- Activity 2 Resource 4: Cards 4a – 4c
  - Card 4a – forward
  - Card 4b – backward
  - Card 4c – stays still
- Activity 2 Resource 5: Boy and Wagon Poster
- Activity 2 Resource 6: Card 6a and Card 6b
  - Card 6a – pull
  - Card 6b – push

### Steps to Follow:

1. Display Resource 1: Sled Poster for the student.

2. Indicate Resource 1.

<b>SAY</b>	“This picture shows a girl pulling children on a sled on a snowy day.”
------------	--

3. **ASK** “What happens when the girl pulls the sled?”

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

a. Indicate Card 2a.

<b>SAY</b>	“The sled moves <b>forward.</b> ”
------------	-----------------------------------

b. Indicate Card 2b.

<b>SAY</b>	“The sled moves <b>backward.</b> ”
------------	------------------------------------

c. Indicate Card 2c.

<b>SAY</b>	“The sled <b>stays still.</b> ”
------------	---------------------------------

5. **ASK AGAIN** “What happens when the girl pulls the sled?”

6. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
7. Indicate Card 2a.
- |            |   |
|------------|---|
| <b>SAY</b> | “The sled moves <b>forward</b> when the girl pulls the sled.” |
|------------|---|
8. Display Resource 3: Swing Poster for the student.
9. Indicate Resource 3.
- |            |  |
|------------|--|
| <b>SAY</b> | “This picture shows a man pushing the boy on a swing.” |
|------------|--|
10. **ASK** “What happens when the man pushes the swing?”
11. Provide Resource 4: Cards 4a – 4c to the student. Indicate and describe each Card.
- a. Indicate Card 4a.
- |            |                                    |
|------------|------------------------------------|
| <b>SAY</b> | “The swing moves <b>forward</b> .” |
|------------|------------------------------------|
- b. Indicate Card 4b.
- |            |                                     |
|------------|-------------------------------------|
| <b>SAY</b> | “The swing moves <b>backward</b> .” |
|------------|-------------------------------------|
- c. Indicate Card 4c.
- |            |                                  |
|------------|----------------------------------|
| <b>SAY</b> | “The swing <b>stays still</b> .” |
|------------|----------------------------------|
12. **ASK** “What happens when the man pushes the swing?”  
**AGAIN**
13. Allow student to respond and record response.
14. Indicate Card 4a.
- |            |  |
|------------|--|
| <b>SAY</b> | “The swing moves <b>forward</b> when the man pushes the boy on the swing.” |
|------------|--|
15. Display Resource 5: Boy and Wagon Poster for the student.
16. Indicate Resource 5.
- |            |   |
|------------|---|
| <b>SAY</b> | “This picture shows a boy holding the handle of a wagon.” |
|------------|---|
17. **ASK** “What force should the boy use to make the wagon roll toward him?”
18. Provide Resource 6: Card 6a and Card 6b. Indicate and describe each Card.
- a. Indicate Card 6a.
- |            |                       |
|------------|-----------------------|
| <b>SAY</b> | “a <b>pull</b> force” |
|------------|-----------------------|



b. Indicate Card 6b.

<b>SAY</b>	"a <b>push</b> force"
------------	-----------------------

19. **ASK** "What force should the boy use to make the wagon roll toward him?"

**AGAIN**

20. Allow student to respond and record response.

21. Indicate Card 6a.

<b>SAY</b>	"The boy should use a <b>pull</b> force to make the wagon roll toward him."
------------	---

22. **SAY** "We are now finished with this activity."

## Scoring Guidance and Scaffolding

### Scaffolding:

*Note: Optionally, you may ask the student the third question, “What force should the boy use to make the wagon roll toward him?” 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 2a.

<b>SAY</b>	“The sled moves <b>forward</b> when the girl pulls the sled.”
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2. Display Resource 3: Swing Poster for the student.
3. Indicate Resource 3.

<b>SAY</b>	“This picture shows a man pushing the boy on a swing.”
------------	--

4. **ASK** “What happens when the man pushes the swing?”

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

- a. Indicate Card 4a.

<b>SAY</b>	“The swing moves <b>forward</b> .”
------------	------------------------------------

- b. Indicate Card 4b.

<b>SAY</b>	“The swing moves <b>backward</b> .”
------------	-------------------------------------

- c. Indicate Card 4c.

<b>SAY</b>	“The swing <b>stays still</b> .”
------------	----------------------------------

6. **ASK AGAIN** “What happens when the man pushes the swing?”

7. Allow student to respond and record response.

8. Indicate Card 4a.

<b>SAY</b>	“The swing moves <b>forward</b> when the man pushes the boy on the swing.”
------------	--

### Correct answers are as follows:

1. What happens when the girl pulls the sled?
  - a. Card 2a – The sled moves **forward** when the girl pulls the sled.
2. What happens when the man pushes the swing?
  - a. Card 4a – The swing moves **forward** when the man pushes the boy on the swing.
3. What force should the boy use to make the wagon roll toward him?
  - a. Card 6a – pull



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the movement of <b>either</b> the sled (Card 2a) <b>or</b> the swing (Card 4a) when a force acts on the object; <b>and</b></li><li>is unable to identify the force that the boy should use to make the wagon roll toward him (Card 6a).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to identify the movement of the sled (Card 2a) <b>and/or</b> the swing (Card 4a) when a force acts on the object; <b>and</b></li><li>is unable to identify the force that the boy should use to make the wagon roll toward him (Card 6a).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the movement of the sled (Card 2a) when a force acts on the object; <b>and</b></li><li><b>after scaffolding</b>, is able to identify the movement of the swing (Card 4a) when a force acts on the object.</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to identify the movement of <b>both</b> the sled (Card 2a) <b>and</b> the swing (Card 4a) when a force acts on the object; <b>and</b></li><li>is able to identify the force that the boy should use to make the wagon roll toward him (Card 6a).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

### ACTIVITY 3

**Essence Statement:** CTAS-3-PS2-1 Use the results of an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

**Core Extension 3:** Recognize that balanced forces do not cause an object to move or change motion. (CTAS-3-PS2-1)

**Teacher Notes:**

Collect the following resources for this activity:

- Activity 3 Resource 1: Pushing a Box Poster
- Activity 3 Resource 2: Card 2a and Card 2b
  - Card 2a – yes
  - Card 2b – no
- Activity 3 Resource 3: Pulling on a Toy Cart Poster

**Steps to Follow:**

1. 

<b>SAY</b>	“In the last activity, we learned that unbalanced forces move objects. The girl used an unbalanced force called a ‘pull’ to make the sled move. The boy put an unbalanced force called a ‘push’ to move the swing. In this activity, we are going to talk about when forces do <b>not</b> move an object. When forces are equal, but in opposite directions we call them balanced forces. If forces are balanced, the object will not move.”
------------	--

2. Display Resource 1: Pushing a Box Poster for the student.

3. Indicate Resource 1.

<b>SAY</b>	“In this picture, two girls are pushing on the box with the same amount of force. One girl pushes on the right side of the box. Another girl pushes on the left side of the box. These two girls are pushing on the box in opposite directions.”
------------	--

4. 

<b>ASK</b>	“Will the box move?”
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5. Provide Resource 2: Card 2a and Card 2b to the student. Indicate and read each Card.

a. Indicate Card 2a.

<b>SAY</b>	“yes”
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b. Indicate Card 2b.

<b>SAY</b>	“no”
------------	------

6. 

<b>ASK AGAIN</b>	“Will the box move?”
----------------------	----------------------

7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
8. Indicate Card 2b.
- |            |   |
|------------|---|
| <b>SAY</b> | “Each girl is pushing on the box with the same amount of force in opposite directions. Since the girls push with the same amount of force, the box will not move. So, ‘no’, the box will not move.” |
|------------|---|
9. Display Resource 3: Pulling on a Toy Cart Poster for the Student.
10. Indicate Resource 3.
- |            |  |
|------------|--|
| <b>SAY</b> | “This is a picture of two children pulling on either side of a toy cart. Both children are pulling on the cart with the same amount of force.” |
|------------|--|
11. **ASK** “Will the toy cart move?”
12. Provide Resource 2: Card 2a and Card 2b to the student. Indicate and read each Card.
- a. Indicate Card 2a.
- |            |       |
|------------|-------|
| <b>SAY</b> | “yes” |
|------------|-------|
- b. Indicate Card 2b.
- |            |      |
|------------|------|
| <b>SAY</b> | “no” |
|------------|------|
13. **ASK AGAIN** “Will the toy cart move?”
14. Allow student to respond and record response.
15. Indicate Card 2b.
- |            |   |
|------------|---|
| <b>SAY</b> | “Both children are pulling on the toy cart with the same amount of force in opposite directions. So, ‘no’, the toy cart will not move.” |
|------------|---|
16. **SAY** “We are now finished with this activity.”



