

Supports science, reading, writing, and vocabulary!

SCIENCE PASSAGES

6 ECOSYSTEMS ARTICLES

LET'S EXPLORE SCIENCE

Producers & Decomposers

1 Every food chain requires producers and decomposers. As a reminder, **producers** are part of the first level of the food chain. They generate their own food. But **decomposers** work at the final level of the food chain. They are essentially nature's garbage collectors. They consume the waste left behind from the other food chain levels.

2 Although producers and decomposers play different roles in nature's food chain, they do share some similarities. And they need each other to do their jobs effectively.

3 **Both producers and decomposers need energy, but they get their energy from different sources.** Both producers and decomposers need nutrients to get enough energy. Since producers make their own food through photosynthesis, they receive their energy from the sun.

4 But decomposers rely on dead life-forms or waste to get their nutrients and energy. They can't make their own food like producers can. Instead, they break down dead organisms like tiny garbage clean-up crews.



Fungi are efficient decomposers. The fly agaric is a mushroom and common decomposer in forest ecosystems.

5 **Producers need decomposers to grow and thrive.** Yes, producers need sunlight for energy. But they also need water and carbon dioxide in order for photosynthesis to take place. And without decomposers, they wouldn't get the carbon they need. That's because when decomposers feed on dead waste, they release carbon back into the environment. Plants then take this carbon and use it for photosynthesis!

6 **Decomposers can actually eat . . . producers!** Decomposers don't just feast upon dead animals. When ANY living thing dies, decomposers go to work. So, when a

READING ACTIVITIES • COMPREHENSION CHECKS

3

REASONS TO LOVE

THESE NONFICTION SCIENCE ARTICLES

CROSS-CURRICULAR INSTRUCTION

Teachers are always short on time, and unfortunately this often means that science and social studies can take a hit. These texts make it easy for you to teach key science content through a rich and engaging reading lesson. You'll tackle multiple subjects at once.

BUILDS BACKGROUND KNOWLEDGE

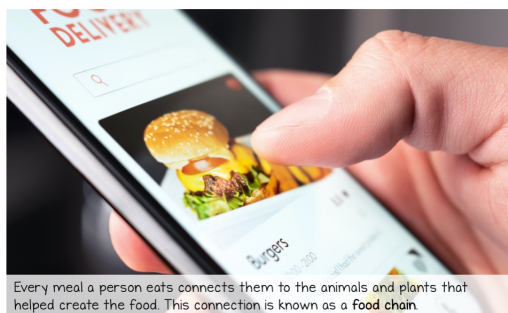
Building background knowledge in science and social studies is a key part of teaching reading. Each text in this set connects to the overarching topic of ecosystems. As students are reading, they will be able to connect what they learned in one passage to a previous text they read from this set.

HIGH INTERESTS TEXTS

Not only do these texts connect to key sciences topics and concepts, but they are also highly engaging and interesting to read. Your students will love learning about the topics included in this science set!

LET'S EXPLORE SCIENCE

Food Chains and Webs



Every meal a person eats connects them to the animals and plants that helped create the food. This connection is known as a **food chain**.

Humans, animals, and plants interact with each other in several ways. Some people have animals as pets. Others feed birds that fly around in their backyards. Some grow gardens or take care of houseplants. And many people go to zoos and aquariums.

But there is another way people, animals, and plants interact that is **WAY** more common than these examples. It's through the food humans eat each day!

Every meal a person eats connects them to the animals and plants that helped create the food. This connection is known as a **food chain**. Specifically, a **food chain** refers to how energy and nutrients flow between living things who eat each other.

For example, if you ate a hamburger for lunch, the food chain would look like this:

Grass → Cow → Human

The meat came from the cow. But the cow was able to grow and survive because it ate grass. Without the food chain starting with the grass, the burger wouldn't have reached your mouth! The arrow means "is eaten by" in the chain. Grass is eaten by the cow. The cow is eaten by the human.

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WHAT'S INCLUDED

LET'S EXPLORE SCIENCE

Food Chains and Webs

Every meal a person eats connects them to the animals and plants that helped create the food. This connection is known as a **food chain**.

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Reading Passages

Get six nonfiction science based articles. Each text is written in a different text structure and includes a variety of text features to support both reading and science standards.

COMPREHENSION CHECK

Name: _____ Date: _____

Directions: After you've finished reading *Food Chains and Webs*, answer the questions.

1. Choose the food chain that would most likely be completed by humans:
 A. grass → grasshopper → _____
 B. frog → _____ → hawk
 C. grass → cow → _____
 D. _____ → rabbit → fox

Explain how/why you picked your answer:

2. Read the sentence from "Food Chains and Webs."
Every meal a person eats connects them to _____.

The example above is a **fragment**. Which details best complete the sentence?
 A. the animals and plants that helped create the food.
 B. each other.
 C. the next meal they will eat.
 D. None of the above

Explain how/why you picked your answer:

3. Based on the information in the passage, what is the main difference between food chains and webs?
 A. Animals are apart of food chains, but not food webs.
 B. Humans cannot be apart of a food web, only a food chain.
 C. Food chain follows just one path of how a living thing gains energy and nutrients, while a food web shows multiple paths.
 D. A and B

Explain how/why you picked your answer:

4. What text structure did the author use to write the passage?
 A. Description
 B. Cause and Effect
 C. Sequence
 D. Persuasive

Explain how/why you picked your answer:

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Comprehension Check

Each passage also has a short four-question, multiple-choice comprehension check. You can use this to assess their understanding of the science topic or their reading comprehension.

READING RESPONSE

Name: _____ Date: _____

Directions: After you've finished reading *Food Chains and Webs*, answer the questions. Use everything you learned from the text to answer each question. Don't forget to use complete sentences and text evidence.

What is the main idea of the text?

Illustration/create a text feature using information gathered from the text.
 For example, you might create an illustration that shows the food chain of your last meal.

Write 2 more questions about ecosystems.

What is something that surprised you while reading?

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Reading Response

The reading response sheets following each passage will help your students build confidence when writing about a text. The questions cover a variety of reading skills.

