

# CCPS Science Unit Plan

<b>Grade</b>	4	<b>Subject</b>	Science	<b>Unit #</b>	3
<b>Unit Name</b>	Unit 3: Role of Organisms and Flow of Energy		<b>Timeline</b>	5 weeks	
<b>How to use the Framework</b>	<p style="color: red;">This Framework should be used to implement daily science instruction. The resources and instructional strategies reflected in the Framework will provide a foundation for effective implementation and student mastery of standards.</p> <p style="color: red;">Please see the hyperlinked <a href="#">abbreviation document</a> to ensure understanding of all abbreviations used with this framework.</p> <p style="color: blue;"><a href="#">CCPS Department of Science Website</a> for access to all unit frameworks</p>				
<b>Unit Overview</b>	<p style="color: red;">*All resources related to this Framework are embedded in this document or can be located via the Science Department website.</p> <p><b>Background Information:</b> In this unit, students learn that an organisms' energy role is determined by how it obtains energy and how it interacts with other organisms within the ecosystem. Students will use basic foods such as those served for lunch to make simple food chains. Understand that the energy from the food is used by the consumer of the food. Distinguish between producers, consumers, and decomposers. Realize that plants get their energy using sunlight to produce food. Imagine or research scenarios of examples of what happens to an ecosystem and the organisms that live there if there are too many organisms (kudzu), not enough organisms (construction or disease affecting a farm) or an absence of organisms (plants and animals that are endangered or extinct) to give consumers the energy they need. Research keystone species in Georgia such as the Gopher Tortoise. Find instances of changes of living and nonliving factors such as construction, new roads, and/or natural disasters such as flooding, weather events, earthquakes etc. that have changed an ecosystem.</p> <p><b>Prerequisites:</b>  <u>Kindergarten</u> - Unit 3: Living and NonLiving (Standards: SKL.1a/b)  <u>First Grade</u> - Unit 1: Plant and Animals (Standards: S1L1 a/b/c)</p> <p><b>By the end of this unit the student will be able to:</b></p> <ul style="list-style-type: none"> <li>● <i>model</i> the roles of organisms and the flow of energy within an ecosystem</li> <li>● <i>construct</i> a food web/chain</li> <li>● <i>use</i> data to <i>explain</i> changes in an ecosystem.</li> </ul> <p><b>By the end of this unit the teacher should:</b></p> <ul style="list-style-type: none"> <li>● <i>ensure</i> that students can ask questions to explore the relationships between organisms and energy flow,</li> <li>● <i>support</i> the students' plans as they carry out investigations</li> <li>● <i>guide</i> constructed explanations about how organisms obtain and use energy, develop and use models to represent energy transfer within ecosystems,</li> <li>● <i>model evaluating</i> to analyze and interpret data to identify patterns and connections in energy flow processes.</li> </ul>				

■ Science-4th-Teacher-Notes.pdf

**Lesson Plan guidance document and template**

■ Copy of Department of Science CCPS Lesson Plan Guidance Document .pdf

The document linked below will provide the teacher with guidance and understanding to support utilizing this framework in order to facilitate effective science instruction.

**Standards**

<b>GSE</b>	<b>Science and Engineering Practices</b>	<b>Crosscutting Concepts</b>
<p><b>S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.</b></p> <p><b>a.</b> Develop a model to describe the roles of producers, consumers, and decomposers in a community. (Clarification statement: Students are not expected to identify the different types of consumers – herbivores, carnivores, omnivores and scavengers.)</p> <p><b>b.</b> Develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.</p> <p><b>c.</b> Design a scenario to demonstrate the effect of a change on an ecosystem. (Clarification statement: Include living and nonliving factors in the scenario.)</p> <p><b>d.</b> Use printed and digital data to develop a model illustrating and describing changes to the flow of energy in an ecosystem when plants or animals become scarce, extinct or overabundant.</p>	<p><b>Ask Questions</b> A practice of science is to ask and refine questions that lead to descriptions and explanations of how the natural and designed world works and which can be empirically tested.</p> <p><b>Plan and Carry Out Investigations</b> Scientists and engineers plan and carry out investigations in the field or laboratory, working collaboratively as well as individually. Their investigations are systematic and require clarifying what counts as data and identifying variables or parameters.</p> <p><b>Construct Explanations</b> The products of science are explanations and the products of engineering are solutions.</p> <p><b>Develop and Use Models</b> A practice of both science and engineering is to use and construct models as helpful tools for representing ideas and explanations. These tools include diagrams, drawings, physical replicas, mathematical representations, analogies, and computer simulations.</p> <p><b>Analyzing and Interpreting Data</b> Scientific investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists use a range of tools—including tabulation, graphical interpretation, visualization, and statistical analysis—to identify the</p>	<p><b>Patterns</b> Observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them.</p> <p><b>Cause and Effect</b> Mechanism and explanation. Events have causes, sometimes simple, sometimes multifaceted. A major activity of science is investigating and explaining causal relationships and the mechanisms by which they are mediated. Such mechanisms can then be tested across given contexts and used to predict and explain events in new contexts.</p> <p><b>Systems and System Models</b> Defining the system under study—specifying its boundaries and making explicit a model of that system—provides tools for understanding and testing ideas that are applicable throughout science and engineering.</p> <p><b>Scale, proportion, and quantity:</b> In considering phenomena, it is critical to recognize what is relevant at different measures of size, time, and energy and to recognize how changes in scale, proportion, or quantity affect a system’s structure or performance.</p> <p><b>Energy and matter:</b> Flows, cycles, and conservation. Tracking fluxes of energy and matter into, out of, and within systems helps one understand the systems’ possibilities and limitations.</p>

		significant features and patterns in the data. Scientists identify sources of error in the investigations and calculate the degree of certainty in the results. Modern technology makes the collection of large data sets much easier, providing secondary sources for analysis.	
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<b>NGSS Alignment</b>	<a href="#">NGSS Alignment to Disciplinary Core Ideas</a>
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<b>The Phenomenon Protocol</b>
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Anchoring Phenomena	Learning Targets
<a href="#">S4L1a.pdf (Video)</a>	Students will develop a model to describe the roles of producers, consumers, and decomposers in a community.
<a href="#">S4L1b.pdf</a>	Students will develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.
<a href="#">S4L1c.pdf</a>	Students will be able to construct an explanation of how weather instruments are used in gathering weather data and making forecasts
<a href="#">S4L1d.pdf</a>	The students will interpret data from weather maps to make informed predictions about the next day's weather.

