Connecticut Alternate Science Assessment

Grade 5 Performance Tasks

Earth Science

Storyline 1: Earth Systems

Storyline 2: Natural Resources

PUBLISHED FALL 2018

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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	3-ESS2-1 Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. 3-ESS2-2 Obtain and combine information to describe climates in different regions of the world.	CTAS-3-ESS2-1 Use and interpret data in tables and graphs to describe typical weather conditions expected during a particular season. CTAS-3-ESS2-2 Use information to describe climates in different regions of the United States.	1. Recognize two forms of water (e.g., rain, snow, hail, sleet) that can fall from clouds to Earth. (CTAS-3-ESS2-1) 2. Identify key components that describe local weather conditions (i.e., temperature, amount of cloud cover, precipitation, and wind speed). (CTAS-3-ESS2-1) 3. From provided temperature and precipitation data, identify the likely seasons. (CTAS-3-ESS2-1) 4. From provided data, compare weather conditions between two specific time periods. (CTAS-3-ESS2-1) 5. Using provided information, describe the climate in Connecticut. (CTAS-3-ESS2-2) 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) 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) 8. Complete a model to describe changes in the shape of a land form due to wind and water. (CTAS-5-ESS2-1)
ESS2.A Earth Materials and Systems	5-ESS2-1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.	CTAS-5-ESS2-1 Use a model to show how wind and water interact with land and living organisms.	

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^{o}
    - Card 4b – 40^{o}
    - Card 4c – 80^{o}
- 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. | **SAY** | "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." |

2. | **ASK** | "What is one picture that shows a form of water falling from the sky?" |

3. Provide Resource 1: Cards 1a – 1d to the student. Indicate and describe each 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." |

4. | **ASK AGAIN** | "What is one picture that shows a form of water falling from the sky?" |

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. | **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.

SAY	"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."

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.

SAY	"The second picture shows leaves blowing on a windy day."

   b. Indicate Card 1c.

SAY	"The third picture shows lightning striking on a stormy day."

   c. Indicate Card 1d.

SAY	"The fourth picture shows rain on a wet day."

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
Student… • gives NO response. **OR** • is unable to identify one picture that shows a form of water falling from the sky (Card 1a **or** Card 1d); ***and*** • is unable to identify another picture that shows a form of water falling from the sky (Card 1a **or** Card 1d).	The student **does not** demonstrate understanding.	0
Student… • is able to identify one picture that shows a form of water falling from the sky (Card 1a **or** Card 1d); ***and*** • is unable to identify another picture that shows a form of water falling from the sky (Card 1a **or** Card 1d). **OR** • is unable to identify one picture that shows a form of water falling from the sky (Card 1a **or** Card 1d); ***and*** • **after scaffolding,** is able to identify another picture that shows a form of water falling from the sky (Card 1d).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify one picture that shows a form of water falling from the sky (Card 1a **or** Card 1d); ***and*** • is able to identify another picture that shows a form of water falling from the sky (Card 1a **or** Card 1d).	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. | **SAY** | "In this activity, we are going to talk about weather." |
2. Display Resource 1: Child Outside Poster for the student.
3. Indicate Resource 1.

SAY	"This picture shows a child playing outside. She wears a raincoat *(indicate raincoat)*. Her hat blows away *(indicate hat)*. There are puddles on the ground *(indicate puddles)*. She runs to her house *(indicate house)*."

4. | **ASK** | "What is one word that describes the weather in this picture?" |
5. Provide Resource 2: Cards 2a – 2d to the student. Indicate and read each 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"

6. | **ASK AGAIN** | "What is one word that describes the weather in this picture?" |

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.

SAY	"The child wears a raincoat. It is rainy."

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.

SAY	"sunny"

   b. Indicate Card 2c.

SAY	"snowy"

   c. Indicate Card 2d.

SAY	"windy"

4.

ASK AGAIN	"What is another word that describes the weather in this picture?"