## Scoring Guidance and Scaffolding

### Scaffolding:

1. Indicate Card 2b.

<b>SAY</b>	“Each girl is pushing on the box with the same amount of force in opposite directions. Since the girls push with the same amount of force, the box will not move. So, ‘ <b>no</b> ’, the box will not move.”
------------	--

2. Display Resource 3: Pulling on a Toy Cart Poster for the Student.

3. Indicate Resource 3.

<b>SAY</b>	“This is a picture of two children pulling on either side of a toy cart. Both children are pulling on the cart with the same amount of force.”
------------	--

4. 

<b>ASK</b>	“Will the toy cart move?”
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5. Provide Resource 2: Card 2a and Card 2b to the student. Indicate and read each Card.

- a. Indicate Card 2a.

<b>SAY</b>	“yes”
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- b. Indicate Card 2b.

<b>SAY</b>	“no”
------------	------

6. 

<b>ASK AGAIN</b>	“Will the toy cart move?”
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7. Allow student to respond and record response.

8. Indicate Card 2b.

<b>SAY</b>	“Both children are pulling on the toy cart with the same amount of force in opposite directions. So, ‘ <b>no</b> ’, the toy cart will not move.”
------------	--

9. 

<b>SAY</b>	“We are now finished with this activity.”
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### Correct answers are as follows:

1. Will the box move?
  - a. Card 2b – no
2. Will the toy cart move?
  - a. Card 2b – no



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify that the box will not move (Card 2b); <b>and</b></li><li>is unable to identify that the toy cart will not move (Card 2b).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to identify that the box will not move (Card 2b); <b>and</b></li><li>is <b>unable</b> to identify that the toy cart will not move (Card 2b).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify that the box will not move (Card 2b); <b>and</b></li><li><b>after scaffolding</b>, is able to identify that the toy cart will not move (Card 2b).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to identify that the box will not move (Card 2b); <b>and</b></li><li>is able to identify that the toy cart will not move (Card 2b).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

#### ACTIVITY 4

**Essence Statement:** CTAS-3-PS2-1 Use the results of an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

**Core Extension 4:** Use the results of an investigation as evidence that two or more unbalanced forces will cause an object to move. (CTAS-3-PS2-1)

**Teacher Notes:**

Collect the following resources for this activity:

- Activity 4 Resource 1: Results of the Tug of War Investigation Data Table Poster
- Activity 4 Resource 2: Strips 2a – 2c
  - Strip 2a – not move
  - Strip 2b – left
  - Strip 2c – right
- Activity 4 Resource 3: Cards 3a – 3c
  - Card 3a – Trial 1
  - Card 3b – Trial 2
  - Card 3c – Trial 3

**Steps to Follow:**

1.	<b>SAY</b>	“In this activity, we are going to talk about students in a class who were studying forces by playing tug of war. The children are the same size. Each pulls the rope with the same force. They tied a ribbon in the middle of the rope. The students observed how the rope moves when different numbers of students pull the rope on each side. They observed the movement of the ribbon during the tug of war and recorded their results during each Trial.”
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2. Display Resource 1: Tug of War Investigation Data Table Poster for the student.

3. Indicate Resource 1.

	<b>SAY</b>	“The students recorded their results of the investigation in this data table. The data table is titled ‘ <b>Results of the Tug of War Investigation</b> ’ ( <i>indicate the title</i> ). ( <i>Indicate the ‘Trial 1’ row</i> ). During Trial 1, there were 3 students pulling the rope on the left side and 3 students pulling the rope on the right side. ( <i>Indicate the ‘Movement of the Ribbon’ column for ‘Trial 1’</i> ). The ribbon did not move. ( <i>Indicate the ‘Trial 2’ row</i> .) During Trial 2, there was 1 student pulling the rope on the left side and 3 students pulling the rope on the right side. ( <i>Indicate the ‘Movement of the Ribbon’ column for ‘Trial 2’</i> ). The ribbon moved to the right. ( <i>Indicate the ‘Trial 3’ row</i> ). During Trial 3, there were 3 students pulling the rope on the left side and 1 student pulling the rope on the right side.”
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4.	<b>ASK</b>	“In which direction will the ribbon move during Trial 3?”
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5. Provide Resource 2: Strips 2a – 2c to the student. Indicate and read each Strip.

a. Indicate Strip 2a.

<b>SAY</b>	“will not move”
------------	-----------------

b. Indicate Strip 2b.

<b>SAY</b>	“will move to the left”
------------	-------------------------

c. Indicate Strip 2c.

<b>SAY</b>	“will move to the right”
------------	--------------------------

6. **ASK** “In which direction will the ribbon move during Trial 3?”

**AGAIN**

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

8. Indicate Strip 2b.

<b>SAY</b>	“The ribbon will move to the left during Trial 3.”
------------	--

9. **ASK** “Which trial shows a force that is greater on the right side than the force on the left side?”

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

a. Indicate Card 3a.

<b>SAY</b>	“Trial 1”
------------	-----------

b. Indicate Card 3b.

<b>SAY</b>	“Trial 2”
------------	-----------

c. Indicate Card 3c.

<b>SAY</b>	“Trial 3”
------------	-----------

11. **ASK** “Which trial shows a force that is greater on the right side than the force on the left side?”

**AGAIN**

12. Allow student to respond and record response.

13. Indicate Card 3b.

<b>SAY</b>	“Trial 2 shows a greater force on the right side because there are 3 children on the right and only 1 child on the left.”
------------	---

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

### Scoring Guidance and Scaffolding

#### Scaffolding:

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

**SAY** "The ribbon will move to the left during Trial 3."

2. **ASK** "Which trial shows a force that is greater on the right side than the force on the left side?"

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

- a. Indicate Card 3a.

**SAY** "Trial 1"

- b. Indicate Card 3b.

**SAY** "Trial 2"

- c. Indicate Card 3c.

**SAY** "Trial 3"

4. **ASK AGAIN** "Which trial shows a force that is greater on the right side than the force on the left side?"

5. Allow student to respond and record response.

6. Indicate Card 3b.

**SAY** "Trial 2 shows a greater force on the right side because there are 3 children on the right and only 1 child on the left."

#### Correct answers are as follows:

1. In which direction will the ribbon move during Trial 3?
  - a. Strip 2b – moved to the left
2. Which trial shows a force that is greater on the right side than the force on the left side?
  - a. Card 3b – Trial 2



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the direction that the ribbon will move in Trial 3 (Strip 2b); <b>and</b></li><li>is unable to identify that Trial 2 had a force that was greater on the right side than the force on the left side (Card 3b).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to identify the direction that the ribbon will move in Trial 3 (Strip 2b); <b>and</b></li><li>is <b>unable</b> to identify that Trial 2 had a force that was greater on the right side than the force on the left side (Card 3b).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the direction that the ribbon will move in Trial 3 (Strip 2b); <b>and</b></li><li><b>after scaffolding</b>, is able to identify that Trial 2 had a force that was greater on the right side than the force on the left side (Card 3b).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to identify the direction that the ribbon will move in Trial 3 (Strip 2b); <b>and</b></li><li>is able to identify that Trial 2 had a force that was greater on the right side than the force on the left side (Card 3b).</li></ul>	The student demonstrates understanding independently without scaffolding.	2



## ACTIVITY 5

**Essence Statement:** CTAS-3-PS2-2 Make observations and/or measurements to show the pattern of an object's motion in order to make predictions.

