VIRGINIA STANDARDS OF LEARNING

GRADE 8
INTEGRATED READING AND WRITING

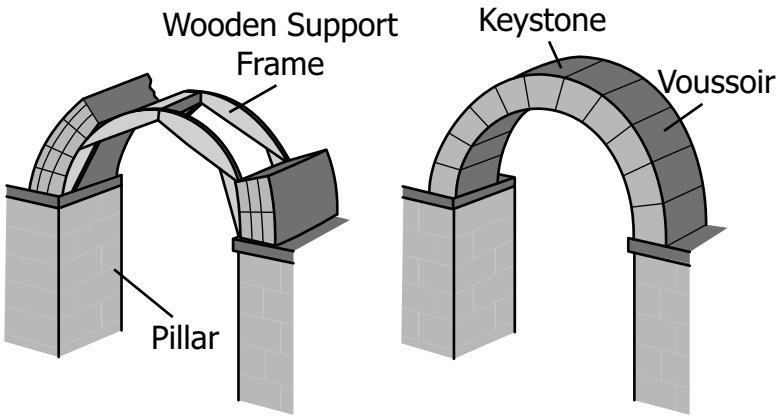
2024 English Standards of Learning

Practice Item Set

Printed in the United States of America.

Directions: Read the passages and answer the questions that follow.

Keystones



Arch Construction in Progress **Completed Arch**

1 The arch is one of the most important structural developments in the history of architecture. An arch connects two sides of an opening with a graceful curve on top. This curve can handle a great amount of weight, called “load,” without breaking.

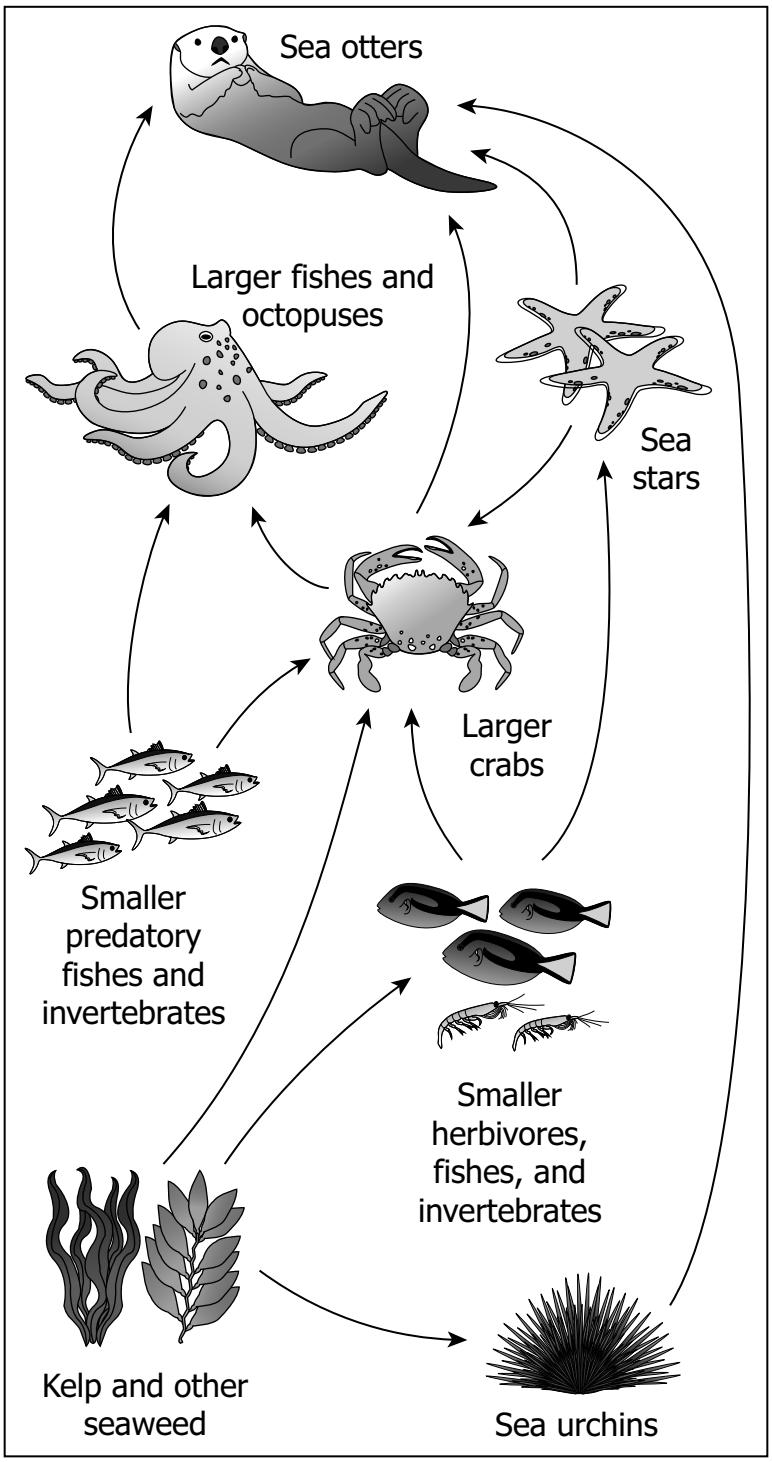
2 Building an arch takes several steps. First, a wooden frame is made in the proper shape to support the construction of the arch. The frame is placed on the two pillars or sides of the opening. Then, the wedged stones, or voussoirs (voo-SWARS), are stacked tightly along the frame. The voussoir placed at the very top of the arch is the keystone. Once the keystone is in position, the entire arch locks into place. Even when the wooden frame is removed, the arch remains strong. Stone arches that have lasted for centuries would collapse if the keystone were removed. The keystone is the one piece that is critical to the success of the whole structure.

