

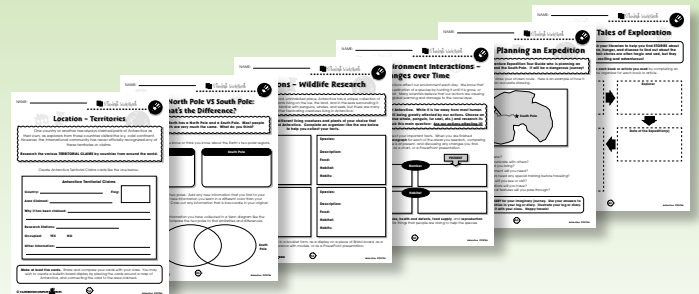
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Human & Environmental Interactions

1. People interact with their environment each day. Sometimes we do things that leave the environment unchanged. Sometimes we do things that harm the environment. Sometimes we do things that renew the environment. Sometimes we do things that protect the environment. Read each example below, and decide how it **affects** the environment. Color in the box that shows your answer.

	unchanged	harmful	renews	protects
a) recycling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) littering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) planting trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) hiking in the woods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) using clean gasoline	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) creating wildlife sanctuaries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) pouring chemicals down the drain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) killing endangered animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. What do you know about **global warming**? It is something that has been in the news for many years. What have you discussed in school? Sit with two friends, and brainstorm what you know about global warming (i.e., what causes it, what are the affects of global warming, etc.).



Human & Environmental Interactions

Many things we do each day affect our **environment**. Learning these things means learning about human and environmental **interactions**. Some of these interactions are good, but others are not. We recycle paper to save trees, but we pollute the air that the trees clean for us. We work to protect endangered animals, but some people continue to hunt and kill them. When an environment is harsh or changing, we must **adapt** to that environment to survive.



One interaction that is affecting Antarctica is climate change. Scientists call this change **global warming**. It is also called the **greenhouse effect**. Some scientists say that it is caused by the Earth's natural cycles. Many other scientists say we are causing this change by polluting the air. The cars we drive pollute our air. The factories that produce the products we need also create this pollution. Many scientists believe this air pollution is causing the temperature of our planet to rise slowly. This change has already affected Antarctica. Much of the **pack ice** that surrounds it, and some of the ice sheets that cover it, are slowly disappearing. They are melting, and the water is flowing into the oceans.

How is global warming affecting Antarctica?

Another effect of pollution is found in the **atmosphere** high above Antarctica. Pollution is harming the **ozone layer** that surrounds the Earth! The ozone layer helps protect humans, animals, and plants from the sun's harmful rays. Unfortunately, scientists have discovered a large hole in the ozone layer over Antarctica. There is now a greater chance of getting a sunburn or skin cancer. Doctors tell people to use sunscreen and to stay out of the sun to avoid its harmful rays. Many countries are taking steps to reduce the pollution that causes ozone layer damage. They are forbidding the use of damaging chemicals, such as those in **aerosol sprays** and air conditioners that use **Freon** gas.



Human & Environmental Interactions

1. Which word matches the definition? Color the arrow that points to the correct word. You may use either the reading or a dictionary to help find your answers.

pack ice	←	<p>A Large areas of frozen water packed together and covering a body of water.</p>	→	atmosphere
greenhouse	←	<p>B A part of the Earth's atmosphere that helps block many of the sun's harmful rays.</p>	→	ozone layer
interaction	←	<p>C A gradual increase in the Earth's average temperature caused by human activity, natural cycles, or both.</p>	→	global warming

2. Put a check mark (✓) next to the answer that is most correct.

- a) Climate change is also known as _____.
- A the ozone layer
- B global warming
- C the atmosphere
- D human interactions
- b) Pollution from some aerosol cans is hurting _____.
- A doctors
- B pack ice
- C the ozone layer
- D scientists



Human & Environmental Interactions

Answer each question with a complete sentence.