**Core Extension 5:** Make one qualitative observation about the pattern of an object in motion. (CTAS-3-PS2-2)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 5 Resource 1: Toy Car on Ramp Poster
- Activity 5 Resource 2: Sentence Strips 2a – 2c
  - Sentence Strip 2a – not move
  - Sentence Strip 2b – down
  - Sentence Strip 2c – up
- Activity 5 Resource 3: Teacher Directions for Toy Car Investigation – Materials
- Activity 5 Resource 4: Teacher Directions for Toy Car Investigation – Diagram
- Activity 5 Resource 5: Strips 5a – 5c
  - Strip 5a – not move
  - Strip 5b – down
  - Strip 5c – up

### Teacher-Provided Resources:

Use the materials and instructions included in Resource 3 to set up the investigation according to the diagram included in Resource 4. **Teacher must set up and test the investigation prior to introducing the investigation to the student.** Teacher-Provided Resources include:

- Table/Floor
- 3 Books
- Toy Car (or a Ball)
- Tape
- Measuring Device (Meter Stick, Yard Stick, or Measuring Tape)\*  
\*Best practice is to use metric measuring devices and units.

*Activities 5, 6, and 7 should be completed back-to-back.*

### Steps to Follow:

1. Use the materials and instructions included in Resource 3: Teacher Directions for Toy Car Investigation – Materials to set up the investigation according to Resource 4: Teacher Directions for Toy Car Investigation – Diagram.
2. Display Resource 1: Toy Car on Ramp Poster for the student.

3. Indicate Resource 1.

<b>SAY</b>	“This is a picture of a student that is holding a toy car on at the top of a ramp. In the next activity, we will actually roll a toy car down a ramp that we create. But in this activity, I want you to predict what might happen to the car when the student lets go of the toy car. Use these Sentence Strips to predict what will happen to the toy car.”
------------	---

4. **ASK** “What will happen when the student lets go of the toy car?”

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

a. Indicate Sentence Strip 2a.

<b>SAY</b>	“The toy car will not move.”
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a. Indicate Sentence Strip 2b.

<b>SAY</b>	“The toy car will roll down the ramp.”
------------	--

a. Indicate Sentence Strip 2c.

<b>SAY</b>	“The toy car will roll up the ramp.”
------------	--------------------------------------

6. **ASK AGAIN** “What will happen when the student lets go of the toy car?”

7. Allow student to respond and record response.

*Please note that students will not be rated for predicting the correct answer – this is simply a first step to the instruction in this activity.*

8. Indicate Sentence Strip 2b.

<b>SAY</b>	“The toy car will roll down the ramp.”
------------	--

9. **SAY** “Now, you will observe what happens when we let go of the toy car at the top of the ramp.”

10. Allow the student to roll the toy car down the ramp and observe its motion three different times.

*Teacher may assist the student if necessary.*

11. **ASK** “What happens to the toy car when it is let go at the top of the ramp?”

12. Provide Resource 5: Strips 5a – 5c to the student. Indicate and describe each Strip.



a. Indicate Strip 5a.

<b>SAY</b>	“The toy car <b>does not move.</b> ”
------------	--------------------------------------

b. Indicate Strip 5b.

<b>SAY</b>	“The toy car <b>rolls down the ramp.</b> ”
------------	--

c. Indicate Strip 5c.

<b>SAY</b>	“The toy car <b>rolls up the ramp.</b> ”
------------	--

13. **ASK** “What happens to the toy car when it is let go at the top of the ramp?”

**AGAIN**

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

15. Indicate Strip 5b.

<b>SAY</b>	“When the toy car is let go at the top of the ramp, the toy car <b>rolls down the ramp.</b> ”
------------	---

16. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

1. After student makes first incorrect attempt, remove Strip 5a.
 

<b>SAY</b>	“The toy car <b>does not move</b> is <b>not</b> the correct answer.”
------------	--
  
2. Allow the student to roll the toy car down the ramp and observe its motion.  
*Teacher may assist the student if necessary.*
  
3.
 

<b>ASK AGAIN</b>	“What happens to the toy car when it is let go at the top of the ramp?”
----------------------	---
  
4. Provide Resource 5: Strip 5b and Strip 5c to the student. Indicate and describe each Strip.
  - a. Indicate Strip 5b.
 

<b>SAY</b>	“The toy car <b>rolls down the ramp.</b> ”
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  - b. Indicate Strip 5c.
 

<b>SAY</b>	“The toy car <b>rolls up the ramp.</b> ”
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5.
 

<b>ASK AGAIN</b>	“What happens to the toy car when it is let go at the top of the ramp?”
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6. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
  
7. Indicate Strip 5b.
 

<b>SAY</b>	“When the toy car is let go at the top of the ramp, the toy car <b>rolls down the ramp.</b> ”
------------	---
  
8.
 

<b>SAY</b>	“We are now finished with this activity.”
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### The correct answer is as follows:

1. What happens to the toy car when it is let go at the top of the ramp?
  - a. Strip 5b – The toy car **rolls down the ramp.**



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to describe that the toy car rolls down the ramp (Strip 5b).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li><b>after scaffolding</b>, is able to describe that the toy car rolls down the ramp (Strip 5b).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to describe that the toy car rolls down the ramp (Strip 5b).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 6

**Essence Statement:** CTAS-3-PS2-2 Make observations and/or measurements to show the pattern of an object’s motion in order to make predictions.

**Core Extension 6:** Make two quantitative observations to show the pattern of the motion of an object. (CTAS-3-PS2-2)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 6 Resource 1: Toy Car Investigation Data Table Poster
- Activity 6 Resource 2: Strips 2a – 2c
  - Strip 2a – longer distance
  - Strip 2b – shorter distance
  - Strip 2c – same distance
- Activity 6 Resource 3: *Use Activity 5 Resource 3: Teacher Directions for Toy Car Investigation – Materials*
- Activity 6 Resource 4: *Use Activity 5 Resource 4: Teacher Directions for Toy Car Investigation – Diagram*

### Teacher-Provided Resources:

Use the materials and instructions included in Resource 3 to set up the investigation according to the diagram included in Resource 4. **Teacher must set up and test the investigation prior to introducing the investigation to the student.** Teacher-Provided Resources include:

- Table/Floor
  - 3 Books
  - Toy Car
  - Tape
  - Measuring Device (Meter Stick, Yard Stick, or Measuring Tape)\*
- \*Best practice is to use metric measuring devices and units.

*Activities 5, 6, and 7 should be completed back-to-back.*

### Steps to Follow:

1. Use the materials and instructions included in Resource 3: Teacher Directions for Toy Car Investigation – Materials to set up the investigation according to Resource 4: Teacher Directions for Toy Car Investigation – Diagram.
2. Display Resource 1: Toy Car Investigation Data Table Poster for the student.
3. **SAY** “In this activity, you will record measurements for two different ramp heights. Then, for each ramp height, you will observe how far the toy car travels after we let go of the toy car at the top of the ramp.”

4. Indicate Resource 1.

<b>SAY</b>	“We will record our observations in this data table. The title of this data table is ‘ <b>Toy Car Investigation</b> ’ ( <i>indicate title</i> ). The first column says ‘ <b>Trial</b> ’ ( <i>indicate ‘Trial’ column</i> ). The next column says ‘ <b>Height of Ramp</b> ’ ( <i>indicate ‘Height of Ramp’ column</i> ). The last column says ‘ <b>Distance Toy Car Traveled</b> ’ ( <i>indicate ‘Distance Toy Car Traveled’ column</i> ). For Trial 1 and for Trial 2, we will measure the height of the ramp. Then we will roll the toy car down the ramp and record how far the car travels in the ‘ <b>Distance Toy Car Traveled</b> ’ column for each trial ( <i>indicate ‘Distance Toy Car Traveled’ column</i> ).”
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5. **SAY** “For Trial 1, we will have the ramp at a one-book height. Let’s measure the height of the one book.”

6. **ASK** “How tall is the one book?”

7. Allow student to record observation.  
*Teacher may assist the student if necessary.*  
Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.

8. **SAY** “Let’s roll the toy car down the ramp and see how far it goes.”