COMPREHENSION CHECK

Name: **ANSWER KEY** Date: _____

Directions: After you've finished reading *Food Chains and Webs*, answer the questions.

1. Choose the food chain that would most likely be completed by humans:
 A. grass → grasshopper → _____
 B. frog → _____ → hawk
 C. grass → cow → _____
 D. _____ → rabbit → fox

Explain how/why you picked your answer:
 Responses will vary. Students should explain where they found the information in the text or how they used the text to come to their conclusion.

2. Read the sentence from "Food Chains and Webs."
Every meal a person eats connects them to _____.

The example above is a **fragment**. Which details best complete the sentence?
 A. the animals and plants that helped create the food.
 B. each other.
 C. the next meal they will eat.
 D. None of the above

Explain how/why you picked your answer:
 Responses will vary. Students should explain where they found the information in the text or how they used the text to come to their conclusion.

3. Based on the information in the passage, what is the main difference between food chains and webs?
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Explain how/why you picked your answer:
 Responses will vary. Students should explain where they found the information in the text or how they used the text to come to their conclusion.

4. What text structure did the author use to write the passage?
 A. Description
 B. Cause and Effect
 C. Sequence
 D. Persuasive

Explain how/why you picked your answer:
 Responses will vary. Students should explain where they found the information in the text or how they used the text to come to their conclusion.

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Answer Keys

We've included answer keys for all the student response pages. This will make it easy for you to check student work or to assign a grade.

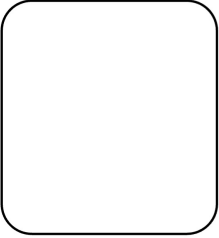



ADDITIONAL ACTIVITIES

BACKGROUND KNOWLEDGE

Name: _____ Date: _____

Directions: Below are two images of different ecosystems. Jot down what comes to mind when you look at each image - what plants and animals live there? Where can you find the ecosystem? How do humans interact with the ecosystem?

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Background Knowledge

The background knowledge worksheets will help your students activate their prior knowledge of the topic. We include a variety of background knowledge activities.

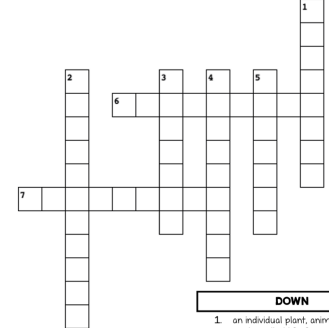
ENGAGE VOCABULARY

Name: _____ Date: _____

Directions: Fill in the crossword puzzle with the key vocabulary words. Not all words will be used.

Key Vocabulary

- Consumers
- Ecosystem
- Environment
- Food chain
- Food web
- Habitat
- Organism
- Producers
- Trophic level



ACROSS

- a leveled series of organisms dependent on the next as a source of food
- green plants, small shrubs, fruit, phytoplankton, and algae

DOWN

- an individual plant, animal, or single-celled life form
- surrounding in which a person, animal, or plant lives
- a system of interdependent food chains
- a biological community
- The natural home of an animal, plant, or other organism

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Vocabulary Activities

Vocabulary and word study are essential in helping our students improve their reading, writing, and speaking skills. We include several vocabulary activities you can use with this resource.


SCIENCE ACTIVITY

Name: _____ Date: _____

Directions: Think about an ecosystem (rainforest, wetland, freshwater, tundra, desert, etc.) What would happen if decomposers disappeared from the ecosystem? How would the ecosystem be impacted?

Questions I Have

Predications I Can Make



Research & Conclusions

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Science Activities

Whether it be performing steps of the scientific method, creating a picture glossary, or conducting an experiment, you'll get a handful of activities to support this science topic.

WRITING ABOUT SCIENCE

Name: _____ Date: _____

Directions: You are going to write a paragraph about ecosystems. Read the question and think about how you want to respond. Then, create a plan for your paragraph. Use the Checklist to write a well-developed paragraph.

Why are invasive species dangerous to an ecosystem?

- Step One: Chose 2-3 examples of invasive species.
- Step Two: Create a list of how the examples disrupt the ecosystem they are not native to.

Paragraph Checklist

- Topic Sentence:** Introduces the main idea in a clear, precise way
- Detail Sentences:** Clearly support the topic sentence, written in a variety of sentence structures, include transition words
- Concluding Sentence:** Summarizes or wraps up the paragraph in a precise way, using a concluding transition word