<b>Weekly Lesson Tasks</b>
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Week 1	
<b>GSE:S4L1.a</b>	<b>Focused Concept:</b> Develop a model to describe the roles of producers, consumers, and decomposers in a community.
<b>Learning Target:</b>	Students will develop a model to describe the roles of producers, consumers, and decomposers in a community.
<b>Lab Safety and Materials:</b>	<a href="#">General Safety Practices for the Elementary Science Classroom- TOC.docx</a>
<b>Phenomenon:</b> <a href="#">S4L1a.pdf</a> <a href="#">Decomposing Pumpkin</a>	<b>DQ:</b> <i>What are the roles of producers, consumers, and decomposers</i>

<i>within a community?</i>				
Day 1: Opening	Day 2 : Guided Practice/ Transition	Day 3: Independent Practice	Day 4: Independent Practice	Day 5: Assessment / Summary
<p><b>Phenomenon Introduction</b>  <a href="#">S4L1a.pdf</a>  <b>Decomposing Pumpkin</b>  <b>See. Think. Wonder.</b></p> <p>Use the <a href="#">See-Think-Wonder</a> protocol to guide student thinking.</p> <p>Teachers should provide students opportunities to share observations and develop questions. The teacher should record students' observations and questions on chart paper for referencing throughout this week's lesson.</p> <p><b>Inquiry Activity</b>  <b>Roles in Community</b>  <a href="#">Role In Community ...</a></p> <p><b>SEP TEACHER TIP:</b>  To support students with the Science &amp; Engineering Practices for this week, follow the guidance in this protocol:  <a href="#">Develop and Use Mo...</a></p> <p><b>Facilitation:</b>  Click here for <a href="#">picture cards</a>  Students will construct connections between picture cards to represent each role.  OR students can draw</p>	<p><b>Introduce the Driving Question:</b></p> <p>Have students review the driving question:</p> <p><i>What are the roles of producers, consumers, and decomposers within a community?</i></p> <p>Use the strategy to support students with making connections and understanding the driving question (DQ).  <a href="#">Visualizing the Driving Question</a></p> <p>Click here to access <a href="#">question words reference chart</a></p> <p>The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer.</p> <p>Be sure to create a reference for students to have throughout the week.  <b>**Teacher Note:</b> Students should not answer the driving question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format.  <a href="#">(3-5 teachers and students should</a></p>	<p><b>Graphic Organizer</b></p> <p><a href="#">Role Cards for Energy Tag...</a></p> <p><a href="#">Role In a Community.pdf</a></p> <p><b>Materials</b>  colored stickers  clothespins (look in STEMscopes box)</p> <p><b>Investigation Facilitation</b>  <b>GaDOE Inspire Task: Energy Flow Tag</b></p> <p><b>Objective:</b> The objective of the following game is to model the flow of energy through a food chain.</p> <p><b>SEP TEACHER TIP:</b>  To support students with the Science &amp; Engineering Practices for this week, follow the guidance in this protocol:  <a href="#">Develop and Use Models.pdf</a></p> <p>Students will be assigned a role. Students will need to review their role card and hear the safety rules prior to the start of the game.</p> <p>As the teacher calls out the various cues, the students will respond to the cues based on the teacher's instructions.</p>	<p><b>Text Annotation Strategy</b></p> <p>Have students read and annotate the following text:  <a href="#">Just Role With It</a></p> <p>The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy:  <a href="#">3-5 Text Annotation Prot...</a></p> <p>Students should complete the following student handout as they work through the text annotation protocol:  <a href="#">3-5 Information Analysis Student Organizer (editable)</a>  <a href="#">3-5 Information Analysis...</a></p> <p>During the teacher-led discussion, the teacher should ask the following questions:  <b>Why do scientists call plants producers?</b>  The text states that the rabbit begins to consume all the food its stomach can hold. What is another way to explain the term consumer?  <b>How do mushrooms act as decomposers?</b></p> <p><b>**TEACHER NOTE:</b> Read and</p>	<p><b>Claim-Evidence-Reasoning</b></p> <p>Students will write a response to the following driving question in the CER format.</p> <p><i>What are the roles of producers, consumers, and decomposers within a community?</i></p> <p>Review the <a href="#">claim-evidence-reasoning poster</a> with the students</p> <p><b>**TEACHER NOTE:</b> Provide students with sentence starters by sharing on the board:  <a href="#">3-5 Claim-Evidence-Rea...</a></p> <p>Have students write their claim-evidence-reasoning</p> <p><b>writing a claim</b>  Have students develop a claim which is their answer to the driving question, claim. Students should use all their knowledge from the phenomenon, inquiry activity, investigation, and information analysis protocol to develop an answer to the question.</p> <p><b>writing evidence</b>  Students should provide observational or numerical data as their evidence from their investigation and write a short caption or brief description of</p>

pictures of organisms present in their environment to use for this activity (look for organisms around the school, outside their home, etc.)

Students will connect the pictures of organisms and the source of energy according to their prior knowledge.

Provide students with picture cards. Have students tape the picture cards on the chart paper and draw lines from one organism or source of energy as they make connections. Allow students to record their connections and ideas on post-it notes. Post it notes should remain on their pre-reading board. Any connection made is acceptable for the pre-activity.