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
Student… • gives NO response. **OR** • is unable to identify one word that describes the weather in the picture (Card 2b or Card 2d); ***and*** • is unable to identify another word that describes the weather in the picture (Card 2b or Card 2d).	The student **does not** demonstrate understanding.	0
Student… • is able to identify one word that describes the weather in the picture (Card 2b or Card 2d); ***and*** • is unable to identify another word that describes the weather in the picture (Card 2b or Card 2d). **OR** • is unable to identify one word that describes the weather in the picture (Card 2b or Card 2d); ***and*** • **after scaffolding,** is able to identify another word that describes the weather in the picture (Card 2b or Card 2d).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify one word that describes the weather in the picture (Card 2b or Card 2d); ***and*** • is able to identify another word that describes the weather in the picture (Card 2b or Card 2d).	The student demonstrates understanding independently without scaffolding.	2

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.

SAY	"winter"

c. Indicate Card 2c.

SAY	"spring"

d. Indicate Card 2d.

SAY	"fall"

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.

SAY	"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."

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.

SAY	"The temperatures are hot. Today, it is 80 degrees. The sun is shining. Many dark green leaves are on the trees."

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.

SAY	"When the temperature is 30 degrees and it is snowy, it is the winter season *(indicate Card 2b)*."

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

SAY	"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."

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… • gives NO response. **OR** • is unable to correctly place any season Card in the **Season** column of the data table.	The student **does not** demonstrate understanding.	0
Student… • is able to correctly place one, two, or three season Cards in the **Season** column of the data table. **OR** • is unable to correctly place one season Card in the **Season** column of the data table; ***and*** • **after scaffolding,** is able to correctly place at least one season Card in the **Season** column of the data table.	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to correctly place **all** four season Cards in the **Season** column of the data table.	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. | | |
|---|---|
| **SAY** | "In this activity, we are going to compare the weather on two different dates." |

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

SAY	"This is a data table that describes the weather on two different dates. *(Indicate first row of data table.)* On February 5, the temperature was 35 degrees. It was rainy. There were light winds. *(Indicate second row of data table.)* On September 10, the temperature was 73 degrees. It was rainy. There were high winds."

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

SAY	"This Venn Diagram is used to compare two things. On the left side of the diagram *(indicate the left side of the diagram),* we will place things that are true only for '**February 5**'. On the right side of the diagram *(indicate the right side of the diagram),* we will place only things that are only true for '**September 10**'. In the middle of the diagram *(indicate the middle of the diagram)*, we will place things that are true for '**Both**' February 5 and September 10."

6. Provide Resource 3: Strips 3a – 3c to the student.
7. Indicate Strip 3a.

SAY	"This Strip says, 'cold temperature.'"
ASK	"Where should we put this Strip on the Venn Diagram: under '**February 5**', under '**September 10**', or under '**Both**'?"

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.

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

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.

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

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.

SAY	"There was a cold temperature only on February 5th. We'll place the '**cold temperature**' Strip here *(place Strip 3a under '**February 5**' on the Venn Diagram).*"

3. Indicate Strip 3b.

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

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.

SAY	"We are now finished with this activity."

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… • gives NO response. **OR** • is unable to correctly place any Strip on the Venn Diagram.	The student **does not** demonstrate understanding.	0
Student… • is able to correctly place one **or** two Strip(s) on the Venn Diagram. **OR** • is unable to correctly place one Strip on the Venn Diagram; ***and*** • **after scaffolding,** is able to correctly place at least one Strip on the Venn Diagram.	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to correctly place all three Strips on the Venn Diagram.	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… • gives NO response. **OR** • is unable to describe the climate of Connecticut (Card 1b).	The student **does not** demonstrate understanding.	0
Student… • **after scaffolding,** is able to describe the climate of Connecticut (Card 1b).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to describe the climate of Connecticut (Card 1b)**.**	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.

SAY	"This is a T-Chart. The left side of the T-Chart is labeled '**Florida**' and the right side is labeled '**Oregon**'. We are going to use this T-Chart to sort statements about each state."

8. Provide Resource 4: Cards 4a – 4c to the student.

9. Indicate Card 4a.

SAY	"This Card says, 'warmer summers'."
ASK	"Should 'warmer summers' be placed under '**Florida**' or under '**Oregon**'?"

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.

SAY	"This Card says, 'colder winters'."
ASK	"Should 'colder winters' be placed under '**Florida**' or under '**Oregon**'?"