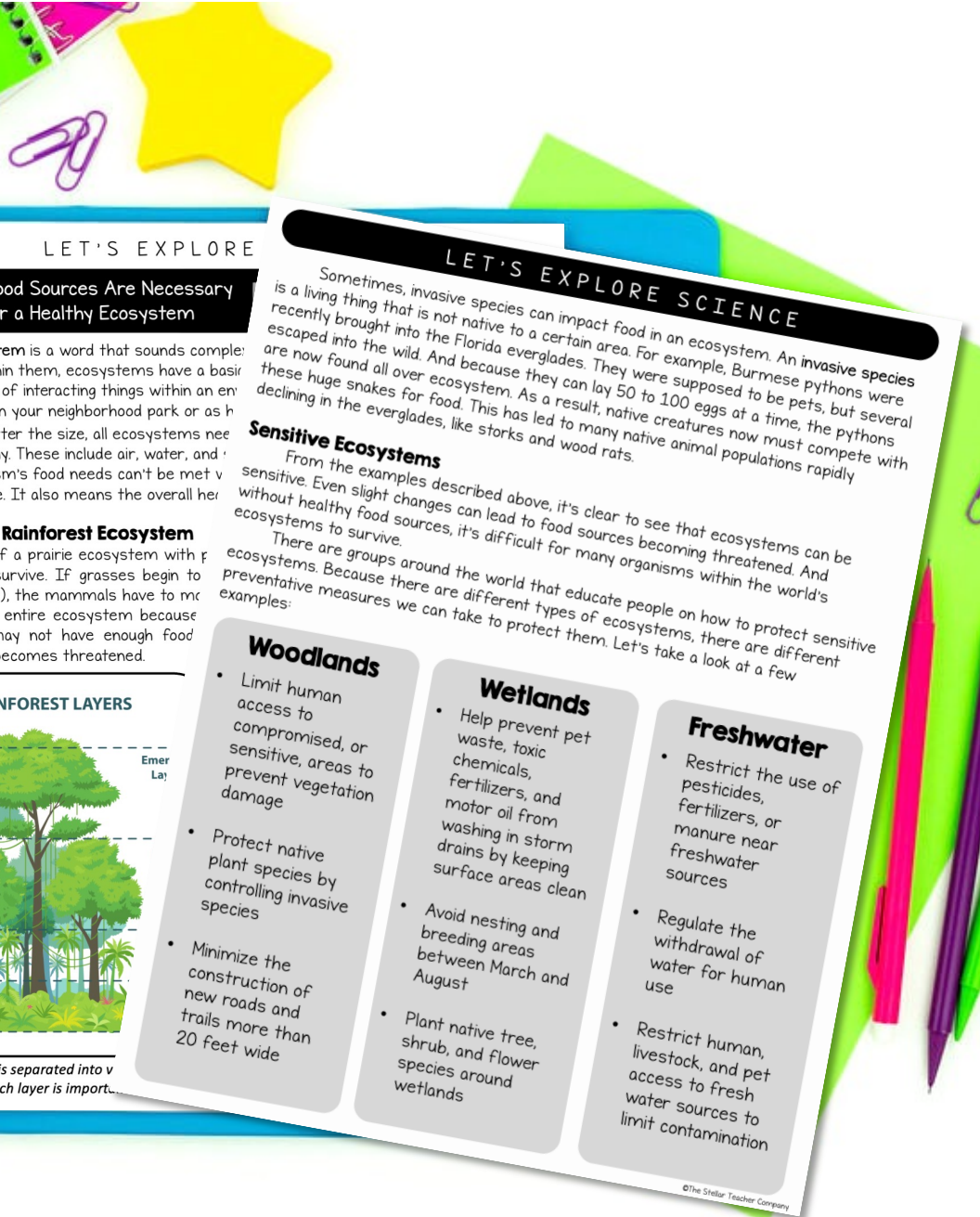
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Writing About Science

You will find two options for Writing About Science in this resource. The Paragraph Checklist will help your students write a well-developed paragraph about the topic with a topic sentence, details, and a conclusion.



HOW CAN I USE THIS RESOURCE?

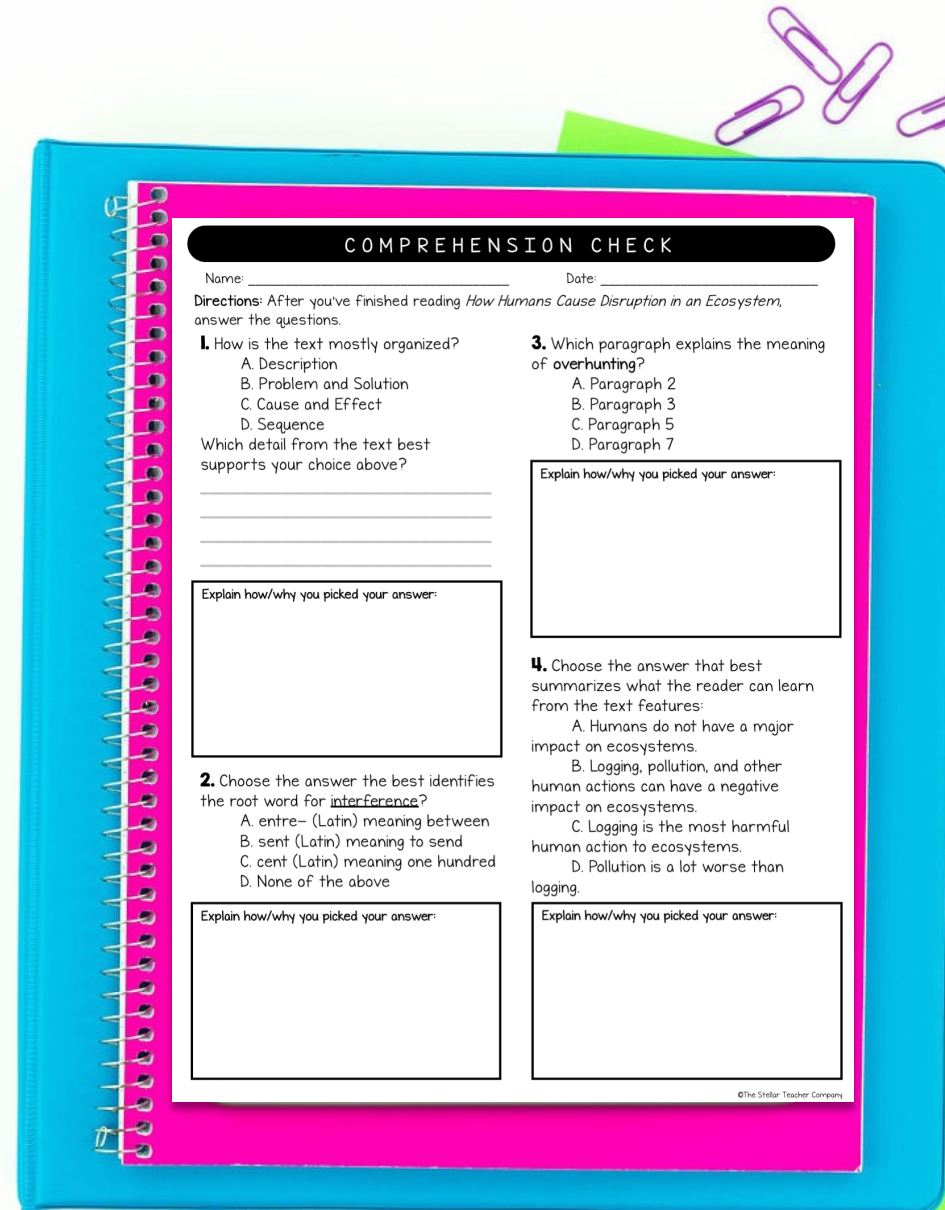


- Use these resources in your reading block, science block, or both!
- Don't forget to utilize the *digital version* of this resource to help your students master digital literacy skills.
- Use the entire resource or pick and choose which activities work best for you and your students.
- These resources are the perfect addition to your science or reading block as you prepare for standardized testing.