**Discussion:** Have students share the connections they identify between the picture cards provided.

*What are the relationships between living things? Are there any patterns present when viewing the connections between animals and plants? How can a model help us to understand the relationship between living things in an ecosystem?*

focus on developing claim, evidence, and reasoning)

### Claim-Evidence-Reasoning (CER)

**Objective:** Expose students to claim-evidence-reasoning (CER) student samples below to review and understand their peers' thoughts on the topic, initiating the process of developing skills for effective argumentation.

The teacher should state the following to students:

“Claim-Evidence-Reasoning or CER is a way of writing that helps students understand and explain what they learn in science investigations and science ideas.”

Review the [claim-evidence-reasoning poster](#) with students.

As a class or in student groups, provide students with this week’s claim- evidence-reasoning sample.

■ [Food Chain Student Sampl...](#)  
[This CER will introduce a concept that students will learn later in the unit. However, the goal of unit is to ensure that students know how to analyze a CER correctly](#)

The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis

### TEACHER USE ONLY:

■ [Science-4th-Literacy-Plan...](#)

As the students progress through the game, have students discuss the organisms that survived and why.

*State and ask the students the following: Let's think about the last two organisms alive. Why has this occurred this way?*

Following the investigation, have students complete the interactivity in SAVVAS [Consumers, Producers, and Decomposers](#)

\*\*TEACHER NOTE:

**Facilitation Directions for Teacher use, see below:**

■ [Science-4th-Literacy-Plan...](#)

Review the facilitation instructions of **ACTIVITY 2** in the linked literacy task above. Have students complete the required procedure according to the instructions provided.

**Activity 1** was completed as the inquiry activity for this week. The facilitation of this investigation is provided in the plan for **ACTIVITY 2**.

Be sure to collect materials for stickers and assign roles prior to the lesson’s facilitation.

review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the groups will change to limit time used for transitioning.

### Vocabulary Strategy

#### Vocabulary Words:

Producers  
Consumers  
Decomposers

### Understanding Vocabulary Strategy

Provide students with the [graphic organizer \(editable\)](#) or [pdf handout](#), explaining its sections: word, antonym, synonym, picture, *in my own words* (meaning), and sentence

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words. The teacher should provide and post the meaning of the word for students to refer to.

Allow students to work in collaborative groups to discuss an antonym and a synonym. The group should draw or provide/insert an image of the word based on their understanding, write the provided meaning in their own words and write a sentence using the vocabulary word.

the data they provide to support their claim.

### writing the reasoning

Students will use textual evidence from the “text annotation graphic organizer” to generate the reasoning or justification in the CER format.

Have students use the following template to write their claim-evidence-reasoning (CER)

[3-5 Student Writing Template \(editable\)](#)

[3-5 Student Writing Template \(pdf\)](#)

\*\*TEACHER NOTE: Have students review the student sample(s) of claim-evidence-reasoning on Day 2. Have students compare their writing to those students' samples. Ask the following questions:

*How are your thoughts or understanding similar to another writer on the topic? How are your thoughts or understanding different to another writer on the topic? What would you like to learn more about? Why?*

### Assessment for Learning:

[S4L1a Assessment](#)

**\*\*TEACHER NOTE:**

The goal is for students to see the connections between the picture cards and construct explanations for the connections. This conversation and chart of connections will be needed for the post-reading activity.

**Materials:**

Chart paper (hung on the wall), picture cards, tape, marker, post-it notes

protocol:

[Claim-Evidence-Reasoning Record Observations Document](#)  
(google doc)

[Claim-Evidence-Reasoning...](#)  
(PDF)

*1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.*

*2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.*

*3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.*

Ask the following questions to students as they analyze the student samples:

[Claim-Evidence-Reasoning...](#)

**\*\*Teacher Note:** As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.

Have students collaborate, in groups, to complete the strategy for the other vocabulary terms.

Allow groups to share their thinking through academic dialogue and compare their completed task with members of other groups.



<b>GSE: S4L1b</b>		<b>Focused Concept:</b> Develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.		
<b>Learning Target:</b>	Students will develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.			
<b>Lab Safety and Materials:</b>	Teachers should be sure that students have enough safe space to move around. The space will need to be conducive with the diagram provided in the lesson resources. <a href="#">W General Safety Practices for the Elementary Science Classroom- TOC.docx</a>			
<b>Phenomenon:</b> <a href="#">S4L1b.pdf</a>		<b>DQ:</b> <i>How does energy flow within a food chain?</i> (Students will focus on food web in the following week)		
<b>Day 1: Opening</b>	<b>Day 2 : Guided Practice/ Transition</b>	<b>Day 3: Independent Practice</b>	<b>Day 4: Independent Practice</b>	<b>Day 5: Assessment / Summary</b>
<p><a href="#">S4L1b.pdf</a></p> <p><b>See. Think. Wonder.</b></p> <p>Use the <a href="#">See-Think-Wonder</a> protocol to guide student thinking.</p> <p>Teachers should provide students opportunities to share observations and develop questions. The teacher should record students' observations and questions on chart paper for referencing throughout this week's lesson.</p> <p><b>Inquiry Activity</b> <b>SEP TEACHER TIP:</b> To support students with the Science &amp; Engineering Practices for this week, follow the guidance in this protocol: <a href="#">Develop and Use Models...</a></p> <p><a href="#">Following the Energy Tag Lab</a></p>	<p><b>Introduce the Driving Question:</b></p> <p>Have students review the driving question:</p> <p><i>How does energy flow within a food chain?</i></p> <p>Use the strategy to support students with making connections and understanding the driving question (DQ).</p> <p><a href="#">Visualizing the Driving Question</a></p> <p>Click here to access <a href="#">question words reference chart</a></p> <p>The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer.</p> <p>Be sure to create a reference for students to have throughout the week. <b>**Teacher Note:</b> Students</p>	<p><b>Graphic Organizer</b> <a href="#">Eat or Be Eaten</a></p> <p><b>Materials</b> <b>Investigation Facilitation</b> <b>Objective:</b> Students develop their thinking about the predator/prey relationships between living things.</p> <p><b>SEP TEACHER TIP:</b> To support students with the Science &amp; Engineering Practices for this week, follow the guidance in this protocol: <a href="#">Develop and Use Models...</a></p> <p><b>Activity 1:</b> In the activity, <a href="#">Eat or Be Eaten</a>, students play a card game in which they make food chains with predators and prey, and producers and consumers. The students who make the longest food chains win the game!</p> <p><b>Activity 2:</b> Food Chain: GIZMO</p>	<p><b>Text Annotation Strategy</b></p> <p>Have students read and annotate the following text: <a href="#">Food Chains: Readworks</a></p> <p>The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy: <a href="#">3-5 Text Annotation Prot...</a></p> <p>Students should complete the following student handout as they work through the text annotation protocol: <a href="#">3-5 Information Analysis Student Organizer (editable)</a> <a href="#">3-5 Information Analysis...</a></p> <p>During the teacher-led discussion, the teacher should ask the following questions:</p> <p>How does the flow of energy in an ecosystem change depending</p>	<p><b>Claim-Evidence-Reasoning</b></p> <p>Students will write a response to the following driving question in the CER format.</p> <p><i>How does energy flow within a food chain?</i></p> <p>Review the <a href="#">claim-evidence-reasoning poster</a> with the students</p> <p><b>**TEACHER NOTE:</b> Provide students with sentence starters by sharing on the board: <a href="#">3-5 Claim-Evidence-Rea...</a></p> <p>Have students write their claim-evidence-reasoning</p> <p><b>writing a claim</b> Have students develop a claim which is their answer to the driving question, claim. Students should use all their knowledge from the phenomenon, inquiry activity, investigation, and information</p>