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.

SAY	"This Card says, 'more rain'."
ASK	"Should 'more rain' be placed under '**Florida**' or under '**Oregon**'?"

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.

SAY	"Florida has warmer summers. Let's place the 'warmer summers' Card on the left side of the T-Chart under '**Florida**'."

3. Indicate Card 4b.

SAY	"This Card says, 'colder winters'."
ASK	"Should 'colder winters' be placed under '**Florida**' or under '**Oregon**'?"

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.

SAY	"We are now finished with this activity."

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… • gives NO response. **OR** • is unable to place one Card on the correct side of the T-Chart.	The student **does not** demonstrate understanding.	0
Student… • is able to place only one **or** two Card(s) on the correct side of the T-Chart. **OR** • **after scaffolding**, is able to place at least one Card on the correct side of the T-Chart.	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to place all three Cards on the correct side of the T-Chart.	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.

SAY	"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."

2. Display Resource 1: Map of U.S. – Hartford and Tucson Poster for the student.
3. Indicate Resource 1.

SAY	"This is a map showing Hartford, Connecticut *(indicate Hartford)* and Tucson, Arizona *(indicate Tucson).*"

4. Display Resource 2: Data Table – Hartford and Tucson Poster.
5. Indicate Resource 2.

SAY	"This is a data table that shows information about these two areas in our country: Hartford and Tucson *(indicate '**Area**' column)*. The average summer temperature in Hartford is 60 degrees *(indicate Hartford '**Average Summer Temperature**')* and the average summer temperature in Tucson is 84 degrees *(indicate Tucson '**Average Summer Temperature**')*. The average winter temperature in Hartford is 40 degrees *(indicate Hartford '**Average Winter Temperature**')* and the average winter temperature in Tucson is 58 degrees *(indicate Tucson '**Average Winter Temperature**')*. The average amount of rain in Hartford is 44 inches *(indicate Hartford '**Average Amount of Rain**')* and the average amount of rain in Tucson is 11 inches *(indicate Tucson '**Average Amount of Rain**').*"

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.

SAY	"The Tucson area will likely have an average summer temperature of 80 degrees next year."

16.

SAY	"We are now finished with this activity."

Scoring Guidance and Scaffolding

Scaffolding:

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

SAY	"Based on the data in the data table, Hartford will likely have 40 inches of rain in the next year."

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.

SAY	"10 degrees"

b. Indicate Card 4b.

SAY	"40 degrees"

c. Indicate Card 4c.

SAY	"80 degrees"

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… • gives NO response. **OR** • is unable to predict the likely amount of rain that the Hartford area will get in the next year (Card 3b); ***and*** • is unable to predict the likely average summer temperature of the Tucson area next year (Card 4c).	The student **does not** demonstrate understanding.	0
Student… • is able to predict the likely amount of rain that the Hartford area will get in the next year (Card 3b); ***and*** • is unable to predict the likely average summer temperature of the Tucson area next year (Card 4c). **OR** • is unable to predict the likely amount of rain that the Hartford area will get in the next year (Card 3b); ***and*** • **after scaffolding,** is able to predict the likely average summer temperature of the Tucson area next year (Card 4c).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to predict the likely amount of rain that the Hartford area will get in the next year (Card 3b); ***and*** • is able to predict the likely average summer temperature of the Tucson area next year (Card 4c).	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 AGAIN** | "What likely changed this sand dune?" |

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 AGAIN** | "Which type of dune will be **most** affected by moving water or waves?" |

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.

SAY	"Wind changed this stand dune."

3. Indicate completed Resource 1.

SAY	"Wind causes the sand dune to grow bigger and move to the right."

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.

SAY	"a dune with only sand"

   b. Indicate Strip 2b.

SAY	"a dune with rocks and sand"

   c. Indicate Strip 2c.

SAY	"a dune with plants in the sand"

6.

ASK AGAIN	"Which type of dune will be **most** affected by moving water or waves?"

7. Allow student to respond and record response.
8. Indicate Strip 3a.

SAY	"A dune with only sand will be **most** affected by moving water or waves."