HOW CAN I USE THIS RESOURCE?

- You can use the passages and student response sheets as extra guided practice and do them as a whole group.
- You can use the passages and comprehension checks during small groups with students who need extra support.
- You can use the Writing About Science activities as a pre-assessment of a unit and then as a summative assessment to gauge learning.
- Partner students up for the Science Activity to add a layer of collaboration.






TAKE A CLOSER LOOK...

PASSAGE 1: Food Chains and Webs

LET'S EXPLORE SCIENCE

Food Chains and Webs



Every meal a person eats connects them to the animals and plants that helped create the food. This connection is known as a **food chain**.

Humans, animals, and plants interact with each other in several ways. Some people have animals as pets. Others feed birds that fly around in their backyards. Some grow gardens or take care of houseplants. And many people go to zoos and aquariums.

But there is another way people, animals, and plants interact that is WAY more common than these examples. It's through the food humans eat each day!

Every meal a person eats connects them to the animals and plants that helped create the food. This connection is known as a food chain. Specifically, a **food chain** refers to how energy and nutrients flow between living things who eat each other.

For example, if you ate a hamburger for lunch, the food chain would look like this:

Grass → Cow → Human

The meat came from the cow. But the cow was able to grow and survive because it ate grass. Without the food chain starting with the grass, the burger wouldn't have reached your mouth! The arrow means "is eaten by" in the chain. Grass is eaten by the cow. The cow is eaten by the human.

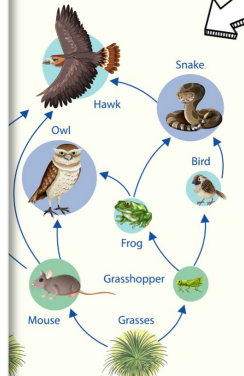
LET'S EXPLORE SCIENCE

able, based on how animals behave and survive in nature:

Grasshopper → Frog → Snake → Owl

specific path of how nutrients travel to each animal. Once again, it is, which is eaten by a grasshopper. A frog then eats the grasshopper. The snake eats the frog. Finally, the owl eats the snake.

part of many food chains. When they are put together, these food webs. While a food chain follows just one path of how a living thing gains energy and nutrients, a food web shows many paths and how they are related. For example, an owl doesn't ONLY eat snakes. They might eat mice or voles. Therefore, the energy doesn't travel to the owl in just one path. It takes many paths!



Think About It

Take a closer look at the food web to the left. A food web is a series of food chains within an ecosystem.

If a new homeowner took out the grasses surrounding their land to have install xeriscape, what might happen to the organisms in the food web?

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COMPREHENSION CHECK

Name: _____ Date: _____

Directions: After you've finished reading *Food Chains and Webs*, answer the questions.

- Choose the food chain that would most likely be completed by humans:
 - A. grass → grasshopper → _____
 - B. frog → _____ → hawk
 - C. grass → cow → _____
 - D. _____ → rabbit → fox

Explain how/why you picked your answer:
- Read the sentence from "Food Chains and Webs."

Every meal a person eats connects them to _____.

The example above is a **fragment**. Which details best complete the sentence?

 - A. the animals and plants that helped create the food.
 - B. each other.
 - C. the next meal they will eat.
 - D. None of the above

Explain how/why you picked your answer:
- Based on the information in the passage, what is the main difference between food chains and webs?
 - A. Animals are apart of food chains, but not food webs.
 - B. Humans cannot be apart of a food web, only a food chain.
 - C. Food chain follows just one path of how a living thing gains energy and nutrients, while a food web shows multiple paths.
 - D. A and B

Explain how/why you picked your answer:
- What text structure did the author use to write the passage?
 - A. Description
 - B. Cause and Effect
 - C. Sequence
 - D. Persuasive

Explain how/why you picked your answer:

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READING RESPONSE

Date: _____

After you've finished reading *Food Chains and Webs*, answer the questions. Use everything you know from the text to answer each question. Don't forget to use complete sentences and text evidence from the text!

What is the main idea of the text?

How does the author use text features to help you understand the text? You might create an illustration that shows the food chain of your last meal.

What are some questions about ecosystems?

What is something that surprised you while reading?

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Passage Details:

- **General Topic:** How food chains are connected
- **Text Structure:** Description
- **Text Features:** Photographs and Captions, Diagram, Headings
- **Reading Skills:** Ask and Answer Questions, Context Clues, Main Idea, Text Features, Text Structure





TAKE A CLOSER LOOK...

PASSAGE 2: Trophic Levels: How Energy Moves



LET'S EXPLORE SCIENCE

Trophic Levels

How Energy Moves in the Tundra

In every biome in the world, living things are part of a food chain. A food chain is the order in which living things eat one another in the wild. The different levels of a food chain are called trophic levels, most food chains have five. However, food chains can have more or less levels depending on the biome in which they live. As an example, let's think about the tundra.

- 1. The first trophic level** (also known as the primary level) starts with the sun. The sun is required for plants to create their own food through photosynthesis. These food-making plants are called **producers** and they make up level one. In the tundra, berries are a common producer, so we will use them in our example.
- 2. Level two** is made up of all the animals that eat producers. They are called **primary consumers** because they CONSUME living things from the first, primary, level. An example in the tundra is the **arctic hare**, who eats lots of berries.
- 3. Level three** is also made up of consumers - the ones that eat the primary consumers. Since they are the second level of consumers on the list, they are called **secondary consumers**. A common secondary consumer in the tundra is the arctic fox, who eats arctic hares for energy.
- 4. The fourth trophic level** is made up of more consumers called **tertiary consumers**. Tertiary means third in line. In the tundra example, a **grey wolf** is a tertiary consumer since it eats arctic foxes.
- 5. The last level** isn't made up of more consumers. Instead, it's made up of smaller organisms called **decomposers**. These organisms (like worms, bacteria, insects, and fungi) work as nature's garbage collectors. They consume waste from dead material left behind by the other trophic levels. Then they deposit nutrients from the waste back into the environment. That way, producers can replenish themselves once again! A common decomposer in the tundra is the fly agaric mushroom.

