

VIRGINIA STANDARDS OF LEARNING

GRADE 5

INTEGRATED READING AND WRITING

2024 English Standards of Learning

Practice Item Set

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Printed in the United States of America.

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

Cleaner Soil, One Plant at a Time

- 1 Imagine a beautiful day in a public park. A stream flows between large willow trees. Walking paths curve across green meadows. In one area, people play in a small water park. In another, children are visiting a petting zoo.
- 2 With all this park's beauty, no one could tell it did not always look like this. Once, it was a place where no one could visit. The soil was full of harmful chemicals and pollution. Now, thanks to the work of some scientists, the area has become safe to visit again. What did the scientists do? They planted carefully chosen trees and other plants. Then those trees and plants did the rest of the work.

A Soil Pollution Solution

- 3 The process of using living green plants to clean soil is called phytoremediation (fi-toe-ree-mee-dee-A-shun). *Phyto* is a Greek word that means "plant." The root word for *remediation* means "a process of healing." So, phytoremediation is the process of using plants to heal the earth. Most often this process is used in places where production from businesses and manufacturers has affected the soil. It is used to clean other types of pollution too.
- 4 For example, harmful heavy metals such as lead and mercury are sometimes left behind by manufacturers or businesses. The metals keep most plants from growing. However, a few plants can thrive in the polluted soil while also making the soil cleaner.
- 5 The plants and trees that can be used to clean soils are unique in one important way. They can absorb pollution or heavy metals into their roots, leaves, or stems and still survive. Some plants change the chemicals into something that is safer. Others hold on to the chemicals. Farmers or scientists can remove and destroy the parts of the plants that hold the chemicals.

Soil Superheroes in Action

- 6 Farmers have used different kinds of phytoremediation for years. One common phytoremediation plant farmers use is the sunflower. Sunflowers are very good at absorbing heavy metals such as lead. Once the soil is clean, the farmers remove the sunflowers. Then they can plant other crops they want to grow.



A field of sunflowers

- 7 The military also uses plants to clean up the soil. For example, the United States Navy is planting poplar trees in some areas. The poplars' roots absorb chemicals from the polluted soil and turn them into harmless substances. Also, the army plants cattails in wetlands. The cattails can clean livestock waste, sewage, or heavy metals from the water.
- 8 In cities and towns, smog and pollution can also make the soil unhealthy. Cities can remove chemicals from the soil by planting poplar and willow trees. Corn, date palms, and mustard grasses are also powerful soil cleaners.
- 9 Scientists are learning more about the processes plants use to clean the soil. They are finding which plants work best in different places. Thanks to these special plants and trees, soil can be renewed and used for years to come.

1 In the “A Soil Pollution Solution” section, the author uses italics for “*phyto*” and “*remediation*” to show —

- A** that word parts will be explained
- B** that the word is difficult to understand
- C** how the word will be pronounced
- D** why the word has a different meaning

2 Which idea is best supported by the details the author includes in paragraph 5?

- F** Some plants are not harmed by absorbing chemicals.
- G** Dangerous chemicals cause farmers to grow fewer crops.
- H** Plants are not useful after being exposed to chemicals.
- J** Harmful chemicals cause farmers to destroy most crops.

3 Which sentence from paragraphs 8 and 9 shows the author’s opinion about the importance of phytoremediation?

- A** Cities can remove chemicals from the soil by planting poplar and willow trees.
- B** Corn, date palms, and mustard grasses are also powerful soil cleaners.
- C** Scientists are learning more about the processes plants use to clean the soil.
- D** Thanks to these special plants and trees, soil can be renewed and used for years to come.

4 Which detail does NOT support the author's suggestion that many groups are working to create cleaner environments?

- F** City officials use several types of trees to remove chemicals from the soil.
- G** The military uses plants to help with polluted wetlands.
- H** Scientists destroy plant parts that hold on to heavy chemicals.
- J** Manufacturers sometimes leave pollution on land or in water.

5 To show one benefit of phytoremediation, the author includes the idea that planting and removing sunflowers allows farmers to —

- A** use another healing plant
- B** grow new crops
- C** reduce damage from smog
- D** remove sewer waste

Read the information and respond to the prompt.

The article describes how some plants have an important job of helping the environment. Plants also can be important in other ways: they might provide food, improve the beauty of a space, or be a reminder of a special person or event.

Think about a specific plant from the article, a specific plant from your home or community, or another plant of your choice. Describe the plant and what makes it important.