**Materials:** 5 plastic cups (for each group), 5 paper bowls (for each group), paper towels  
Note: Students are in groups of 5, if you have several groups, the supplies will be in multiples of 5)

**Facilitation:**

Students will construct connections between the amount of water needed for each step of the water being used (given) and how much energy larger animals require.

Provide students with plastic cups and paper bowls. Have students pour the remaining water in their cup one at a time starting with cup number 1. Allow students to discuss their ideas with their group.

**Discussion:** Have students share the connections.

*If water is the energy, what did we observe as energy moved from one cup to another?  
What can this observation tell us about the way energy transfers between organisms?*

**\*\*TEACHER NOTE:**

Make sure the students are standing far enough apart for some of the water to fall through the holes in the cup before they reach the next cup (student) to pour into.

should not answer the driving question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format.

(3-5 teachers and students should focus on developing claim, evidence, and reasoning)

**Claim-Evidence-Reasoning (CER)**

**Objective:** Expose students to claim-evidence-reasoning (CER) student samples below to review and understand their peers' thoughts on the topic, initiating the process of developing skills for effective argumentation.

The teacher should state the following to students:

“Claim-Evidence-Reasoning or CER is a way of writing that helps students understand and explain what they learn in science investigations and science ideas.”

Review the [claim-evidence-reasoning poster](#) with students.

As a class or in student groups, provide students with this week's claim-evidence-reasoning sample.

**Objective:** In this ecosystem consisting of hawks, snakes, rabbits and grass, the population of each species can be studied as part of a food chain.

Have students manipulate the Gizmo to determine the relationship between animals in a food chain and how they are impacted when the population of their food source decreases or increases.

[Gizmo Lab Sheet](#)

**\*\*TEACHER NOTE:**

The goal of the inquiry is for students to make as many cards as you can into food chains AND make those food chains as long as you can. Remember: Students will only be engaging with food chains this week. Next week the students will engage with food webs.

Before the activity: The teacher should assign a set of cards to each group of (3 to 5) students. The cards will need to be printed and sorted. Each group may have different arrangements. The teacher will be looking for conversations and connections.

on the animals?  
Why do producers need sunlight and water?  
Which of the organisms in an ecosystem is more vital? Why do you feel this is true?

**\*\*TEACHER NOTE:** Read and review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the groups will change to limit time used for transitioning.

**Vocabulary Strategy**

**Vocabulary Words:**

*food chain,  
population  
predator,  
prey*

**Vocabulary Strategy:**

**Vocabulary Connect Two Strategy**

Provide students with the [graphic organizer \(editable\)](#) or [pdf handout](#).

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words. Allow students to research the word using reference tools (google, research options, peer discussion, etc.). The teacher should model researching the word and using the information gathered to decide on another term that creates connections between the vocabulary word

analysis protocol to develop an answer to the question.

[writing evidence](#)

Students should provide observational or numerical data as their evidence from their investigation and write a short caption or brief description of the data they provide to support their claim.

[writing the reasoning](#)

Students will use textual evidence from the “text annotation graphic organizer” to generate the reasoning or justification in the CER format.

Have students use the following template to write their claim-evidence-reasoning (CER)

[3-5 Student Writing Template \(editable\)](#)

[3-5 Student Writing Template \(pdf\)](#)

**\*\*TEACHER NOTE:** Have students review the student sample(s) of claim-evidence-reasoning on Day 2. Have students compare their writing to those students' samples. Ask the following questions:

*How are your thoughts or understanding similar to another writer on the topic?  
How are your thoughts or understanding different to another writer on the topic?  
What would you like to learn more about? Why?*



■ Food Web Student Sampl...

This CER will introduce a concept that students will learn later in the unit. However, the goal of unit is to ensure that students know how to analyze a CER correctly

The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol:

[Claim-Evidence-Reasoning Record Observations Document](#)  
(google doc)

■ Claim-Evidence-Reasoni...  
(PDF)

*1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.*

*2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.*

*3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.*

Ask the following questions to students as they analyze the student samples:

and another term/word.