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LET'S EXPLORE SCIENCE

Trophic Levels: A Visual

Level four includes tertiary consumers like polar bears, arctic foxes, and grey wolves. They receive the least amount of energy since they are the fourth level of the food chain.

Level three is made of secondary consumers like Arctic fox, fish, birds, and prawn.

Primary consumers only receive about 10% of that energy from producers.

The second level is made up of primary consumers like Caribou, Arctic rabbit, insects like grasshoppers.

The primary level is powered by the sun and made up of producers like grasses, Arctic berries, and seaweed.

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COMPREHENSION CHECK

Name: _____ Date: _____

Directions: After you've finished reading *Trophic Levels: How Energy Moves in the Tundra*, answer the questions.

- According to the text, how many trophic levels does a food chain often have?
 - A. 3
 - B. 4
 - C. 5
 - D. 6

Explain how/why you picked your answer:
- Which animals would most likely be found in the **fourth** trophic level?
 - A. fish, birds, Arctic fox, seals
 - B. sunshine, grass, berries
 - C. caribou, Arctic hare, insects
 - D. Caribou, polar bears, wolves

Explain how/why you picked your answer:
- Choose the best summary for the paragraph describing **Trophic Level Five** in the passage:
 - A. The last level consists of decomposers like worms, bacteria, and fungi. Their job is to consume dead material and deposit nutrients back into the environment for producers.
 - B. A common decomposer in the tundra is the fly agaric mushroom. This mushroom is a decomposer.
 - C. Decomposers are a part of the fifth trophic level in the tundra. Producers can replenish because of them.
 - D. None of the above

Explain how/why you picked your answer:

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READING RESPONSE

Date: _____

You've finished reading about trophic levels in the tundra, answer the questions. Use evidence from the text to answer each question. Don't forget to use complete sentences.

1. Describe the structure of the text? What clues helped you identify the structure?

2. Write a 3-4 sentence summary of the text. Make sure you include the main idea and text evidence as supporting details.

3. **Producers in the first trophic level make their own food?** Now paraphrase the direct quote.

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Passage Details:

- **General Topic:** How energy moves in the tundra
- **Text Structure:** Sequence
- **Text Features:** Photographs and Captions, Diagram, Illustration
- **Reading Skills:** Context Clues, Direct Quote, Evaluate Details & Key Ideas, Inferences, Summarize, Text Features, Text Structure






TAKE A CLOSER LOOK...

PASSAGE 3: Producers & Decomposers

LET'S EXPLORE SCIENCE

Producers & Decomposers

1 Every food chain requires producers and decomposers. As a reminder, **producers** are part of the first level of the food chain. They **generate** their own food. But **decomposers** work at the final level of the food chain. They are essentially nature's garbage collectors. They consume the waste left behind from the other food chain levels.



Fungi are efficient decomposers. The fly agaric is a mushroom and common decomposer in forest ecosystems.

2 Although producers and decomposers play different roles in nature's food chain, they do share some similarities. And they need each other to do their jobs effectively.

3 Both producers and decomposers need energy, but they get their energy from different sources. Both producers and decomposers need nutrients to get enough energy. Since producers make their own food through photosynthesis, they receive their energy from the sun.

4 But decomposers rely on dead life-forms or waste to get their nutrients and energy. They can't make their own food like producers can. Instead, they break down dead organisms like tiny garbage clean-up crews.

One Without The Other?
Decomposers are like Earth's clean up crew. Do you think producers could survive without decomposers? Think about this scenario and discuss your thoughts with a partner.

5 Producers need decomposers to grow and thrive. Yes, producers need sunlight for energy. But they also need water and carbon dioxide in order for photosynthesis to take place. And without decomposers, they wouldn't get the carbon they need. That's because when decomposers feed on dead waste, they release carbon back into the environment. Plants then take this carbon and use it for photosynthesis!

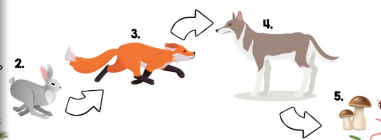
6 Decomposers can actually eat... producers! Decomposers don't just feast upon dead animals. When ANY living thing dies, decomposers go to work. So, when a plant dies, decomposers break it down and return carbon to the soil so other plants can grow strong.

LET'S EXPLORE SCIENCE

decomposers can be similar in size... and VERY different. In size, as do plants. Small producers may be the same size as...

...many insects and snails help with decomposition. Obviously, ...sly, possibly be seen by the human eye. The same can be said for mushrooms, fungus, and mold. But there is another category of ... MUCH smaller than all producers. Microscopic decomposers, like ... for any human to see. However, these 'invisible' creatures make ... of decomposers in the world!

...ducers and decomposers have different jobs in the food chain, ...er in many ways. Without these organisms, the food chain



2. Primary Consumers 3. Secondary Consumers 4. Tertiary Consumers 5. Decomposers

ers organisms that break down dead organic material

fulfilling a specific function, successful in producing an intended result

nt the surroundings in which a person, animal, or plant lives

s describes how energy and nutrients move through an ecosystem

ic very small, unable to see without the use of a microscope

an individual animal, plant, or single-celled life form

photosynthesizing organisms, green plants that use sunlight to make food

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COMPREHENSION CHECK

Name: _____ Date: _____

Directions: After you've finished reading *Producers & Decomposers*, answer the questions.

1. How is the text mostly organized?
A. Description
B. Cause and Effect
C. Compare and Contrast
D. Both B and C

Which sentence from the text best supports your choice above?