9. Allow the student to roll the toy car down the ramp and measure the distance that the toy car traveled.  
*Teacher may assist the student if necessary.*  
Place a piece of tape on the floor/table to mark the end point of the car after Trial 1 and record “1 Book” on tape.

10. **ASK** “What is the distance that the toy car traveled during Trial 1 at the one-book height? Let’s record our observations in the ‘**Distance Toy Car Traveled**’ column for Trial 1.”

11. Allow student to record observation.  
*Teacher may assist the student if necessary.*  
Allow student to respond and record response.

12. **SAY** “For Trial 2, we will have the ramp at a two-books height. Let’s measure the height of the two books.”

13. **ASK** “How tall are the two books?”
14. Allow student to record observation.  
*Teacher may assist the student if necessary.*  
Allow student to respond and record response.
15. **SAY** “Let’s roll the toy car down the ramp and see how far it goes.”
16. Allow the student to roll the toy car down the ramp and measure the distance that the toy car traveled.  
*Teacher may assist the student if necessary.*  
Place a piece of tape on the floor/table to mark the end point of the car after Trial 1 and record “2 Books” on tape.
17. **ASK** “What is the distance that the toy car traveled during Trial 2 at the two-books height? Let’s record our observations in the ‘**Distance Toy Car Traveled**’ column for Trial 2.”
18. Allow student to record observation.  
*Teacher may assist the student if necessary.*  
Allow student to respond and record response.
19. **SAY** “Let’s look at the **pattern** of the car’s motion. With one book, the toy car rolled to this first point (*indicate ‘1 Book’ tape on floor*). With two books, the toy car rolled to this second point (*indicate ‘2 Books’ tape on floor*). There is a pattern in the motion of the toy car as we added one more book to the ramp for Trial 2.”
20. **ASK** “From Trial 1 to Trial 2, did the toy car travel a longer distance, a shorter distance, or the same distance?”
21. Provide Resource 2: Strips 2a – 2c to the student. Indicate and read each Strip.
- a. Indicate Strip 2a.
- SAY** “longer distance”
- b. Indicate Strip 2b.
- SAY** “shorter distance”

c. Indicate Strip 2c.

<b>SAY</b>	“same distance”
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22. **ASK AGAIN** “From Trial 1 to Trial 2, did the toy car travel a longer distance, a shorter distance, or the same distance?”

23. Allow student to respond and record response.

24. Indicate Strip 2a.

<b>SAY</b>	“From Trial 1 to Trial 2, the toy car traveled a longer distance.”
------------	--

25. **SAY** “We are now finished with this activity.”

### Scoring Guidance and Scaffolding

#### Scaffold:

1. After student makes first incorrect attempt, assist the student in recording the height of the one book and the two books.
2. Demonstrate how to measure and record the distance the toy car travels during Trial 1 and during Trial 2.

3. **SAY** “Let’s look at the **pattern** of the car’s motion. With one book, the toy car rolled to this first point (*indicate ‘1 Book’ tape on floor*). With two books, the toy car rolled to this second point (*indicate ‘2 Books’ tape on floor*). There is a pattern in the motion of the toy car as we added one more book to the ramp for Trial 2.”

4. **ASK** “From Trial 1 to Trial 2, did the toy car travel a longer distance, a shorter distance, or the same distance?”

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

- a. Indicate Strip 2a.

**SAY** “longer distance”

- b. Indicate Strip 2b.

**SAY** “shorter distance”

- c. Indicate Strip 2c.

**SAY** “same distance”

6. **ASK AGAIN** “From Trial 1 to Trial 2, did the toy car travel a longer distance, a shorter distance, or the same distance?”

7. Allow student to respond and record response.

8. Indicate Strip 2a.

**SAY** “From Trial 1 to Trial 2, the toy car traveled a longer distance.”

9. **SAY** “We are now finished with this activity.”

**Correct answers are as follows:**

1. How tall is the one book?
  - a. Student is able to measure the height of the one book.
2. What is the distance that the toy car traveled during Trial 1 at the one-book height?
  - a. Student is able to record the distance that the toy car traveled during Trial 1.
3. How tall are the two books?
  - a. Student is able to measure the height of the two books.
4. What is the distance that the toy car traveled during Trial 2 at the two-books height?
  - a. Student is able to record the distance that the toy car traveled during Trial 2.
5. From Trial 1 to Trial 2, did the toy car travel a longer distance, a shorter distance, or the same distance?
  - a. Strip 2a – longer distance

Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"> <li>• gives NO response.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to measure <b>either</b> the height of the one book <b>or</b> the height of the two books; <b>and</b></li> <li>• is unable to record <b>either</b> the distance that the toy car traveled during Trial 1 <b>or</b> during Trial 2; <b>and</b></li> <li>• is unable to compare the difference in distance that the toy car traveled between Trial 1 and Trial 2 (Strip 2a).</li> </ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"> <li>• is able to determine any measurement; <b>and</b></li> <li>• is unable to compare the difference in distance that the toy car traveled between Trial 1 and Trial 2 (Strip 2a).</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to determine any measurement; <b>and</b></li> <li>• <b>after scaffolding</b>, is able to compare the difference in distance that the toy car traveled between Trial 1 and Trial 2 (Strip 2a).</li> </ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"> <li>• is able to determine all measurements; <b>and</b></li> <li>• is able to compare the difference in distance that the toy car traveled between Trial 1 and Trial 2 (Strip 2a).</li> </ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 7

**Essence Statement:** CTAS-3-PS2-2 Make observations and/or measurements to show the pattern of an object’s motion in order to make predictions.

**Core Extension 7:** Make a prediction about the effect of a change in one variable on the motion of an object. (CTAS-3-PS2-2)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 7 Resource 1: *Use Completed Activity 6 Resource 1: Toy Car Investigation Data Table Poster*
- Activity 7 Resource 2: Strips 2a – 2c
  - Strip 2a – longer distance
  - Strip 2b – shorter distance
  - Strip 2c – same distance

*Activities 5, 6, and 7 should be completed back-to-back.*

### Steps to Follow:

1. **SAY** “In this activity, we are going to predict the motion of the toy car if we change a variable in our last activity.”

2. Display Resource 1: Toy Car Investigation Data Table Poster for the student.

3. Indicate Resource 1.

**SAY** “We are going to use the data we collected in the last activity for the toy car investigation to make a prediction about the motion of the toy car if we change the height of the ramp.”

4. **ASK** “If we add a third book to the ramp and increase the ramp’s height, how far do you predict the toy car will travel?”

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

a. Indicate Strip 2a.

**SAY** “longer distance”

b. Indicate Strip 2b.

**SAY** “shorter distance”

c. Indicate Strip 2c.

**SAY** “same distance”

6. **ASK AGAIN** “If we add a third book to the ramp and increase the ramp’s height, how far do you predict the toy car will travel?”



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

8. Indicate Strip 2a.

<b>SAY</b>	“If we add a third book to the ramp and increase the ramp’s height, the toy car will travel a longer distance.”
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9. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

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

<b>SAY</b>	“The toy car will <b>not</b> travel the same distance when we add a third book to increase the ramp’s height.”
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2. **ASK AGAIN** “If we add a third book to the ramp and increase the ramp’s height, how far do you predict the toy car will travel?”

3. Provide Resource 2: Strip 2a and Strip 2b to the student. Indicate and read each Strip.

- a. Indicate Strip 2a.

<b>SAY</b>	“longer distance”
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- b. Indicate Strip 2b.

<b>SAY</b>	“shorter distance”
------------	--------------------

4. **ASK AGAIN** “If we add a third book to the ramp and increase the ramp’s height, how far do you predict the toy car will travel?”

5. Allow student to respond and record response.

6. Indicate Strip 2a.

<b>SAY</b>	“If we add a third book to the ramp and increase the ramp’s height, the toy car will travel a longer distance.”
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7. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. If we add a third book to the ramp and increase the ramp’s height, how far do you predict the toy car will travel?
  - a. Strip 2a – longer distance



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to predict that the toy car will travel a farther distance when a third book is added to increase the ramp's height (Strip 2a).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li><b>after scaffolding</b>, is able to predict that the toy car will travel a farther distance when a third book is added to increase the ramp's height (Strip 2a).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to predict that the toy car will travel a farther distance when a third book is added to increase the ramp's height (Strip 2a).</li></ul>	The student demonstrates understanding independently without scaffolding.	2



Connecticut  
Alternate  
Science  
Assessment

# Physical Science

## Storyline 6: Using Energy Every Day

### Grade 5 Performance Task





**Physical Science**  
**Storyline 6: Using Energy Every Day**  
**Grade 5 Performance Task**

**Guiding Questions:** What is energy and how is it transferred? How do we use light and heat energy? Where do we get the energy we need for everyday life?