Allow students to work in collaborative groups to discuss and research the other provided vocabulary terms and repeat the modeled instructional strategy.

Have students collaborate, in groups, to complete the strategy for the other vocabulary terms.

Allow groups to share their thinking through academic dialogue and compare their completed task with members of other groups.

**Assessment for Learning:**

[S4L1b Assessment](#)

**Claim-Evidence-Reasoni...**

**\*\*Teacher Note:** As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.

**Week 3**

**GSE:S4L1b**

**Focused Concept:** Develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.

**Learning Target:**

Students will be able to construct an explanation of how weather instruments are used in gathering weather data and making forecasts

**Lab Safety and Materials:**

Teachers should be sure that students have enough safe space to move around. The space will need to be conducive with the diagram provided in the lesson resources.

**S4L1b.pdf**

**DQ:** *How does energy flow within a food web?*

**Day 1: Opening**

**Day 2 : Guided Practice/  
Transition**

**Day 3: Independent Practice**

**Day 4: Independent Practice**

**Day 5: Assessment / Summary**

**S4L1b.pdf**

**See. Think. Wonder.**

Use the [See-Think-Wonder](#) protocol to guide student thinking.

Teachers should provide students opportunities to share observations and develop questions. The

**Introduce the Driving Question:**

Have students review the driving question:

*How does energy flow within a food web?*

Use the strategy to support students with making connections and understanding the driving question (DQ).

**Graphic Organizer**

[Die Off Cards](#)  
[Dinosaur Food Web Students Lab Sheet](#)

**Materials**

Die Off Cards  
Student Lab Sheets  
Pens, crayons, or colored pencils will also work.  
1 marker per student  
Scissors

**Text Annotation Strategy**

Have students read and annotate the following text:  
[Food Web Readworks](#)

The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy:

**Claim-Evidence-Reasoning**

Students will write a response to the following driving question in the CER format.

*How does energy flow within a food web?*

Review the [claim-evidence-reasoning poster](#) with the students

teacher should record students' observations and questions on chart paper for referencing throughout this week's lesson.

### **Inquiry Activity**

#### **How does energy travel? Activity 2**

#### **SEP TEACHER TIP:**

To support students with the Science & Engineering Practices for this week, follow the guidance in this protocol:

- Develop and Use Models...

*Where does energy come from?  
How is energy passed from one organism to the next?*

*Why do organisms need energy?*

**“Describe how energy is flowing from one organism to the next.”**

#### **Graphic Organizer**

**\*\*TEACHER NOTE:** The instructions to facilitate this lab and the expectations of this lab are provided in the linked pdf above. Students should engage in the resources provided.

#### **Visualizing the Driving Question**

Click here to access [question words reference chart](#)

The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer.

Be sure to create a reference for students to have throughout the week.

**\*\*Teacher Note:** Students should not answer the driving question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format.

(3-5 teachers and students should focus on developing claim, evidence, and reasoning)

#### **Claim-Evidence-Reasoning (CER)**

**Objective:** Expose students to claim-evidence-reasoning (CER) student samples below to review and understand their peers' thoughts on the topic, initiating the process of developing skills for effective argumentation.

The teacher should state the following to students:

#### **Investigation Facilitation**

Investigation for this week will come from Mystery Science: [Why did the dinosaurs go extinct?](#) It is labeled a 5th grade lesson.

#### **SEP TEACHER TIP:**

To support students with the Science & Engineering Practices for this week, follow the guidance in this protocol:

- Develop and Use Models...

Allow students to Create a Dinosaur Food Web, students use cards and construction paper connectors to create a food web from the time of the dinosaurs. Using this model, they follow the flow of energy through the food web and figure out why dinosaurs went extinct but some other animals survived.

Each pair of students needs an area that's about 2 feet by 3 feet for their completed food web. Plan for enough space. Students can work at desks, tables, or on the floor.

**What animals do you think Tyrannosaurus rex would eat?  
Why do you think that?  
Why did some animals go extinct while other animals survived?**

#### ■ 3-5 Text Annotation Prot...

Students should complete the following student handout as they work through the text annotation protocol:

#### **3-5 Information Analysis Student Organizer (editable)**

- 3-5 Information Analysis...

During the teacher-led discussion, the teacher should ask the following questions:

**What determines the flow of energy in an ecosystem?  
How does the sun affect producers in an ecosystem?  
When does the cycle of energy flow stop in an ecosystem?**

**\*\*TEACHER NOTE:** Read and review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the groups will change to limit time used for transitioning.

#### **Vocabulary Strategy**

#### **Vocabulary Words:**

*food web  
overabundance  
scarce*

#### **Vocabulary Strategy:**

#### **Four Square**

Provide students with the [graphic organizer \(editable\)](#) or [pdf handout](#), explaining its four sections: word, meaning,

**\*\*TEACHER NOTE:** Provide students with sentence starters by sharing on the board:

- 3-5 Claim-Evidence-Rea...

Have students write their claim-evidence-reasoning

#### **writing a claim**

Have students develop a claim which is their answer to the driving question, claim. Students should use all their knowledge from the phenomenon, inquiry activity, investigation, and information analysis protocol to develop an answer to the question.

#### **writing evidence**

Students should provide observational or numerical data as their evidence from their investigation and write a short caption or brief description of the data they provide to support their claim.

#### **writing the reasoning**

Students will use textual evidence from the “text annotation graphic organizer” to generate the reasoning or justification in the CER format.

Have students use the following template to write their claim-evidence-reasoning (CER)

[3-5 Student Writing Template \(editable\)](#)

[3-5 Student Writing Template \(pdf\)](#)

“Claim-Evidence-Reasoning or CER is a way of writing that helps students understand and explain what they learn in science investigations and science ideas.”


Review the [claim-evidence-reasoning poster](#) with students.