The Key to a Healthy Habitat

1 In an experiment, scientist Robert Paine removed all the *Pisaster ochraceus* (oh-CRAY-shus) sea stars from some tidal pools along the coast in Washington State. Then he studied what happened to the ecosystem in the tidal pools. Without the sea stars preying on the mussels in the tidal pools, the mussels increased in number. Mussels then crowded out other species and destroyed the diversity in the pools. Paine concluded that sometimes one species can have a greater influence on its environment than other species do. He called these special organisms "keystone species."

Keystone Species

2 Each ecosystem has a series of interconnected food chains called a food web. A food web often starts with plants, which get their energy from the sun. Some animals eat the plants, and various predators eat the animals that eat the plants. These relationships work to keep the ecosystem in balance. While keystone species are often predators, they can also be those organisms that modify their environment, such as beavers, which build dams. Additional keystone species might function in a mutual relationship, one that benefits themselves as well as other species. This category of keystone species includes bees, which pollinate flowers and drink flower nectar.



An ocean food web

The Role of Keystone Species

3 Predators help control organisms that might otherwise take over an area. The *Pisaster ochraceus* sea star is one example of a predator keystone species. Another example is the sea otter. In the northern Pacific Ocean, kelp forests

flourish along the ocean floor. Many animals live in and eat from these forests. Large herds of spiky sea urchins have been known to destroy whole kelp forests, leaving an underwater wasteland. However, sea otters eat sea urchins. This helps control the number of sea urchins and protect the kelp forest. With the otter in place as a keystone predator, the environment stays in balance.

A sea otter eats a sea urchin.

4 Some animals are keystone species because of how they modify their habitats in ways that benefit other species in the ecosystem they share. Consider beavers. The dams they build help create wetlands with ponds and marshes that support a rich variety of animals and plants. Prairie dogs also engineer their environment. They live underground in large colonies with tunnels. Their tunneling improves the soil for vegetation, and their burrows provide shelter for other animals.