2. What does the word **generate** mean as it is used in paragraph 1?
A. to move
B. to preserve
C. to produce
D. to destroy

3. Which paragraph best explains why producers need decomposers to survive?
A. Paragraph 5
B. Paragraph 6
C. Paragraph 7
D. Paragraph 8

4. Which reason best supports why the author wrote this text?
A. To provide the reader with facts and details about the food chain.
B. To explain the impact producers and decomposers have on each other.
C. To tell the reader what a food web is.
D. To describe the problems producers cause decomposers.

Explain how/why you picked your answer:

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READING RESPONSE

Date: _____

After you've finished reading *Producers & Decomposers*, answer the questions. Use evidence from the text to answer each question. Don't forget to use complete sentences.

1. What did you learn from the text features included in *Producers & Decomposers*?

2. List at least three questions you have about the text. Think about question words **who, what, when, where, why, and how** to write your questions.

3. What is something new you learned while reading?

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Passage Details:

- **General Topic:** Relationship between producers and decomposers
- **Text Structure:** Compare & Contrast
- **Text Features:** Photographs and Captions, Diagram, Glossary
- **Reading Skills:** Ask and Answer Questions, Context Clues, Evaluate Details & Key Ideas, Text Evidence, Text Structure





TAKE A CLOSER LOOK...

PASSAGE 4: Food Sources & Ecosystems

LET'S EXPLORE SCIENCE

Why Food Sources Are Necessary for a Healthy Ecosystem **Food Sources**

Ecosystem is a word that sounds complex. While it's true that a lot of activity happens within them, ecosystems have a basic definition. **Ecosystems** are communities of interacting things within an environment. Ecosystems can be as small as the pond in your neighborhood park or as huge as the world's oceans.

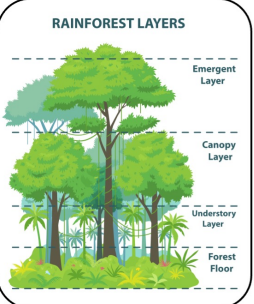
No matter the size, all ecosystems need certain elements to keep its living things healthy. These include air, water, and shelter. But one of the most vital is food. If an organism's food needs can't be met within an ecosystem, the organism cannot easily survive. It also means the overall health of the ecosystem declines.

A Healthy Rainforest Ecosystem

Think of a prairie ecosystem with plenty of grazing mammals that need lots of grasses to survive. If grasses begin to disappear (from things like fires or human development), the mammals have to move somewhere else to have enough food. This impacts the entire ecosystem because the larger animals that feed on the grazing mammals may not have enough food either. Therefore, the health of the entire ecosystem becomes threatened.

Understories are ecosystems at the bottom of the rainforest. They are dark and humid, covered by the canopy of trees above. Many butterflies and insects feed on the flowers and plants that grow upon the trees in this moist environment. These insects provide food for other understory animals like monkeys, lizards, and bats. But when thousands of trees are cut down for farmland and industry, the butterflies and insects can no longer feed off of the understory plants.

As their food source decreases, so does the food for the monkeys, lizards, and bats. This means they have to move to a more populated area of the rainforest, where they will have to fight for resources with other creatures already living there.



Wetlands

- Help prevent pet waste, toxic chemicals, fertilizers, and motor oil from washing in storm drains by keeping surface areas clean
- Avoid nesting and breeding areas between March and August
- Plant native tree, shrub, and flower species around wetlands

Freshwater

- Restrict the use of pesticides, fertilizers, or manure near freshwater sources
- Regulate the withdrawal of water for human use
- Restrict human, livestock, and pet access to fresh water sources to limit contamination

The rainforest is separated into various layers. They all act as ecosystems for various bird, animals, and insects. Each layer is important because it provides food and shelter for many living things.

COMPREHENSION CHECK

Name: _____ Date: _____

Directions: After you've finished reading *Why Food Sources Are Necessary for a Healthy Ecosystem*, answer the questions.

1. Choose the answer that best explains why understories are important to a rainforest ecosystem:

- Understories provide water, shelter, and food for many animals.
- Understories are home to invasive species.
- Understories are home to the most species in a rainforest.
- Understories are the most important part of a rainforest.

Explain how/why you picked your answer:

2. Based on the information in the text feature (diagram) which answer is most likely:

- The forest floor is the top layer of the rainforest ecosystem.
- The emergent layer and understory are side by side.
- The understory is below the canopy layer.
- None of the above

Explain how/why you picked your answer:

3. Which answer explains how humans can protect freshwater ecosystems?

- Avoid building new roads more than 20 feet wide.
- Avoid nesting and breeding areas between March and August.
- Control the growth of invasive species.
- Regulate the withdrawal of water.

Explain how/why you picked your answer:

4. Why did the author write the passage?

- To inform
- To entertain
- To persuade
- To teach a lesson

Explain how/why you picked your answer:

READING RESPONSE

Date: _____

After you've finished reading about food sources in a healthy ecosystem, answer the questions below. Write the thing you learned from the text to answer each question. Don't forget to use text evidence.

Write an idea of the text and then 2-3 supporting details.

Write a text feature using information gathered from the text. Create an infographic that visually shows the impact humans on an ecosystem.

Food vital to ecosystem?

Now paraphrase the direct quote.

Passage Details:

- **General Topic:** Why food sources are necessary for a healthy ecosystem
- **Text Structure:** Cause and Effect
- **Text Features:** Illustration, Diagram, Infographics
- **Reading Skills:** Evaluate Details & Key Ideas, Direct Quote, Summarize, Text Evidence, Text Features, Text Structure





TAKE A CLOSER LOOK...


PASSAGE 5: How Humans Cause Disruption

LET'S EXPLORE SCIENCE

Human Impact How Humans Cause Disruption in an Ecosystem

Ecosystems are communities of interacting things within an environment. All of these things need a source of food to survive. When there are enough food sources for all the organisms, the ecosystem can thrive and stay in balance.