As a class or in student groups, provide students with this week’s claim-evidence-reasoning sample.

The teacher will pull students samples from earlier in the unit for peer review. Be sure to hide student names.

The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol:

[Claim-Evidence-Reasoning Record Observations Document](#) (google doc)

 Claim-Evidence-Reasoni... (PDF)

*1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.*

*2. Identify the student's evidence*

picture, and sentence.

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words.

Allow students to work in collaborative groups. Actively monitor and facilitate small group discussions and review various artifacts (pictures, images, primary sources, charts) to build knowledge of the term.

Have students collaborate to complete the four square strategy for the other vocabulary terms.

Monitor student progress, sharing new ideas for class discussion, and help students distinguish essential from non-essential characteristics.

Allow groups to share their thinking through academic dialogue and compare their completed task with members of other groups.

**\*\*TEACHER NOTE:** Have students review the student sample(s) of claim-evidence-reasoning on Day 2. Have students compare their writing to those students' samples. Ask the following questions:

*How are your thoughts or understanding similar to another writer on the topic?  
How are your thoughts or understanding different to another writer on the topic?  
What would you like to learn more about? Why?*

**Assessment for Learning:**

[S4L1b Assessment](#)

*in the sample and have the teacher or students write their observations or questions.*

*3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.*

Ask the following questions to students as they analyze the student samples:

▮ Claim-Evidence-Reasoni...

**\*\*Teacher Note:** As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.

#### Week 4

GSE:S4L1c

**Focused Concept:** Design a scenario to demonstrate the effect of a change on an ecosystem.

**Phenomenon:** ▮ S4L1c.pdf [Video](#)

**DQ:** What are the effects of change in an ecosystem?

**Learning Target:**

Students will develop a model to describe the roles of producers, consumers, and decomposers in a community.

**Lab Safety and Materials:**

Teachers should be sure that students have enough safe space to move around. The space will need to be conducive with the diagram provided in the lesson resources.

**Day 1: Opening**

**Day 2 : Guided Practice/  
Transition**

**Day 3: Independent Practice**

**Day 4: Independent Practice**

**Day 5: Assessment / Summary**

## ■ S4L1c.pdf [Video](#)

### See. Think. Wonder.

Use the [See-Think-Wonder](#) protocol to guide student thinking.

Teachers should provide students opportunities to share observations and develop questions. The teacher should record students' observations and questions on chart paper for referencing throughout this week's lesson.

### **Inquiry Activity** **Gizmo Activity:**

☰ Forest Ecosystem

**Objective:** Determine the feeding dependencies in a forest ecosystem. Learn the roles of producers, consumers, and decomposers in the carbon cycle. Determine which consumers are decomposers. Interpret pictographs and line graphs.

### **SEP TEACHER TIP:**

To support students with the Science & Engineering Practices for this week, follow the guidance in this protocol:

■ Develop and Use Models...

### **Facilitation:**

Assign students to computers. Students can work individually or in small groups. Ask students

### **Introduce the Driving Question:**

Have students review the driving question:  
*What are the effects of change in an ecosystem?*

Use the strategy to support students with making connections and understanding the driving question (DQ).

### [Visualizing the Driving Question](#)

Click here to access [question words reference chart](#)

The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer.

Be sure to create a reference for students to have throughout the week.  
**\*\*Teacher Note:** Students should not answer the driving question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format.

(3-5 teachers and students should focus on developing claim, evidence, and reasoning)

### **Claim-Evidence-Reasoning (CER)**

### **Graphic Organizer**

#### [Why do living things depend on each other?](#)

#### **Materials**

Student Chrombooks  
Blank/Construction Paper  
Pencils  
Crayons/Markers

#### **Investigation Facilitation**

Investigation for this week will come from a developed task called : *Why do living things depend on each other?*

#### **SEP TEACHER TIP:**

To support students with the Science & Engineering Practices for this week, follow the guidance in this protocol:  
■ Develop and Use Models...

Have students discuss and write cause and effect relationships. Then design their own scenario with a different ecosystem.  
*Identify and explain cause and effect relationships.*

*In your groups, design your own scenario with a different ecosystem.*

#### **\*\*Teacher Note:**

Please show the video below AFTER the activity. This information will be needed during next week's lesson.

▶ How Wolves Change Riv...  
Teacher will: Assign a different scenario to each group of two to three students.

### **Text Annotation Strategy**

Have students read and annotate the following text:  
[Pythons Invade the Florida Everglades](#)

The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy:

■ 3-5 Text Annotation Prot...

Students should complete the following student handout as they work through the text annotation protocol:

#### [3-5 Information Analysis Student Organizer \(editable\)](#)

■ 3-5 Information Analysis...

During the teacher-led discussion, the teacher should ask the following questions:

What happens when an organism is removed from an ecosystem?

What are some positive changes that can happen in an ecosystem?

Can animals or organisms return from extinction? Why or why not?

**\*\*TEACHER NOTE:** Read and review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the groups will change to limit time used for transitioning.

### **Claim-Evidence-Reasoning**

Students will write a response to the following driving question in the CER format.

What are the effects of change in an ecosystem?

Review the [claim-evidence-reasoning poster](#) with the students

**\*\*TEACHER NOTE:** Provide students with sentence starters by sharing on the board:

■ 3-5 Claim-Evidence-Rea...

Have students write their claim-evidence-reasoning

#### **writing a claim**

Have students develop a claim which is their answer to the driving question, claim. Students should use all their knowledge from the phenomenon, inquiry activity, investigation, and information analysis protocol to develop an answer to the question.

#### **writing evidence**

Students should provide observational or numerical data as their evidence from their investigation and write a short caption or brief description of the data they provide to support their claim.

#### **writing the reasoning**

Students will use textual evidence from the "text



to work through the activities in the Student Exploration using the Gizmo. Encourage students to paste screenshots of their results into a document so they can compare their work. Alternatively, you can use a projector and do the Exploration as a teacher-led activity.