5 Similarly, organisms that work to mutually support one another can be keystones too. This occurs when two or more species rely on their relationship to survive. For example, almost 90 percent of the world's flowering plants rely on bees to support their reproduction. Flowering plants provide the food bees need: nectar. As bees take nectar from flowers, they carry pollen to other flowers to make seed production possible. Bees and flowering plants are keystone species because their absences would affect many other species that rely on the flowering plants and the bees' support.

How Keystone Species Create Balance

6 A certain animal can be a keystone species in one area but not in another. For example, the sea stars are the keystone species in the tidal pools of Robert Paine's experiment but do not have keystone status in other areas. When scientists want to protect a habitat, they can have the most influence by

identifying the keystone species. Lose a keystone species, and big changes follow.

7 Yellowstone National Park provides an excellent example of how working with a keystone species can protect an entire ecosystem. After Yellowstone was first established, gray wolves were slowly eliminated from the park region to protect the bison and elk herds. However, removal of the wolves led to a huge increase in the populations of animals that survive by grazing on vegetation. The animals ate so much of the plant life that many plant species were reduced in number. Grazing also affected the number of tree seedlings that grew, and soil erosion increased.

8 Wolves were brought back into Yellowstone in an effort to return the land to its previous state. As hoped, the wolves controlled the elk numbers, which protected other species. Plants regrew, birds and small mammals returned, trees began to mature. The ecosystem became healthy again after the return of the wolves.

9 In architecture, the term “keystone” is used to describe the stone placed at the top of an arch. The keystone supports the arch, just as a keystone species supports healthy ecosystems. Understandings of keystone species continue to inform decisions conservationists make about the environment today.

1 Read this sentence from paragraph 1 of "Keystones."

> **The arch is one of the most important structural developments in the history of architecture.**

By including this sentence, the author is best able to —

A provide qualifications that enhance an argument
B establish a viewpoint that will be supported with facts
C state factual information that strengthens the impact of the article
D express an opinion that adds interest to the article

2 Read this sentence from paragraph 2 of "Keystones."

> **Even when the wooden frame is removed, the arch remains strong.**

The author includes this sentence to support the point that the —

F arch design relies on one piece that holds it together
G stones of an arch are placed along a curve to connect the pillars
H weight of an arch is supported by the wood at the top
J construction of an arch requires following multiple steps

3 Read this sentence from paragraph 3 of "The Key to a Healthy Habitat."

> **Large herds of spiky sea urchins have been known to destroy whole kelp forests, leaving an underwater wasteland.**

The author's word choice in this sentence is used to —

A imply that water becomes scarce
B show that an area was completely devastated
C reveal the quantity of sea urchins needed
D suggest delayed growth of kelp

4 Which detail from paragraph 4 of "The Key to a Healthy Habitat" reveals the author's viewpoint about keystone species that modify their habitats?

F benefit other species in the ecosystem they share
G create wetlands with ponds and marshes
H live underground in large colonies
J provide shelter for other animals

5 Which detail should be included in a summary of the "How Keystone Species Create Balance" section of "The Key to a Healthy Habitat"?

A Yellowstone was made into a national park before wolves were removed.

B Wolves prey on elk, and elk eat grass at Yellowstone.

C Bison, birds, and small mammals are all part of the Yellowstone ecosystem.

D Yellowstone is an ecosystem that experienced damage and was restored.

Read the information and respond to the prompt.

The article "Keystones" explains that in architecture, a keystone is "the one piece that is critical to the success of the whole structure." The article "The Key to a Healthy Habitat" further explains a keystone through a discussion of keystone species, such as the sea otter.

How can a person be like a keystone in a family, career, or community? Write a response that explains how someone performing a specific job or role is important to the success of all. To support your ideas, use information from the articles, your own examples, or both.