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… • gives NO response. **OR** • is unable to determine what changed this sand dune (Card 2a); ***and*** • is unable to predict which type of sand dune will be most affected by moving water or waves (Strip 3a).	The student **does not** demonstrate understanding.	0
Student… • is able to determine what changed this sand dune (Card 2a); ***and*** • is unable to predict which type of sand dune will be most affected by moving water or waves (Strip 3a). **OR** • is unable to determine what changed this sand dune (Card 2a); ***and*** • **after scaffolding**, is able to predict which type of sand dune will be most affected by moving water or waves (Strip 3a).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to determine what changed this sand dune (Card 2a); ***and*** • is able to predict which type of sand dune will be most affected by moving water or waves (Strip 3a).	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.

SAY	"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 *(indicate '**Field Before Drought**')*. 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 *(indicate '**Field After Drought**').* The plants received no water for many days. There is only one plant left in the field. The plant has few leaves."

3.

ASK	"How did the drought change the plants?"

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

SAY	"The plants have greener leaves."

   b. Indicate Card 2b.

SAY	"The plants stood taller."

   c. Indicate Card 2c.

SAY	"The plants turned brown and wilted."

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.

SAY	"The plants turned brown and wilted."

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.

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."

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… • gives NO response. **OR** • is unable to identify how the drought changed the plants (Card 2c); ***and*** • is unable to identify how the drought changed the soil (Sentence Strip 3a).	The student **does not** demonstrate understanding.	0
Student… • is able to identify how the drought changed the plants (Card 2c); ***and*** • is unable to identify how the drought changed the soil (Sentence Strip 3a). **OR** • is unable to identify how the drought changed the plants (Card 2c); ***and*** • **after scaffolding,** is able to identify how the drought changed the soil (Sentence Strip 3a).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify how the drought changed the plants (Card 2c); ***and*** • is able to identify how the drought changed the soil (Sentence Strip 3a).	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).	1. Distinguish between fresh and salt water and which is needed by humans and other organisms for survival. (CTAS-5-ESS2-2) 2. Locate sources of freshwater (a lake and river) and saltwater (ocean) shown on a map. (CTAS-5-ESS2-2) 3. From a simple graphic, compare the relative amounts of fresh and salt water in various reservoirs. (CTAS-5-ESS2-2) 4. Describe two ways that humans use energy sources (e.g., generate electricity, heat homes, power a car). (CTAS-4-ESS3-1) 5. Complete a causal chain explaining two ways that non-renewable energy sources (coal, oil, natural gas) affect the environment. (CTAS-4-ESS3-1) 6. Complete a causal chain explaining two ways that renewable energy sources (wind, water, solar) affect the environment. (CTAS-4-ESS3-1)
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.

SAY	"fresh water"

b. Indicate Card 4b.

SAY	"salt water"

21. Allow student to respond and record response.

22. Indicate Card 4a.

SAY	"The water in our faucet is fresh water."

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.

SAY	"A **dog** needs fresh water to survive. Let's place the dog in the fresh water box *(move Card 2a to Resource 1a)*."

2. Indicate Card 2b.

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

3. Allow student to respond and record response.

4. Move Card 2b to Resource 1b.

SAY	"A **jellyfish** needs salt water to survive."

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
Student… • gives NO response. **OR** • is unable to identify that both dogs and humans (Card 2a **and** Card 2c) need fresh water; ***and*** • is unable to identify that jellyfish (Card 2b) need salt water; ***and*** • is unable to identify that the water in our faucet is fresh water (Card 4a).	The student **does not** demonstrate understanding.	0
Student… • is able to identify that either dogs and/or humans (Cards 2a **and/or** 2c) need fresh water; ***and*** • is able to identify that jellyfish (Card 2b) need salt water; ***and*** • is unable to identify that the water in our faucet is fresh water (Card 4a). **OR** • is unable to identify that either dogs or humans (Card 2a **or** Card 2c) need fresh water; ***and*** • **after scaffolding,** is able to identify that jellyfish (Card 2b) need salt water.	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify that both dogs and humans (Cards 2a **and** 2c) need fresh water; ***and*** • is able to identify that jellyfish (Card 2b) need salt water; ***and*** • is able to identify that the water in our faucet is fresh water (Card 4a).	The student demonstrates understanding independently without scaffolding.	2

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. | **SAY** | "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." |
2. Display Resource 1: Map of Connecticut Poster for the student.
3. Indicate Resource 1.