NGSS Learning Progressions	Grade 5		
	NGSS Standard Performance Expectations	Connecticut Alternate Science Essence Statements	Core Extensions
PS3.A Definitions of Energy	4-PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.	CTAS-4-PS3-2 Make observations that light and heat are forms of energy that can be transferred from place to place.	<ol style="list-style-type: none"> <li>1. Distinguish between at least two examples of hot and cold. (CTAS-4-PS3-2)</li> <li>2. Distinguish between at least two examples of light and dark. (CTAS-4-PS3-2)</li> <li>3. Identify two examples of how light and heat energy are used in everyday life. (CTAS-PS3-2)</li> </ol>
PS3.D Energy in Chemical Processes and Everyday Life	5-PS3-1 Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.	CTAS-5-PS3-1 Use a simple model to describe that light energy comes from the sun, and is used by plants to grow and produce food that is eaten by animals and/or humans that they use for various purposes.	<ol style="list-style-type: none"> <li>4. Make observations that heat is transferred from the sun to the Earth. (CTAS-4-PS3-2)</li> <li>5. Use a simple model to show that plants need light energy from the sun to grow. (CTAS-5-PS3-1)</li> <li>6. Use a simple model to describe that the food animals need was once energy from the sun. (CTAS-5-PS3-1)</li> </ol>
Appropriate Vocabulary	Hot, cold, light, dark, light energy, heat energy, sound energy, electric energy, transfer		



**Physical Science**  
**Storyline 6: Using Energy Every Day**  
**Grade 5 Performance Task**

General Overview:

This performance task focuses on how light and heat energy are used and transferred in everyday life. Students will make observations that light and heat are forms of energy that can be transferred from place to place. Students will use a simple model to describe that light energy comes from the sun and is used by plants to grow and produce food that is eaten by animals and/or humans that they use for various purposes (e.g., how energy is used by plants and animals in a simple food chain).

List of Materials Needed:

*Teacher-Provided Resources:*

No Teacher-Provided Resources 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: Cards 1a – 1c
  - Card 1a – coffee
  - Card 1b – lemonade
  - Card 1c – milkshake
- Activity 1 Resource 2: Cards 2a – 2c
  - Card 2a – beach
  - Card 2b – snow-covered mountains
  - Card 2c – jungle
- Activity 2 Resource 1: Cards 1a – 1c
  - Card 1a – moon
  - Card 1b – sun
  - Card 1c – lamp
- Activity 2 Resource 2: Cards 2a – 2c
  - Card 2a – sun
  - Card 2b – clouds
  - Card 2c – moon



- Activity 3 Resource 1: Cards 1a – 1d
  - Card 1a – scissors
  - Card 1b – stove
  - Card 1c – baseball
  - Card 1d – lamp
- Activity 3 Resource 2: Cards 2a – 2d
  - Card 2a – to cook
  - Card 2b – to read
  - Card 2c – to play
  - Card 2d – to swim
- Activity 4 Resource 1: Sun Poster
- Activity 4 Resource 2: Cards 2a – 2d
  - Card 2a – sound
  - Card 2b – heat
  - Card 2c – electric
  - Card 2d – water
- Activity 4 Resource 3: Strips 3a – 3c
  - Strip 3a – home
  - Strip 3b – food
  - Strip 3c – warm
- Activity 5 Resource 1: Sun and Plants Poster
- Activity 5 Resource 2: Strips 2a – 2c
  - Strip 2a – light energy
  - Strip 2b – heat energy
  - Strip 2c – sound energy
- Activity 5 Resource 3: Sentence Strips 3a – 3c
  - Sentence Strip 3a – water
  - Sentence Strip 3b – soil
  - Sentence Strip 3c – food
- Activity 6 Resource 1: Energy Flow Chart Poster
- Activity 6 Resource 2: Cards 2a – 2c
  - Card 2a – sun
  - Card 2b – rock
  - Card 2c – fox

## ACTIVITY 1

**Essence Statement:** CTAS-4-PS3-2 Make observations that light and heat are forms of energy that can be transferred from place to place.

**Core Extension 1:** Distinguish between at least two examples of hot and cold. (CTAS-4-PS3-2)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 1 Resource 1: Cards 1a – 1c
  - Card 1a – coffee
  - Card 1b – lemonade
  - Card 1c – milkshake
- Activity 1 Resource 2: Cards 2a – 2c
  - Card 2a – beach
  - Card 2b – snow-covered mountains
  - Card 2c – jungle

### Steps to Follow:

1. 

<b>SAY</b>	“In this activity, we are going to talk about hot and cold.”
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2. 

<b>ASK</b>	“Which picture shows a hot drink?”
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3. Provide Resource 1: Cards 1a – 1c to the student. Indicate and describe each Card.
  - a. Indicate Card 1a.
 

<b>SAY</b>	“This picture shows a cup filled with coffee. Steam is rising from the coffee.”
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  - b. Indicate Card 1b.
 

<b>SAY</b>	“This picture shows a glass of lemonade. It has ice cubes inside.”
------------	--
  
  - c. Indicate Card 1c.
 

<b>SAY</b>	“This picture shows a milkshake. It is made from ice cream and milk.”
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4. 

<b>ASK AGAIN</b>	“Which picture shows a hot drink?”
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5. 

Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
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6. Indicate Card 1a.
 

<b>SAY</b>	“Coffee is a hot drink.”
------------	--------------------------
  
7. 

<b>ASK</b>	“Which picture shows a cold place?”
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8. Provide Resource 2: Cards 2a – 2c to the student. Indicate and describe each Card.



a. Indicate Card 2a.

<b>SAY</b>	“This picture shows a beach with sand and palm trees. It rains here all during the year.”
------------	---

b. Indicate Card 2b.

<b>SAY</b>	“This picture shows tall, snow-covered mountains. It rains here mainly in the summer.”
------------	--

c. Indicate Card 2c.

<b>SAY</b>	“This picture shows a jungle with lots of green plants. It rains here all during the year.”
------------	---

9. **ASK** “Which picture shows a cold place?”

**AGAIN**

10. Allow student to respond and record response.

11. Indicate Card 2b.

<b>SAY</b>	“The snow-covered mountains are a cold place.”
------------	--

12. **SAY** “We are now finished with this activity.”

## Scoring Guidance and Scaffolding

### Scaffolding:

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

<b>SAY</b>	“Coffee is a hot drink.”
------------	--------------------------

2. **ASK** “Which picture shows a cold place?”

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

- a. Indicate Card 2a.

<b>SAY</b>	“This picture shows a beach with sand and palm trees. It rains here all during the year.”
------------	---

- b. Indicate Card 2b.

<b>SAY</b>	“This picture shows tall, snow-covered mountains. It rains here mainly in the summer.”
------------	--

- c. Indicate Card 2c.

<b>SAY</b>	“This picture shows a jungle with lots of green plants. It rains here all during the year.”
------------	---

4. **ASK AGAIN** “Which picture shows a cold place?”

5. Allow student to respond and record response.

6. Indicate Card 2b.

<b>SAY</b>	“The snow-covered mountains are a cold place.”
------------	--

7. **SAY** “We are now finished with this activity.”

### Correct answers are as follows:

1. Which picture shows a hot drink?
  - a. Card 1a – coffee
2. Which picture shows a cold place?
  - a. Card 2b – snow-covered mountains



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the hot drink (Card 1a); <b>and</b></li><li>is unable to identify the cold place (Card 2b).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to identify the hot drink (Card 1a); <b>and</b></li><li>is unable to identify the cold place (Card 2b).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the hot drink (Card 1a); <b>and</b></li><li><b>after scaffolding</b>, is able to identify the cold place (Card 2b).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to identify the hot drink (Card 1a); <b>and</b></li><li>is able to identify the cold place (Card 2b).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 2

**Essence Statement:** CTAS-4-PS3-2 Make observations that light and heat are forms of energy that can be transferred from place to place.