CHECKLIST FOR WRITERS

_____ I planned my response before writing it.

_____ I revised my response to be sure that
- _____ the introduction to my response captures the reader's attention;
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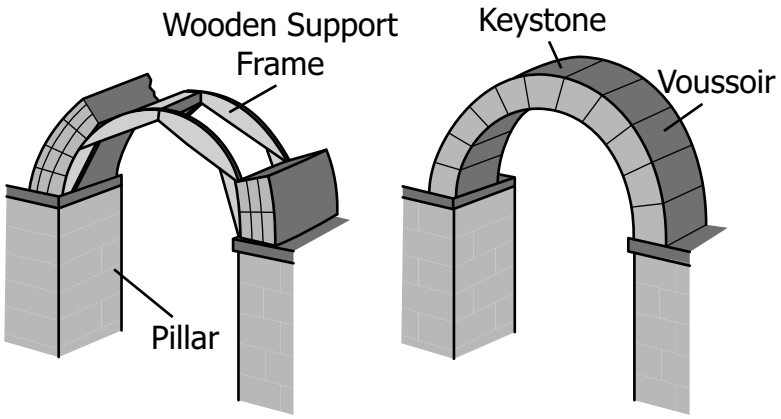
Directions: Read the passages and answer the questions that follow.

Keystones



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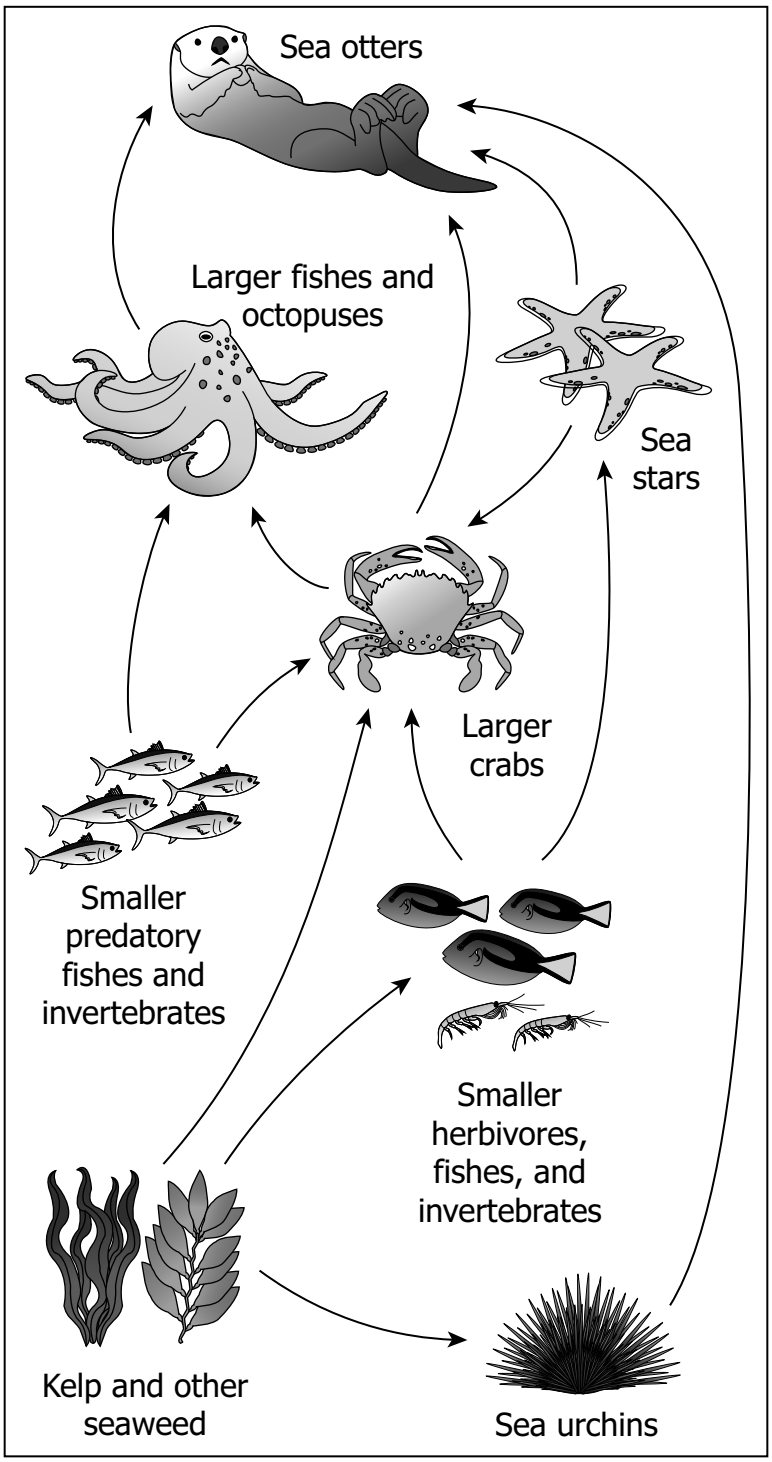