SAY	"This is a map of Connecticut. Here are places where water is found in and near Connecticut: Candlewood Lake *(indicate Candlewood Lake)*, the Connecticut River *(indicate the Connecticut River)*, and the Long Island Sound that leads to the Atlantic Ocean *(indicate the Long Island Sound [Atlantic Ocean])*."

4. | **SAY** | "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." |
5. Provide Resource 2: Strips 2a – 2d to the student. Indicate and read each Strip.
   a. Indicate Strip 2a.

SAY	"salt water"

   b. Indicate Strip 2b.

SAY	"fresh water"

   c. Indicate Strip 2c.

SAY	"fresh water"

   d. Indicate Strip 2d.

SAY	"salt water"

6. Indicate Candlewood Lake on Resource 1.

ASK	"Does Candlewood Lake have fresh water or salt water?"

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

8. Indicate Strip 2c.

SAY	"Candlewood Lake has **fresh water**."

9. Move Strip 2c to Candlewood Lake.

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

ASK	"Does the Long Island Sound have fresh water or salt water?"

11. Allow student to respond and record response.

12. Indicate Strip 2a.

SAY	"The Long Island Sound has **salt water**."

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

14. Indicate the Connecticut River on Resource 1.

ASK	"Does the Connecticut River have fresh water or salt water?"

15. Allow student to respond and record response.

16. Indicate Strip 2b.

SAY	"The Connecticut River has **fresh water**."

17. Move Strip 2b to the Connecticut River.

18.

SAY	"We are now finished with this activity."

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.

SAY	"This is a lake. Lakes have fresh water. Let's label Candlewood Lake **fresh water**."

2. Move Strip 2c to Candlewood Lake.
3. Indicate the Long Island Sound (Atlantic Ocean) on Resource 1.

ASK	"Does the Long Island Sound have fresh water or salt water?"

4. Allow student to respond and record response.
5. Indicate Strip 2a.

SAY	"The Long Island Sound has **salt water**."

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**.

Content Guidance	Rating	Score
Student… • gives NO response. **OR** • is unable to identify **any** of the bodies of water as fresh water or salt water.	The student **does not** demonstrate understanding.	0
Student… • **with or without scaffolding,** is able to identify one **or** two bodies of water as fresh water or salt water.	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify **all** bodies of water correctly as fresh water or salt water.	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… • gives NO response; **OR** • is unable to compare the amount of fresh water to the amount of salt water (Card 2b).	The student **does not** demonstrate understanding.	0
Student… • **after scaffolding,** is able to compare the amount of fresh water to the amount of salt water (Card 2b).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to compare the amount of fresh water to the amount of salt water (Card 2b).	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. | **SAY** | "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." |

2. | **ASK** | "What is an activity that uses electricity?" |

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

   a. Indicate Card 1a.

   | **SAY** | "using a **vacuum cleaner**" |

   b. Indicate Card 1b.

   | **SAY** | "**swimming** in a lake" |

   c. Indicate Card 1c.

   | **SAY** | "playing at the **playground**" |

   d. Indicate Card 1d.

   | **SAY** | "playing a **video game**" |

4. | **ASK AGAIN** | "What is an activity that uses electricity?" |

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. | **ASK** | "What is another activity that uses electricity?" |

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

   a. Indicate Card 1a.

   | **SAY** | "using a **vacuum cleaner**" |

   b. Indicate Card 1b.

   | **SAY** | "**swimming** in a lake" |

   c. Indicate Card 1c.

   | **SAY** | "playing at the **playground**" |

   d. Indicate Card 1d.

   | **SAY** | "playing a **video game**" |

9. | **ASK AGAIN** | "What is another activity that uses electricity?" |

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.

   | **SAY** | "People use electricity while they are using a vacuum cleaner." |

2. | **ASK** | "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.

   | **SAY** | "using a **vacuum cleaner**" |

b. Indicate Card 1b.