**Core Extension 2:** Distinguish between at least two examples of light and dark. (CTAS-4-PS3-2)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 2 Resource 1: Cards 1a – 1c
  - Card 1a – moon
  - Card 1b – sun
  - Card 1c – lamp
- Activity 2 Resource 2: Cards 2a – 2c
  - Card 2a – sun
  - Card 2b – clouds
  - Card 2c – moon

### Steps to Follow:

1. 

<b>SAY</b>	“In this activity, we are going to talk about light and dark.”
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2. 

<b>ASK</b>	“Which picture shows the living room that has the most light?”
------------	--
  
3. Provide Resource 1: Cards 1a – 1c to the student. Indicate and describe each Card.
  - a. Indicate Card 1a.
 

<b>SAY</b>	“In this picture, the moon and the shadow of the moon is shining through the window into the living room – you cannot see anything else.”
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  - b. Indicate Card 1b.
 

<b>SAY</b>	“In this picture, the sun is shining through the window into the living room. You can see the living room furniture.”
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  - c. Indicate Card 1c.
 

<b>SAY</b>	“In this picture, a table lamp is turned on. You can see parts of the living room furniture.”
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4. 

<b>ASK AGAIN</b>	“Which picture shows the living room that has the most light?”
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5. 

Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
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6. Indicate Card 1b.
 

<b>SAY</b>	“In this picture, the sun is shining through the window. You can see all the furniture in the living room. This living room has the most light.”
------------	--

7. 

<b>ASK</b>	“In which picture is the outside space the darkest?”
------------	--
8. Provide Resource 2: Cards 2a – 2c to the student. Indicate and describe each Card.
- a. Indicate Card 2a.
- |            |  |
|------------|--|
| <b>SAY</b> | “In this picture, there is a grassy hill with a tree with many leaves. There are a few clouds in the sky. The sun is shining.” |
|------------|--|
- b. Indicate Card 2b.
- |            |   |
|------------|---|
| <b>SAY</b> | “In this picture, there is the same grassy hill. There are many clouds in the sky.” |
|------------|---|
- c. Indicate Card 2c.
- |            |  |
|------------|--|
| <b>SAY</b> | “In this picture, there is the same grassy hill. The moon is shining but it is hard to see anything else.” |
|------------|--|
9. 

<b>ASK AGAIN</b>	“In which picture is the outside space the darkest?”
----------------------	--
10. 

Allow student to respond and record response.
---
11. Indicate Card 2c.
- |            |   |
|------------|---|
| <b>SAY</b> | “In this picture, there is the same grassy hill. The moon is shining but it is hard to see anything else. This is the darkest outside space.” |
|------------|---|
12. 

<b>SAY</b>	“We are now finished with this activity.”
------------	---

## Scoring Guidance and Scaffolding

### Scaffolding:

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

<b>SAY</b>	“In this picture, the sun is shining through the window. You can see all the furniture in the living room. This living room has the most light.”
------------	--

2. **ASK** “In which picture is the outside space the darkest?”

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

- a. Indicate Card 2a.

<b>SAY</b>	“In this picture, there is a grassy hill with a tree with many leaves. There are a few clouds in the sky. The sun is shining.”
------------	--

- b. Indicate Card 2b.

<b>SAY</b>	“In this picture, there is the same grassy hill. There are many clouds in the sky.”
------------	---

- c. Indicate Card 2c.

<b>SAY</b>	“In this picture, there is the same grassy hill. The moon is shining but it is hard to see anything else.”
------------	--

4. **ASK AGAIN** “In which picture is the outside space the darkest?”

5. Allow student to respond and record response.

6. Indicate Card 2c.

<b>SAY</b>	“In this picture, there is the same grassy hill. The moon is shining but it is hard to see anything else. This is the darkest outside space.”
------------	---

7. **SAY** “We are now finished with this activity.”

Correct answers are as follows:

1. Which picture shows the living room that has the most light?
  - a. Card 1b – sun
2. In which picture is the outside space the darkest?
  - a. Card 2c – moon



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the living room that has the most light (Card 1b); <b>and</b></li><li>is unable to identify the outside space that is the darkest (Card 2c).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to identify the living room that has the most light (Card 1b); <b>and</b></li><li>is unable to identify the outside space that is the darkest (Card 2c).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the living room that has the most light (Card 1b); <b>and</b></li><li><b>after scaffolding</b>, is able to identify the outside space that is the darkest (Card 2c).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to identify the living room that has the most light (Card 1b); <b>and</b></li><li>is able to identify the outside space that is the darkest (Card 2c).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

### ACTIVITY 3

**Essence Statement:** CTAS-4-PS3-2 Make observations that light and heat are forms of energy that can be transferred from place to place.

**Core Extension 3:** Identify two examples of how light and heat energy are used in everyday life. (CTAS-PS3-2)

**Teacher Notes:**

Collect the following resources for this activity:

- Activity 3 Resource 1: Cards 1a – 1d
  - Card 1a – scissors
  - Card 1b – stove
  - Card 1c – baseball
  - Card 1d – lamp
- Activity 3 Resource 2: Cards 2a – 2d
  - Card 2a – to cook
  - Card 2b – to read
  - Card 2c – to play
  - Card 2d – to swim

**Steps to Follow:**

1. 

<b>SAY</b>	“In this activity, we are going to talk about how two forms of energy are used in everyday life.”
------------	---
  
2. 

<b>SAY</b>	“Light and heat are forms of energy that are used every day.”
------------	---
  
3. 

<b>ASK</b>	“Which object is designed to produce light energy?”
------------	---
  
4. Provide Resource 1: Cards 1a – 1d to the student. Indicate and read each Card.
  - a. Indicate Card 1a.
 

<b>SAY</b>	“scissors”
------------	------------
  
  - b. Indicate Card 1b.
 

<b>SAY</b>	“stove”
------------	---------
  
  - c. Indicate Card 1c.
 

<b>SAY</b>	“baseball”
------------	------------
  
  - d. Indicate Card 1d.
 

<b>SAY</b>	“lamp”
------------	--------
  
5. 

<b>ASK AGAIN</b>	“Which object is designed to produce light energy?”
----------------------	---

6. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
7. Indicate Card 1d.
- |            |                                 |
|------------|---------------------------------|
| <b>SAY</b> | “A lamp produces light energy.” |
|------------|---------------------------------|
8. **ASK** “How is the light energy from the lamp most often used in everyday life?”
9. Provide Resource 2: Cards 2a – 2d to the student. Indicate and read each Card.
- a. Indicate Card 2a.
- |            |           |
|------------|-----------|
| <b>SAY</b> | “to cook” |
|------------|-----------|
- b. Indicate Card 2b.
- |            |           |
|------------|-----------|
| <b>SAY</b> | “to read” |
|------------|-----------|
- c. Indicate Card 2c.
- |            |           |
|------------|-----------|
| <b>SAY</b> | “to play” |
|------------|-----------|
- d. Indicate Card 2d.
- |            |           |
|------------|-----------|
| <b>SAY</b> | “to swim” |
|------------|-----------|
10. **ASK AGAIN** “How is the light energy from the lamp most often used in everyday life?”
11. Allow student to respond and record response.
12. Indicate Card 2b.
- |            |   |
|------------|---|
| <b>SAY</b> | “The light energy from the lamp is most often used to read in everyday life.” |
|------------|---|
13. **ASK** “Which object is designed to produce heat energy?”
14. Provide remaining Resource 1: Cards 1a – 1c to the student. Indicate and describe each remaining Card.
- a. Indicate Card 1a.
- |            |            |
|------------|------------|
| <b>SAY</b> | “scissors” |
|------------|------------|
- b. Indicate Card 1b.
- |            |         |
|------------|---------|
| <b>SAY</b> | “stove” |
|------------|---------|

c. Indicate Card 1c.