**Objective:** Expose students to claim-evidence-reasoning (CER) student samples below to review and understand their peers' thoughts on the topic, initiating the process of developing skills for effective argumentation.

The teacher should state the following to students:

“Claim-Evidence-Reasoning or CER is a way of writing that helps students understand and explain what they learn in science investigations and science ideas.”

Review the [claim-evidence-reasoning poster](#) with students.

As a class or in student groups, provide students with this week's claim-evidence-reasoning sample.

[The teacher will pull students samples from earlier in the unit for peer review. Be sure to hide student names.](#)

The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol:

[Claim-Evidence-Reasoning](#)

Students will: Formulate answers to the scenario question and discuss their ideas.

Teacher will: Distribute construction paper to each group of students. Students will design their own scenarios to demonstrate the effects of change in an ecosystem.

### Vocabulary Strategy

#### Vocabulary Words:

*Ecosystem*  
*Dependent*  
*Community*  
*Effect vs. Affect*

#### Vocabulary Strategy:

#### Vocabulary Terms Chart

Provide students with the [graphic organizer \(editable\)](#) or [pdf handout](#), explaining its sections: word, *What did it look like in the investigation?*, meaning, image/drawing, connection

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words. The teacher should provide the meaning of the word to the students and ask students to provide examples of how the word was represented during the investigation, phenomenon and/or inquiry activity. In the connection column, students should write how the word connects to concepts or observations they gathered during their classroom tasks. Allow students to work in collaborative groups. Actively monitor and facilitate small group discussions and review various artifacts (pictures, images, primary sources, charts) to build knowledge of the term.

annotation graphic organizer” to generate the reasoning or justification in the CER format.

Have students use the following template to write their claim-evidence-reasoning (CER)

[3-5 Student Writing Template \(editable\)](#)

[3-5 Student Writing Template \(pdf\)](#)

**\*\*TEACHER NOTE:** Have students review the student sample(s) of claim-evidence-reasoning on Day 2. Have students compare their writing to those students' samples. Ask the following questions:

*How are your thoughts or understanding similar to another writer on the topic?*  
*How are your thoughts or understanding different to another writer on the topic?*  
*What would you like to learn more about? Why?*

### Assessment for Learning:

#### S4L1c Assessment

[Record Observations Document](#)  
(google doc)

■ Claim-Evidence-Reasoni...  
(PDF)

*1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.*

*2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.*

*3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.*

Ask the following questions to students as they analyze the student samples:

■ Claim-Evidence-Reasoni...

**\*\*Teacher Note:** As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.

Have students collaborate, in groups, to complete the vocabulary terms chart for the other vocabulary terms.

Allow groups to share their thinking through academic dialogue and compare their completed task with members of other groups.

GSE: S4L1d		<b>Focused Concept:</b> Use printed and digital data to develop a model illustrating and describing changes to the flow of energy in an ecosystem when plants or animals become scarce, extinct or overabundant.		
<b>Learning Target:</b>		The students will interpret data from weather maps to make informed predictions about the next day's weather.		
<b>Lab Safety and Materials</b>		<a href="#">W General Safety Practices for the Elementary Science Classroom- TOC.docx</a>		
<b>Phenomenon:</b> <a href="#">S4L1d.pdf</a>		<b>DQ:</b> What changes can be expected in an ecosystem when animals become scarce, extinct, or over-abundant?		
<b>Day 1: Opening</b>	<b>Day 2 : Guided Practice/ Transition</b>	<b>Day 3: Independent Practice</b>	<b>Day 4: Independent Practice</b>	<b>Day 5: Assessment / Summary</b>
<p><a href="#">S4L1d.pdf</a></p> <p><b>See. Think. Wonder.</b></p> <p>Use the <a href="#">See-Think-Wonder</a> protocol to guide student thinking.</p> <p>Teachers should provide students opportunities to share observations and develop questions. The teacher should record students' observations and questions on chart paper for referencing throughout this week's lesson.</p> <p><b>Inquiry Activity</b> <a href="#">The Forest of Change</a></p> <p><b>Objective:</b> Students will complete the lab to collect data about how animal populations change over two years in two different forests.</p> <p><b>SEP TEACHER TIP:</b></p>	<p><b>Introduce the Driving Question:</b></p> <p>Have students review the driving question:</p> <p>What changes can be expected in an ecosystem when animals become scarce, extinct, or over-abundant?</p> <p>Use the strategy to support students with making connections and understanding the driving question (DQ).</p> <p><a href="#">Visualizing the Driving Question</a></p> <p>Click here to access <a href="#">question words reference chart</a></p> <p>The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer.</p> <p>Be sure to create a reference for students to have throughout the</p>	<p><b>Graphic Organizer</b> <a href="#">Habitat Scenario Task Cards</a> <a href="#">Presentation Notes</a></p> <p><b>Materials</b> <a href="#">Task Cards</a> <a href="#">Presentation Notes</a></p> <p><b>Investigation Facilitation</b> <b>Habitat Scenario</b></p> <p><b>Objective:</b> Students will</p> <p><b>SEP TEACHER TIP:</b> To support students with the Science &amp; Engineering Practices for this week, follow the guidance in this protocol: <a href="#">Develop and Use Models...</a></p> <p><i>What phenomenon can be observed as a result of the scarcity of the frogs?</i></p> <p><i>What are some other possible effects that could result from the</i></p>	<p><b>t Annotation Strategy</b></p> <p>Have students read and annotate the following text: <a href="#">Habitats in the Zoo</a></p> <p>The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy:</p> <p><a href="#">3-5 Text Annotation Prot...</a></p> <p>Students should complete the following student handout as they work through the text annotation protocol: <a href="#">3-5 Information Analysis Student Organizer (editable)</a> <a href="#">3-5 Information Analysis...</a></p> <p>During the teacher-led discussion, the teacher should ask the following questions:</p> <p><b>What changes in an ecosystem causes the most impact?</b></p>	<p><b>Claim-Evidence-Reasoning</b></p> <p>Students will write a response to the following driving question in the CER format.</p> <p>What changes can be expected in an ecosystem when animals become scarce, extinct, or over-abundant?</p> <p>Review the <a href="#">claim-evidence-reasoning poster</a> with the students</p> <p><b>**TEACHER NOTE:</b> Provide students with sentence starters by sharing on the board:</p> <p><a href="#">3-5 Claim-Evidence-Rea...</a></p> <p>Have students write their claim-evidence-reasoning</p> <p><b>writing a claim</b></p> <p>Have students develop a claim which is their answer to the driving question, claim. Students should use all their</p>