SAY	"**swimming** in a lake"

c. Indicate Card 1c.

SAY	"playing at the **playground**"

d. Indicate Card 1d.

SAY	"playing a **video game**"

4.

ASK AGAIN	"What is another activity that uses electricity?"

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… • gives NO response. **OR** • is unable to identify that people use electricity while using a vacuum cleaner (Card 1a); ***and*** • is unable to identify that people use electricity while playing a video game (Card 1d).	The student **does not** demonstrate understanding.	0
Student… • is able to identify that people use electricity while using a vacuum cleaner (Card 1a); ***and*** • is unable to identify that people use electricity while playing a video game (Card 1d). **OR** • is unable to identify that people use electricity while using a vacuum cleaner (Card 1a); ***and*** • **after scaffolding,** is able to identify that people use electricity while playing a video game (Card 1d).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify that people use electricity while using a vacuum cleaner (Card 1a); ***and*** • is able to identify that people use electricity while playing a video game (Card 1d).	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.

SAY	"The smoke from the coal plant harms the fish because it **pollutes** the **water** 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.

SAY	"makes the **sunlight brighter**"

b. Indicate Strip 2b.

SAY	"**forms clouds** in the sky"

c. Indicate Strip 2d.

SAY	"makes it **hard to breathe** 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.

SAY	"The smoke from the coal plant harms the man fishing because it makes it **hard to breathe** 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.

SAY	"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 **pollutes** the **water** in the lake."

2.

ASK	"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.

SAY	"makes the **sunlight brighter**"

   b. Indicate Strip 2b.

SAY	"**forms clouds** in the sky"

   c. Indicate Strip 2d.

SAY	"makes it **hard to breathe** the air"

4.

ASK AGAIN	"What is one way that the smoke from the coal plant harms the man fishing?"

5. Allow student to respond and record response.

6. Indicate Strip 2d.

SAY	"The smoke from the coal plant harms the man fishing because it makes it **hard to breathe** the air."

7.

SAY	"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
Student… • gives NO response. **OR** • is unable to identify that the smoke harms the fish because it pollutes the water in the lake (Strip 2c); ***and*** • is unable to identify that smoke harms the man fishing because it makes it hard to breathe the air (Strip 2d).	The student **does not** demonstrate understanding.	0
Student… • is able to identify that the smoke harms the fish because it pollutes the water in the lake (Strip 2c); ***and*** • is unable to identify that smoke harms the man fishing because it makes it hard to breathe the air (Strip 2d). **OR** • is unable to identify that the smoke harms the fish because it pollutes the water in the lake (Strip 2c); ***and*** • **after scaffolding,** is able to identify that smoke harms the man fishing because it makes it hard to breathe the air (Strip 2d).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify that the smoke harms the fish because it pollutes the water in the lake (Strip 2c); ***and*** • is able to identify that smoke harms the man fishing because it makes it hard to breathe the air (Strip 2d).	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 AGAIN** | "What is one way that wind energy helps the 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 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 AGAIN** | "What is another way that wind energy helps the 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 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.

SAY	"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.

SAY	"It is a renewable energy source."

b. Indicate Sentence Strip 2c.

SAY	"It can change the habitats of some animals."

c. Indicate Sentence Strip 2d.

SAY	"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… • gives NO response. **OR** • is unable to identify one way wind energy helps the environment (Sentence Strip 2a **or** Sentence Strip 2b); ***and*** • is unable to identify another way that wind energy helps the environment (Sentence Strip 2a **or** Sentence Strip 2b).	The student **does not** demonstrate understanding.	0
Student… • is able to identify one way wind energy helps the environment (Sentence Strip 2a **or** Sentence Strip 2b); ***and*** • is unable to identify another way that wind energy helps the environment (Sentence Strip 2a **or** Sentence Strip 2b). **OR** • is unable to identify one way wind energy helps the environment (Sentence Strip 2a **or** Sentence Strip 2b); ***and*** • **after scaffolding,** is able to identify another way wind energy helps the environment (Sentence Strip 2b).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify one way wind energy helps the environment (Sentence Strip 2a **or** Sentence Strip 2b); ***and*** • is able to identify another way wind energy helps the environment (Sentence Strip 2a **or** Sentence Strip 2b).	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.