What Happen If There Is Interference?
Often, human efforts can cause habitat destruction. Habitat destruction is when people disturb too much of an ecosystem for their own uses. One of the main impacts of habitat destruction is the disorder of an ecosystem's food sources. This means one or more species within the ecosystem must struggle for food and therefore survival.



Logging
The act of removing large trees from an ecosystem is known as logging. Logging can be harmful. Trees provide food and shelter for many animals. Over-logging degrades ecological conditions food webs need to survive.

Humans take over ecosystems for many reasons. Two common reasons humans disrupt ecosystems are **overhunting** and **to gain resources**. But there are many more human activities can cause major problems to ecosystem food sources and throw it totally out of balance.

To gain resources – Humans often take over forest ecosystems to gain resources for their own uses. **Logging** is a huge industry in which people cut down trees to sell as timber (to be used as a building material) or wood pulp (to make things like paper, tissues, and cardboard). But when the trees are cut down, the ecosystem suffers. The animals that live in the trees, like insects and birds, can perish or have to re-locate to find another habitat.


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LET'S EXPLORE SCIENCE

WAYS HUMANS DISRUPT ECOSYSTEMS

- overpopulation
- pollution
- burning fossil fuels
- deforestation
- invasive species

animals that feed on no longer have enough... them to shrink in herbivores (plant-eater) once trees are ecosystem. another human activity **overhunting**, or hunting extreme decline of farm food sources in



Consider a lake ecosystem with plenty of bass. If too many people go fishing, or a few people take too many bass, there will be a gap in the ecosystem's natural balance. Those who prey on bass will have to compete for the few fish that are left as a source of food. Plus, there will likely be too many of the species that bass normally eat. This throws the ecosystem out of balance and will probably result in few to no bass in the future.

above, these are just a few of the human activities that can result in disruption in ecosystems. Pollution, invasive species, and clearing of farmland and roads are others. Not always do people stop and think about how their actions might affect the natural balance of food sources within an ecosystem.

LINK IT OUT

The text helps us understand some of the ways humans can cause harm to ecosystems. Can you think of **human actions** that could **protect ecosystems**?

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READING RESPONSE

COMPREHENSION CHECK

Name: _____ Date: _____

Directions: After you've finished reading *How Humans Cause Disruption in an Ecosystem*, answer the questions.

1. How is the text mostly organized?
A. Description
B. Problem and Solution
C. Cause and Effect
D. Sequence

Which detail from the text best supports your choice above?

Explain how/why you picked your answer:

2. Choose the answer that best identifies the root word for **interference**?
A. entre- (Latin) meaning between
B. sent (Latin) meaning to send
C. cent (Latin) meaning one hundred
D. None of the above

Explain how/why you picked your answer:

3. Which paragraph explains the meaning of **overhunting**?
A. Paragraph 2
B. Paragraph 3
C. Paragraph 5
D. Paragraph 7

Explain how/why you picked your answer:

4. Choose the answer that best summarizes what the reader can learn from the text features:
A. Humans do not have a major impact on ecosystems.
B. Logging, pollution, and other human actions can have a negative impact on ecosystems.
C. Logging is the most harmful human action to ecosystems.
D. Pollution is a lot worse than logging.

Explain how/why you picked your answer:

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READING RESPONSE

Date: _____

After you've finished reading *How Humans Cause Disruption in an Ecosystem*, answer the questions. Write what you think was the most important thing you learned from the text to answer each question. Don't forget to use text evidence.

Write what you think was the most important thing you learned from the passage *How Humans Cause Disruption in an Ecosystem*.

Write a list of questions you have about the text. Think about question words **who, what, when, where, why, and how** to write your questions.

Write on the text to explain **consequences** means.

What is **something new** you learned while reading?

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Passage Details:

- **General Topic:** Human impact on ecosystems
- **Text Structure:** Cause & Effect
- **Text Features:** Photographs and Captions, Infographic, Bold Words
- **Reading Skills:** Ask and Answer Questions, Context Clues, Evaluate Details & Key Ideas, Summarize, Text Structure





TAKE A CLOSER LOOK...

PASSAGE 6: Invasive Species: Sneaky Disruptors

LET'S EXPLORE SCIENCE

Invasive Species

Sneaky Ecosystem Disruptors

Have you ever heard of sea walnuts? They aren't snacks. They're stingless jellyfish native to the east coasts of North and South America. They often wash up on beaches and are completely harmless to humans. While they are common in the Americas, they are unheard of in Europe, Asia, and the Middle East. Well, they were until 1982. That's when sea walnuts were found in the Black and Caspian Seas...and created some big problems.


How did sea walnuts get halfway around the world? And how did they create such a mess? They simply decided to go for a ride.

Going On a Trip
In 1982, a few sea walnuts attached themselves to the bottom of a huge ship traveling to Eastern Europe. Once the ship docked, the sea walnuts made themselves at home in the Black Sea and quickly multiplied. They soon made their way to the Caspian as well.

In a short period of time, sea walnuts were overrunning the waters. As a result, all commercial fishing within the seas completely stopped. Why? Because the sea walnuts ate all of the plankton that the native fish needed for food. Without enough plankton, the fish could not survive or multiply. There simple weren't any native fish to catch anymore.

It's easy to see how the sea walnuts impacted the ecosystem in the Black and Caspian Seas.

But these kinds of disruptions happen all the time in other ecosystems around the globe.



The sea walnut gets its name from its shape.

Disruptions Around the Globe
Sea walnuts are just one example of an invasive species. Invasive species are living things that are not native to a certain area. They most often travel and invade different ecosystems because of human activities.

While most happen by accident, some invasive species are brought to an area on purpose. For example, cane toads (from Central America) and starling birds (from Europe) were both brought to Australia to control crop-killing pests.

But the cane toads produced a deadly toxin that killed predators outside of Central America, leading to a major loss of Australia's reptiles. Also, the starlings formed huge flocks that swarmed upon farms, damaging crops and fruits. They also out-fought native birds for food and space in trees, leaving many without a stable habitat.