<b>SAY</b>	“baseball”
------------	------------

15. **ASK** “Which object is designed to produce heat energy?”

**AGAIN**

16. Allow student to respond and record response.

17. Indicate Card 1b.

<b>SAY</b>	“A stove produces heat energy.”
------------	---------------------------------

18. **ASK** “How is the heat energy from the stove most often used in everyday life?”

19. Provide remaining Resource 2: Card 2a, Card 2c, and Card 2d to the student. Indicate and read each remaining Card.

a. Indicate Card 2a.

<b>SAY</b>	“to cook”
------------	-----------

c. Indicate Card 2c.

<b>SAY</b>	“to play”
------------	-----------

d. Indicate Card 2d.

<b>SAY</b>	“to swim”
------------	-----------

20. **ASK** “How is the heat energy from the stove most often used in everyday life?”

**AGAIN**

21. Allow student to respond and record response.

22. Indicate Card 2a.

<b>SAY</b>	“The heat energy from the stove is most often used to cook in everyday life.”
------------	---

23. **SAY** “We are now finished with this activity.”

### Scoring Guidance and Scaffolding

#### Scaffolding:

*Note: Optionally, you may ask the student the third question and/or fourth question, “Which object is designed to produce heat energy?” and “How is the heat energy from the stove most often used in everyday life?”, if the scaffold is applied. However, if you choose to ask the third question and/or fourth question and the student answers the third question and/or fourth question correctly, the student will still receive one point.*

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

<b>SAY</b>	“A lamp produces light energy.”
------------	---------------------------------

2. 

<b>ASK</b>	“How is the light energy from the lamp most often used in everyday life?”
------------	---

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

- a. Indicate Card 2a.

<b>SAY</b>	“to cook”
------------	-----------

- b. Indicate Card 2b.

<b>SAY</b>	“to read”
------------	-----------

- c. Indicate Card 2c.

<b>SAY</b>	“to play”
------------	-----------

- d. Indicate Card 2d.

<b>SAY</b>	“to swim”
------------	-----------

4. 

<b>ASK</b>	“How is the light energy from the lamp most often used in everyday life?”
------------	---

<b>AGAIN</b>	
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5. Allow student to respond and record response.

6. Indicate Card 2b.

<b>SAY</b>	“The light energy from the lamp is most often used to read in everyday life.”
------------	---

7. 

<b>SAY</b>	“We are now finished with this activity.”
------------	---

**Correct answers are as follows:**

1. Which object is designed to produce light energy?
  - a. Card 1d – lamp
2. How is the light energy from the lamp most often used in everyday life?
  - a. Card 2b – to read
3. Which object is designed to produce heat energy?
  - a. Card 1b – stove
4. How is the heat energy from the stove most often used in everyday life?
  - a. Card 2a – to cook

Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"> <li>• gives NO response.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify an object designed to produce light energy (Card 1d) <b>or</b> an object designed to produce heat energy (Card 1b); <b>and</b></li> <li>• is unable to describe how light energy (Card 2b) <b>or</b> heat energy are used in everyday life (Card 2a).</li> </ul>	<p>The student <b>does not</b> demonstrate understanding.</p>	<p>0</p>
<p>Student...</p> <ul style="list-style-type: none"> <li>• is able to identify an object designed to produce light energy (Card 1d); <b>and/or</b></li> <li>• is able to identify how light energy is most often used in everyday life (Card 2b); <b>and</b></li> <li>• is unable to identify an object designed to produce heat energy (Card 1b); <b>and</b></li> <li>• is unable to identify how heat energy is most often used in everyday life.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify an object designed to produce light energy (Card 1d); <b>and</b></li> <li>• is unable to identify how light energy is most often used in everyday life (Card 2b); <b>and</b></li> <li>• is able to identify an object designed to produce heat energy (Card 1b); <b>and/or</b></li> <li>• is able to describe how heat energy is most often used in everyday life (Card 2a).</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• is unable to identify an object designed to produce light energy (Card 1d); <b>and</b></li> <li>• <b>after scaffolding</b>, is able to describe how light energy is most often used in everyday life (Card 2a).</li> </ul>	<p>The student demonstrates limited understanding typically requiring additional support through scaffolding.</p>	<p>1</p>



<p>Student...</p> <ul style="list-style-type: none"><li>• is able to identify an object designed to produce light energy (Card 1d); <b>and</b></li><li>• is able to identify how light energy is most often used in everyday life (Card 2b); <b>and</b></li><li>• is able to identify an object designed to produce heat energy (Card 1b); <b>and</b></li><li>• is able to identify how heat energy is most often used in everyday life.</li></ul>	<p>The student demonstrates understanding independently without scaffolding.</p>	<p>2</p>
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## ACTIVITY 4

**Essence Statement:** CTAS-4-PS3-2 Make observations that light and heat are forms of energy that can be transferred from place to place.

**Core Extension 4:** Make observations that heat is transferred from the sun to the Earth. (CTAS-4-PS3-2)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 4 Resource 1: Sun Poster
- Activity 4 Resource 2: Cards 2a – 2d
  - Card 2a – sound
  - Card 2b – heat
  - Card 2c – electric
  - Card 2d – water
- Activity 4 Resource 3: Strips 3a – 3c
  - Strip 3a – home
  - Strip 3b – food
  - Strip 3c – warm

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about how energy can be used in an ecosystem. Energy makes it possible for living things to grow and move.”

2. Display Resource 1: Sun Poster for the student.

3. Indicate Resource 1.

**SAY** “This is the sun. The sun provides energy for all living things. Animals are living things.”

4. **ASK** “What is one form of energy that animals get from the sun?”

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

a. Indicate Card 2a.

**SAY** “sound”

b. Indicate Card 2b.

**SAY** “heat”

c. Indicate Card 2c.

**SAY** “electric”

d. Indicate Card 2d.

**SAY** “water”

6. **ASK AGAIN** "What is one form of energy that animals get from the sun?"
7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
8. Indicate Card 2b.
- SAY** "Animals use heat energy from the sun."
9. **ASK** "How do animals use heat energy from the sun?"
10. Provide Resource 3: Strips 3a – 3c to the student. Indicate and read each Strip.
- a. Indicate Strip 3a.
- SAY** "to build homes"
- b. Indicate Strip 3b.
- SAY** "to eat more food"
- c. Indicate Strip 3c.
- SAY** "to stay warm"
11. Allow student to respond and record response.
12. Indicate Strip 3c.
- SAY** "Animals use heat energy from the sun to stay warm."
13. **SAY** "We are now finished with this activity."

### Scoring Guidance and Scaffolding

#### Scaffolding:

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

<b>SAY</b>	“Animals use heat energy from the sun.”
------------	---

2. **ASK** “How do animals use heat energy from the sun?”

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

- a. Indicate Strip 3a.

<b>SAY</b>	“to build homes”
------------	------------------

- b. Indicate Strip 3b.

<b>SAY</b>	“to eat more food”
------------	--------------------

- c. Indicate Strip 3c.

<b>SAY</b>	“to stay warm”
------------	----------------

4. Allow student to respond and record response.

5. Indicate Strip 3c.

<b>SAY</b>	“Animals use heat energy from the sun to stay warm.”
------------	--

6. **SAY** “We are now finished with this activity.”

#### Correct answers are as follows:

1. What is one form of energy that animals get from the sun?
  - a. Card 2b – heat
2. How do animals use heat energy from the sun?
  - a. Strip 3c – to stay warm



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the form of energy that animals get from the sun (Card 2b); <b>and</b></li><li>is unable to describe how animals use heat energy from the sun (Strip 3c).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li>is able to identify the form of energy that animals get from the sun (Card 2b); <b>and</b></li><li>is unable to describe how animals use heat energy from the sun (Strip 3c).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the form of energy that animals get from the sun (Card 2b); <b>and</b></li><li><b>after scaffolding</b>, is able to describe how animals use heat energy from the sun (Strip 3c).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student... <ul style="list-style-type: none"><li>is able to identify the form of energy that animals get from the sun (Card 2b); <b>and</b></li><li>is able to describe how animals use heat energy from the sun (Strip 3c).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 5

**Essence Statement:** CTAS-5-PS3-1 Use a simple model to describe that light energy comes from the sun, and is used by plants to grow and produce food that is eaten by animals and/or humans that they use for various purposes.