To support students with the Science & Engineering Practices for this week, follow the guidance in this protocol:

**Develop and Use Models...**

*At the end of your activity, use the collected data to describe how other animal populations changed during the same time.*

week.  
**\*\*Teacher Note:** Students should not answer the driving question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format.

(3-5 teachers and students should focus on developing claim, evidence, and reasoning)

**Claim-Evidence-Reasoning (CER)**

**Objective:** Expose students to claim-evidence-reasoning (CER) student samples below to review and understand their peers' thoughts on the topic, initiating the process of developing skills for effective argumentation.

The teacher should state the following to students:

“Claim-Evidence-Reasoning or CER is a way of writing that helps students understand and explain what they learn in science investigations and science ideas.”

Review the [claim-evidence-reasoning poster](#) with students.

As a class or in student groups, provide students with this

*population control measures in the Zimbabwe savannah?*

*Is climate change the major factor in the amazon? Why or why not?*

*What are some examples of other ocean life that may be affected by this imbalance and what are those affects?*

**\*\*Teacher Note:**  
**Guide students through the thought process of how to develop a solution to consider the [effects of organisms in ecosystems](#).**

How can animals be safely reintroduced back into an ecosystem?

**\*\*TEACHER NOTE:** Read and review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the groups will change to limit time used for transitioning.

**Vocabulary Strategy**

**Vocabulary Words:**

*Endangered*  
*Extinct*  
*Overabundant*  
*Vital*

**Vocabulary Connect Two Strategy**

Provide students with the [graphic organizer \(editable\)](#) or [pdf handout](#).

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words. Allow students to research the word using reference tools (google, research options, peer discussion, etc.). The teacher should model researching the word and using the information gathered to decide on another term that creates connections between the vocabulary word and another term/word.

Allow students to work in collaborative groups to discuss

knowledge from the phenomenon, inquiry activity, investigation, and information analysis protocol to develop an answer to the question.

**writing evidence**

Students should provide observational or numerical data as their evidence from their investigation and write a short caption or brief description of the data they provide to support their claim.

**writing the reasoning**

Students will use textual evidence from the “text annotation graphic organizer” to generate the reasoning or justification in the CER format.

Have students use the following template to write their claim-evidence-reasoning (CER)

[3-5 Student Writing Template \(editable\)](#)

[3-5 Student Writing Template \(pdf\)](#)

**\*\*TEACHER NOTE:** Have students review the student sample(s) of claim-evidence-reasoning on Day 2. Have students compare their writing to those students' samples. Ask the following questions:


*How are your thoughts or understanding similar to another writer on the topic?*  
*How are your thoughts or*

week's claim-evidence-reasoning sample.

**The teacher will pull students samples from earlier in the unit for peer review. Be sure to hide student names.**

The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol:

[Claim-Evidence-Reasoning Record Observations Document](#) (google doc)

 Claim-Evidence-Reasoni... (PDF)


*1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.*

*2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.*

*3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.*

Ask the following questions to students as they analyze the student samples:

+

 Claim-Evidence-Reasoni...

and research the other provided vocabulary terms and repeat the modeled instructional strategy.

Have students collaborate, in groups, to complete the strategy for the other vocabulary terms.

Allow groups to share their thinking through academic dialogue and compare their completed task with members of other groups.

*understanding different to another writer on the topic? What would you like to learn more about? Why?*

**Assessment for Learning:**

[S4L1d Assessment](#)

**\*\*Teacher Note:** As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.

**Assessment Prep**

Prepare students for assessment by reviewing the following Assessment Prep Presentation.

Provide the following guidance:

Ask the students to use what they know about the tasks completed to answer the provided assessment prep question.

- What is the question asking you?
- What do you know about the vocabulary or concept in the question?
- Is this question similar to any investigations or tasks we've completed?
- How can what you've done help you answer this question?
- Just view the assessment question: What is the question asking you?

Guide students to think about how their experience connects to the question.

Using the answer choices provided, ask the students the following:

- Identify a wrong answer: How do I know this answer is incorrect?
- Identify the right answer: How do we know this answer is correct?

Allow the students time to discuss in collaborative groups.

**TEACHER NOTE:** If students struggle with the question, review it the next day. Do not rush to the next question; instructional time is the only time they have to prepare for the end-of-year assessment.

**Labs / Investigations**

Mandatory Labs	Mystery Science	Gizmo/PhET
GaDOE Inspire Task: Energy Flow Tag	Eat or Be Eaten	Gizmo: Food Chain Gizmo: Forest Ecosystem



Additional- Resources/Tasks	
<b>Supplemental Labs</b>	Roles In Community Following the Energy Tag How does energy Travel Why do living things depend on each other? The Forest of Change Habitat Scenario
<b>Culminating Performance Task</b>	CER Task: What are the roles of producers, consumers, and decomposers within a community CER Task: How does energy flow within a food chain? CER Task: How does energy flow within a food web? CER Task: What are the effects of change in an ecosystem? CER Task: What changes can be expected in an ecosystem when animals become scarce, extinct, or over-abundant?
<b>STEM Activities</b>	