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1 Which sentence from "Keystones" is the best example of the author's main point?

A An arch connects two sides of an opening with a graceful curve on top.

B Building an arch takes several steps.

C The voussoir placed at the very top of the arch is the keystone.

D Stone arches that have lasted for centuries would collapse if the keystone were removed.

2 The main point developed in paragraphs 1–3 of "The Key to a Healthy Habitat" is that a keystone species differs from other species because it —

F belongs in an ecosystem's food web

G consumes other organisms

H manages an ecosystem's health

J increases rapidly in population size

3 Read this sentence from paragraph 6 of "The Key to a Healthy Habitat."

> **Lose a keystone species, and big changes follow.**

Which detail from "The Key to a Healthy Habitat" does the author include to show a result of losing a keystone species?

A Mussels then crowded out other species and destroyed the diversity in the pools

B Some animals are keystone species because of how they modify their habitats

C This occurs when two or more species rely on their relationship to survive

D A certain animal can be a keystone species in one area but not in another

4 "Keystones" explains what happens to an arch without a keystone. Which sentence from "The Key to a Healthy Habitat" does its author include to convey a similar message?

F Paine concluded that sometimes one species can have a greater influence on its environment than other species do.

G Some animals eat the plants, and various predators eat the animals that eat the plants.

H However, removal of the wolves led to a huge increase in the populations of animals that survive by grazing on vegetation.

J Plants regrew, birds and small mammals returned, trees began to mature.

Go to the next page and continue working.

Read the information and respond to the prompt.

Keystone species create a balance within an ecosystem that is important for the health of animal habitats. When people develop an area of land for new purposes, animal habitats can be disrupted. However, hospitals, schools, houses, agriculture, and other types of land development are all important for the health of a community.

When is it important to protect natural areas and animal habitats, or when is it important to use them for another purpose? Explain and support your position with information from the articles, your own examples, or both.

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Grade 8 Integrated Reading and Writing
Practice Item Set Spring 2025
Answer Key

Sequence Number	Correct Answer	Reporting Category	Reporting Category Description
1	B	002	Demonstrate comprehension of informational texts and use vocabulary development and word analysis strategies
2	F	002	Demonstrate comprehension of informational texts and use vocabulary development and word analysis strategies
3	B	002	Demonstrate comprehension of informational texts and use vocabulary development and word analysis strategies
4	F	002	Demonstrate comprehension of informational texts and use vocabulary development and word analysis strategies
5	D	002	Demonstrate comprehension of informational texts and use vocabulary development and word analysis strategies
1	D	002	Demonstrate comprehension of informational texts and use vocabulary development and word analysis strategies
2	H	002	Demonstrate comprehension of informational texts and use vocabulary development and word analysis strategies
3	A	002	Demonstrate comprehension of informational texts and use vocabulary development and word analysis strategies
4	H	002	Demonstrate comprehension of informational texts and use vocabulary development and word analysis strategies

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