**Core Extension 5:** Use a simple model to show that plants need light energy from the sun to grow. (CTAS-5-PS3-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 5 Resource 1: Sun and Plants Poster
- Activity 5 Resource 2: Strips 2a – 2c
  - Strip 2a – light energy
  - Strip 2b – heat energy
  - Strip 2c – sound energy
- Activity 5 Resource 3: Sentence Strips 3a – 3c
  - Sentence Strip 3a – water
  - Sentence Strip 3b – soil
  - Sentence Strip 3c – food

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about how the energy from the sun is used by living things.”

2. Display Resource 1: Sun and Plants Poster for the student.

3. Indicate Resource 1.

**SAY** “The sun provides energy to plants. Plants need energy from the sun to survive.”

4. **ASK** “What form of energy do plants use from the sun?”

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

a. Indicate Strip 2a.

**SAY** “light energy”

b. Indicate Strip 2b.

**SAY** “heat energy”

c. Indicate Strip 2c.

**SAY** “sound energy”

6. **ASK** “What form of energy do plants use from the sun?”

**AGAIN**

7. Allow student to respond and record response. If no response or if incorrect response, proceed to scaffolding instructions.
8. Indicate Strip 2a.
- |            |   |
|------------|---|
| <b>SAY</b> | “Plants use light energy from the sun.” |
|------------|---|
9. **ASK** “How do the plants use light energy from the sun?”
10. Provide Resource 3: Sentence Strips 3a – 3c to the student. Indicate and read each Sentence Strip.
- a. Indicate Sentence Strip 3a.
- |            |                             |
|------------|-----------------------------|
| <b>SAY</b> | “They make water to drink.” |
|------------|-----------------------------|
- b. Indicate Sentence Strip 3b.
- |            |                                   |
|------------|-----------------------------------|
| <b>SAY</b> | “They make soil for their roots.” |
|------------|-----------------------------------|
- c. Indicate Sentence Strip 3c.
- |            |                           |
|------------|---------------------------|
| <b>SAY</b> | “They make food to grow.” |
|------------|---------------------------|
11. **ASK AGAIN** “How do the plants use light energy from the sun?”
12. Allow student to respond and record response.
13. Indicate Sentence Strip 3c.
- |            |                           |
|------------|---------------------------|
| <b>SAY</b> | “They make food to grow.” |
|------------|---------------------------|
14. **SAY** “We are now finished with this activity.”

### Scoring Guidance and Scaffolding

#### Scaffolding:

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

<b>SAY</b>	“Plants use light energy from the sun.”
------------	---

2. **ASK** “How do the plants use light energy from the sun?”

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

- a. Indicate Sentence Strip 3a.

<b>SAY</b>	“They make water to drink.”
------------	-----------------------------

- b. Indicate Sentence Strip 3b.

<b>SAY</b>	“They make soil for their roots.”
------------	-----------------------------------

- c. Indicate Sentence Strip 3c.

<b>SAY</b>	“They make food to grow.”
------------	---------------------------

4. **ASK AGAIN** “How do the plants use light energy from the sun?”

5. Allow student to respond and record response.

6. Indicate Sentence Strip 3c.

<b>SAY</b>	“They make food to grow.”
------------	---------------------------

7. **SAY** “We are now finished with this activity.”

#### Correct answers are as follows:

1. What form of energy do plants use from the sun?
  - a. Strip 2a – light energy
2. How do the plants use light energy from the sun?
  - a. Sentence Strip 3c – They make food to grow.



Content Guidance	Rating	Score
<p>Student...</p> <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the form of energy that plants use from the sun (Strip 2a); <b>and</b></li><li>is unable to describe how plants use light energy from the sun (Sentence Strip 3c).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify the form of energy that plants use from the sun (Strip 2a); <b>and</b></li><li>is unable to describe how plants use light energy from the sun (Sentence Strip 3c).</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify the form of energy that plants use from the sun (Strip 2a); <b>and</b></li><li><b>after scaffolding</b>, is able to describe how plants use light energy from the sun (Sentence Strip 3c).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
<p>Student...</p> <ul style="list-style-type: none"><li>is able to identify the form of energy that plants use from the sun (Strip 2a); <b>and</b></li><li>is able to describe how plants use light energy from the sun (Sentence Strip 3c).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

## ACTIVITY 6

**Essence Statement:** CTAS-5-PS3-1 Use a simple model to describe that light energy comes from the sun, and is used by plants to grow and produce food that is eaten by animals and/or humans that they use for various purposes.

**Core Extension 6:** Use a simple model to describe that the food animals need was once energy from the sun. (CTAS-5-PS3-1)

### Teacher Notes:

Collect the following resources for this activity:

- Activity 6 Resource 1: Energy Flow Chart Poster
- Activity 6 Resource 2: Cards 2a – 2c
  - Card 2a – sun
  - Card 2b – rock
  - Card 2c – fox

### Steps to Follow:

1. **SAY** “In this activity, we are going to talk about how the energy is used by living things. Like plants, animals need energy to grow and survive.”

2. Display Resource 1: Energy Flow Chart Poster for the student.

3. Indicate Resource 1.

**SAY** “This is an energy flow chart. We are going to use this flow chart to show the relationship between energy and living things. We will use Cards to complete this flow chart. This flow chart starts with a blank box. There is an arrow between the blank box and a second box with plants (*indicate plants*) labeled ‘**Energy**’. There is an arrow between the second box with plants and a third box with a rabbit (*indicate rabbit*) labeled ‘**Energy**’. Let’s use Cards to complete the blank box in the flow chart.”

4. **ASK** “What gives energy directly to the plants?”

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

a. Indicate Card 2a.

**SAY** “sun”

b. Indicate Card 2b.

**SAY** “rock”

c. Indicate Card 2c.

**SAY** “fox”

6. **ASK** “What gives energy directly to the plants?”

**AGAIN**

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

8. Indicate Card 2a.

<b>SAY</b>	“The sun gives its energy directly to the plants. Let’s place the sun in the empty box on our flow chart.”
------------	--

9. Place Card 2a in the empty box in Resource 1.

10. Indicate Resource 1.

<b>SAY</b>	“The sun gives light energy to the plants to make their own food. The plants give energy to the rabbit when the rabbit eats the plants. In this way, energy is transferred from the sun to the plants to the rabbit.”
------------	---

11. **SAY** “We are now finished with this activity.”

### Scoring Guidance and Scaffolding

#### Scaffolding:

1. After student makes first incorrect attempt, remove Card 2c.

<b>SAY</b>	“The fox is an incorrect answer because it does not give energy to the plant.”
------------	--

2. **ASK AGAIN** “What gives energy directly to the plants?”

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

- a. Indicate Card 2a.

<b>SAY</b>	“sun”
------------	-------

- b. Indicate Card 2b.

<b>SAY</b>	“rock”
------------	--------

4. Allow student to respond and record response.

5. Indicate Card 2a.

<b>SAY</b>	“The sun gives its energy directly to the plants. Let’s place the sun in the empty box on our flow chart.”
------------	--

6. Place Card 2a in the empty box in Resource 1.

7. Indicate Resource 1.

<b>SAY</b>	“The sun gives light energy to the plants to make their own food. The plants give energy to the rabbit when the rabbit eats the plants. In this way, energy is transferred from the sun to the plants to the rabbit.”
------------	---

8. **SAY** “We are now finished with this activity.”

#### The correct answer is:

1. What gives energy directly to the plants?
  - a. Card 2a – sun



Content Guidance	Rating	Score
Student... <ul style="list-style-type: none"><li>gives NO response.</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>is unable to identify what gives its energy directly to the plants (Card 2a).</li></ul>	The student <b>does not</b> demonstrate understanding.	0
Student... <ul style="list-style-type: none"><li><b>after scaffolding</b>, is able to identify what gives its energy directly to the plants (Card 2a).</li></ul>	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student <ul style="list-style-type: none"><li>is able to identify what gives its energy directly to the plants (Card 2a).</li></ul>	The student demonstrates understanding independently without scaffolding.	2