SAY	"Picking up trash is good for the pond environment because it helps the water to stay clear."

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.

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"

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
Student… • gives NO response. **OR** • is unable to identify one reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b); ***and*** • is unable to identify another reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b).	The student **does not** demonstrate understanding.	0
Student… • is able to identify one reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b); ***and*** • is unable to identify another reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b). **OR** • is unable to identify one reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b); ***and*** • **after scaffolding,** is able to identify another reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • is able to identify one reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b); ***and*** • is able to identify another reason why picking up the trash is good for the pond environment (Strip 2a or Strip 2b).	The student demonstrates understanding independently without scaffolding.	2

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.

SAY	"add rocks and soil to the hill"

c. Indicate Card 3c.

SAY	"plant grass and bushes on the hill"

8.

ASK AGAIN	"What is one idea that would keep the rocks and soil from blocking the path 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.

SAY	"Planting grass and bushes on the hill will keep rocks and soil from blocking the path."

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.

SAY	"Because the plants **change the color of the rocks and soil**."

b. Indicate Strip 4b.

SAY	"Because the plant roots **stop the rocks and soil from moving**."

c. Indicate Strip 4c.

SAY	"Because the plants **make the rocks and soil different sizes**."

13.

ASK AGAIN	"Why does planting grass and bushes on the hill keep rocks and soil from blocking the path?"

14. Allow student to respond and record response.

15. Indicate Strip 4b.

SAY	"Because the plant roots **stop the rocks and soil from moving**."

16.

SAY	"We are now finished with this activity."

Scoring Guidance and Scaffolding

Scaffolding:

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

SAY	"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.

SAY	"Because the plants **change the color of the rocks and soil**."

   b. Indicate Strip 4b.

SAY	"Because the plant roots **stop the rocks and soil from moving**."

   c. Indicate Strip 4c.

SAY	"Because the plants **make the rocks and soil different sizes**."

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.

SAY	"Because the plant roots **stop the rocks and soil from moving**."

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
Student… • gives NO response. **OR** • 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); ***and*** • is unable to identify that plant roots keep the rocks and soil from moving (Strip 4b).	The student **does not** demonstrate understanding.	0
Student… • 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); ***and*** • is unable to identify that plant roots keep the rocks and soil from moving (Strip 4b). **OR** • 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); ***and*** • **after scaffolding,** is able to identify that plant roots keep the rocks and soil from moving (Strip 4b).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • 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); ***and*** • is able to identify that plant roots keep the rocks and soil from moving (Strip 4b).	The student demonstrates understanding independently without scaffolding.	2

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.

SAY	"They prevent the soil from washing away."

7. | | |
|---|---|
| **ASK** | "How does planting the fruit trees **not help** the animals in the forest?" |

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

   a. Indicate Sentence Strip 2a.

SAY	"Some animals are not able to fly away."

   b. Indicate Sentence Strip 2b.

SAY	"Some animals are not able to eat the fruit."

   c. Indicate Sentence Strip 2c.

SAY	"Some animals are not able to find water."

9. | | |
|---|---|
| **ASK AGAIN** | "How does planting the fruit trees **not help** the animals in the forest?" |

10. Allow student to respond and record response.

11. Indicate Sentence Strip 2b.

SAY	"Some animals are not able to eat the fruit."

12. | | |
|---|---|
| **SAY** | "We are now finished with this activity." |

Scoring Guidance and Scaffolding

Scaffolding:

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

SAY	"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.

SAY	"Some animals are not able to fly away."

   b. Indicate Sentence Strip 2b.

SAY	"Some animals are not able to eat the fruit."

   c. Indicate Sentence Strip 2c.

SAY	"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.

SAY	"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
Student… • gives NO response. **OR** • 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); ***and*** • 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).	The student **does not** demonstrate understanding.	0
Student… • 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); ***and*** • 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). **OR** • 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); ***and*** • **after scaffolding,** 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).	The student demonstrates limited understanding typically requiring additional support through scaffolding.	1
Student… • 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); ***and*** • 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).	The student demonstrates understanding independently without scaffolding.	2