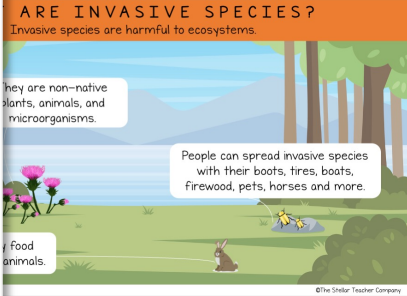
LET'S EXPLORE SCIENCE

Invasive Species
The water hyacinth is a gorgeous floating plant that first arrived in South America in the late 1800s. It was simply to be used as a natural river. But the plant grew quickly and created thick blankets of plants and organisms under the water died from a lack of sunlight. The water hyacinth crowded out native plants, decreasing the natural ecosystem. Even today the plant infests around 200 public bodies of water.

There are currently three invasive plants that are a main concern: Purple Loosestrife, and Yellow Starthistle. At first glance all three look pretty, but they are the ultimate ecosystem disruptors. Purple Loosestrife is native to Europe. It was introduced to North America in the 1800s as a serious problem in pastures and rangeland in the western United States. Purple Loosestrife is responsible for releasing a chemical that prevents water hyacinth from growing and decreases food sources for wildlife and livestock. Purple Loosestrife is harmful to wildlife and agriculture in Colorado. Like Meadow Knopweed, Purple Loosestrife also eliminates food sources for wildlife. It was accidentally introduced to North America in the 1800s. Yellow Starthistle originated from Northern Europe. It has bright yellow flowers. It is fatally poisonous to horses, so it is an invasive plant species.

Yellow Starthistle is a flowering plant, invasive species can impact any ecosystem. Purple Loosestrife can be a big ecosystem disruptor.

ARE INVASIVE SPECIES?
Invasive species are harmful to ecosystems.



They are non-native plants, animals, and microorganisms.

People can spread invasive species with their boots, tires, boats, firewood, pets, horses and more.

They eat native animals.

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COMPREHENSION CHECK

Name: _____ Date: _____

Directions: After you've finished reading *Invasive Species: Sneaky Ecosystem Disruptors*, answer the questions.

1. Which answer best explains how sea walnuts made their way to be in Eastern Europe?
A. They were attached to a ship traveling from the Americas to the Black and Caspian Seas.
B. They travelled on their own from the Americas to the Caspian Sea.
C. Somebody brought a sea walnut with them from the Americas to Eastern Europe.
D. None of the above

Explain how/why you picked your answer:

2. According to the illustration in the text, how can people spread invasive species?
A. On their boots
B. With their tires
C. On their pets fur
D. All of the above

Explain how/why you picked your answer:

3. What invasive plant species is extremely dangerous to horses?
A. sea walnut
B. water hyacinth
C. Meadow Knopweed
D. Yellow Starthistle

Explain how/why you picked your answer:

4. Choose the best summary for the section on the **Disruptions Around the Globe**:
A. Sea walnuts impacted the ecosystem in the Black and Caspian Seas.
B. Invasive species are not native to a specific area. Sometimes they are introduced on purpose.
C. Plants such as the Yellow Starthistle, Meadow Knopweed, and Purple Loosestrife are invasive in Colorado.
D. Sea walnuts, water hyacinth, and various types of animals can be invasive.

Explain how/why you picked your answer:

READING RESPONSE

Date: _____

After you've finished reading *Invasive Species: Sneaky Ecosystem Disruptors*, answer the questions. Write your answers in the space provided. Use what you learned from the text to answer each question. Don't forget to use text evidence.

1. What is the main idea of the text? Write a 3-4 sentence summary of the text. Make sure you include the main idea and text evidence as supporting details.

Structure? What clues helped you identify the structure?

2. Sea walnuts completely impacted commercial fishing? Now paraphrase the direct quote to answer the question.

Explain how/why you picked your answer:

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Passage Details:

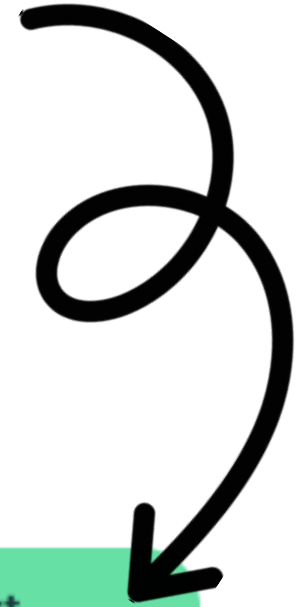
- **General Topic:** How invasive species disrupt an ecosystem
- **Text Structure:** Description
- **Text Features:** Photograph and Caption, Infographic, Bold Words
- **Reading Skills:** Ask and Answer Questions, Context Clues, Evaluate Details & Key Ideas, Summarize, Text Structure





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6 ECOSYSTEMS ARTICLES

LET'S EXPLORE SCIENCE

Producers & Decomposers

1 Every food chain requires producers and decomposers. As a reminder, producers are part of the first level of the food chain. They generate their own food. But decomposers work at the final level of the food chain. They are essentially nature's garbage collectors. They consume the waste left behind from the other food chain levels.

Fungi are efficient decomposers. The fly agaric is a mushroom and common decomposer in forest ecosystems.

2 Although producers and decomposers play different roles in nature's food chain, they do share some similarities. And they need each other to do their jobs effectively.

3 Both producers and decomposers need energy, but they get their energy from different sources. Both producers and decomposers need nutrients to get enough energy. Since producers make their own food through photosynthesis, they receive their energy from the sun.

4 But decomposers rely on dead life-forms or waste to get their nutrients and energy. They can't make their own food like producers can. Instead, they break down dead organisms like tiny garbage clean-up crews.

5 Producers need decomposers to grow and thrive. Yes, producers need sunlight for energy. But they also need water and carbon dioxide in order for photosynthesis to take place. And without decomposers, they wouldn't get the carbon they need. That's because when decomposers feed on dead waste, they release carbon back into the environment. Plants then take this carbon and use it for photosynthesis!

6 Decomposers can actually eat... producer! Decomposers don't just feast upon dead animals. When ANY living thing dies, decomposers go to work. So, when a

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