CHECKLIST FOR WRITERS

- _____ I planned my writing.
- _____ I revised my writing to be sure that
 - _____ the central idea of my writing is clear;
 - _____ the central idea is elaborated with supporting details;
 - _____ everything in my writing supports my central idea;
 - _____ my writing is organized so readers will understand my ideas;
 - _____ my words and information make my writing interesting to readers; and
 - _____ my sentences make sense and read smoothly.
- _____ I edited my writing to be sure that
 - _____ I used appropriate grammar;
 - _____ I used capital letters and punctuation marks correctly;
 - _____ I spelled words correctly; and
 - _____ I let my readers know where I started new paragraphs.
- _____ I checked my writing to make sure that my ideas will be clear to my readers.

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- 3 The process of using living green plants to clean soil is called phytoremediation (fi-toe-ree-mee-dee-A-shun). *Phyto* is a Greek word that means "plant." The root word for *remediation* means "a process of healing." So, phytoremediation is the process of using plants to heal the earth. Most often this process is used in places where production from businesses and manufacturers has affected the soil. It is used to clean other types of pollution too.
- 4 For example, harmful heavy metals such as lead and mercury are sometimes left behind by manufacturers or businesses. The metals keep most plants from growing. However, a few plants can thrive in the polluted soil while also making the soil cleaner.
- 5 The plants and trees that can be used to clean soils are unique in one important way. They can absorb pollution or heavy metals into their roots, leaves, or stems and still survive. Some plants change the chemicals into something that is safer. Others hold on to the chemicals. Farmers or scientists can remove and destroy the parts of the plants that hold the chemicals.

Soil Superheroes in Action

- 6 Farmers have used different kinds of phytoremediation for years. One common phytoremediation plant farmers use is the sunflower. Sunflowers are very good at absorbing heavy metals such as lead. Once the soil is clean, the farmers remove the sunflowers. Then they can plant other crops they want to grow.



A field of sunflowers

- 7 The military also uses plants to clean up the soil. For example, the United States Navy is planting poplar trees in some areas. The poplars' roots absorb chemicals from the polluted soil and turn them into harmless substances. Also, the army plants cattails in wetlands. The cattails can clean livestock waste, sewage, or heavy metals from the water.
- 8 In cities and towns, smog and pollution can also make the soil unhealthy. Cities can remove chemicals from the soil by planting poplar and willow trees. Corn, date palms, and mustard grasses are also powerful soil cleaners.
- 9 Scientists are learning more about the processes plants use to clean the soil. They are finding which plants work best in different places. Thanks to these special plants and trees, soil can be renewed and used for years to come.

1 The author most likely includes paragraph 2 to help the reader understand that —

- A** trees in the park looked different in the past
- B** the park has a beautiful landscape
- C** a problem at the park was fixed with plants
- D** plants are selected to attract visitors to the park

2 Which information does the author include to support that plants can successfully clean pollution?

- F** Plants chosen to improve polluted soil can have special qualities.
- G** Businesses produce chemicals that can pollute the soil.
- H** Previously polluted land can be turned into public parks.
- J** Water can be dangerous when polluted with some types of metals.

3 What information does the author include to suggest that factories are not the only source of pollution?

- A** Metals left behind by manufacturing can prevent plants from growing.
- B** Sunflowers can remove lead from soil.
- C** Cattails are used to clean up livestock waste from farms.
- D** Some plants are better than others at cleaning soil.

4 The author most likely wants the reader to understand that unhealthy soil can be caused by —

- F** willow trees and green meadows
- G** smog produced in cities and towns
- H** date palms and mustard grasses
- J** paths used for walking in parks

5 Which information does the author include to best support the idea that phytoremediation will be improved in the future?

- A** Polluted land is being cleaned and turned into parks and farms.
- B** Many flowers and grasses are powerful pollution cleaners.
- C** People have used plants to clean up pollution for a long time.
- D** Scientists continue to learn about cleaning polluted soil.

Read the information and respond to the prompt.

The article describes how using plants for phytoremediation is one way to help create a cleaner environment.

What do you think is the best or most important way to create a cleaner environment? Describe your choice and what makes it best or most important. Use details from the article, your own experience, or both to support your ideas.

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**Grade 5 Integrated Reading and Writing
Practice Item Set Spring 2025
Answer Key**

Sequence Number	Correct Answer	Reporting Category	Reporting Category Description
1	A	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	D	002	Demonstrate comprehension of informational texts and use vocabulary development and word analysis strategies
4	J	002	Demonstrate comprehension of informational texts and use vocabulary development and word analysis strategies
5	B	002	Demonstrate comprehension of informational texts and use vocabulary development and word analysis strategies
1	C	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	C	002	Demonstrate comprehension of informational texts and use vocabulary development and word analysis strategies
4	G	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