3. How do aerosol sprays harm the environment?
- _____
4. What is causing global warming and the greenhouse effect?
- _____

Research

5. Pretend you are a scientist studying the atmosphere above Antarctica. What things would you see? Why would it trouble you? Research the hole in the ozone layer over Antarctica. What does it mean for us?
- Think of these questions when completing your research.
- What do scientists use to see the hole in the ozone layer?**
Is it growing or shrinking?
What is causing the hole in the ozone layer?
What are CFCs and Freon, and how have they hurt the ozone layer?
Can we stop the hole from growing larger?
- Share your findings with your class. Make a Bristol board display to show the things you have researched.
6. Pretend you are a scientist studying the greenhouse effect. What things would you learn? Would they trouble you? Research the greenhouse effect, and explain how it is threatening Antarctica. What does it mean for us?
- Think of these questions when completing your research.
- What is the greenhouse effect?**
How does it affect Antarctica?
What is causing the greenhouse effect?
Can we reverse the greenhouse effect?
- Share your findings with your class. Make a pamphlet to share the things you have learned.

NAME: _____

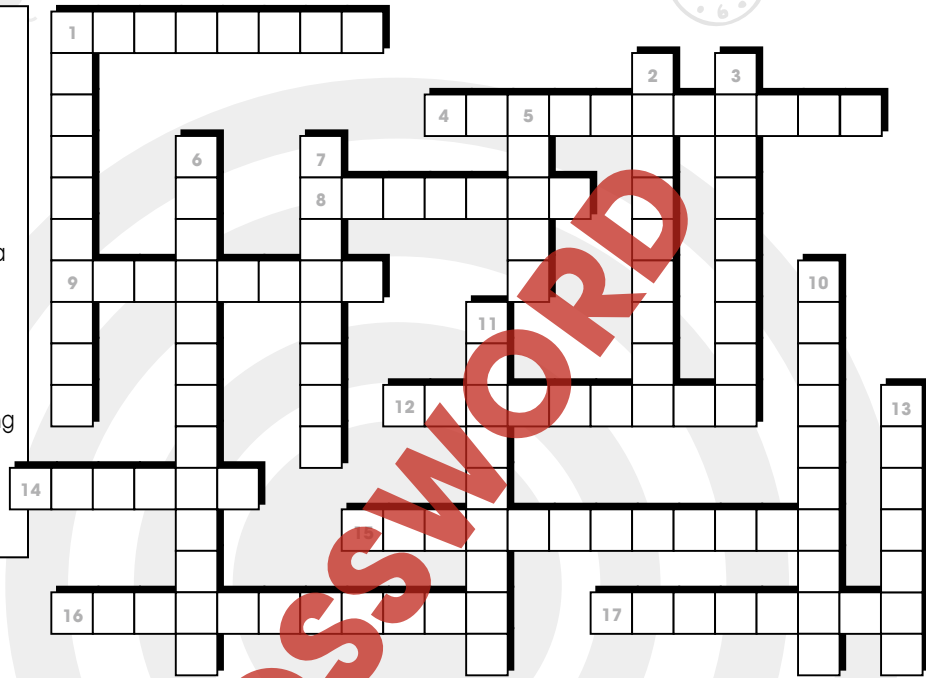
After You Read



Crossword Puzzle!

WORD LIST

penguins
longitude
difficult
climate
desert
snowmobiles
scientists
South America
icebergs
South Pole
movement
ozone
icebreaker
global warming
equator
uninhabited
southern
continent



Across

- 1 Antarctica is in the _____ hemisphere
- 4 Used to travel short distances in Antarctica
- 8 Imaginary line running around the middle of the Earth
- 9 _____ are one of Antarctica's unique physical characteristics
- 12 There are seven of these large land masses on Earth
- 14 Antarctica is a cold, frozen _____
- 15 The continent closest to Antarctica is _____
- 16 Much of Antarctica is _____ because few people live there
- 17 A word that describes how people, ideas and products move from place to place

Down

- 1 The few people who visit Antarctica are _____
- 2 To find Antarctica on a map, look for the _____
- 3 It is very _____ to move from place to place in Antarctica
- 5 Pollution is harming the _____ layer in the atmosphere above Antarctica
- 6 Much of the pack ice is melting because of _____
- 7 A kind of wildlife that lives along the shores of the sea in Antarctica
- 10 A ship that breaks a path in the ice for other ships
- 11 Absolute location is the place where the lines of latitude and _____ cross
- 13 A word that describes the normal weather of a place

NAME: _____

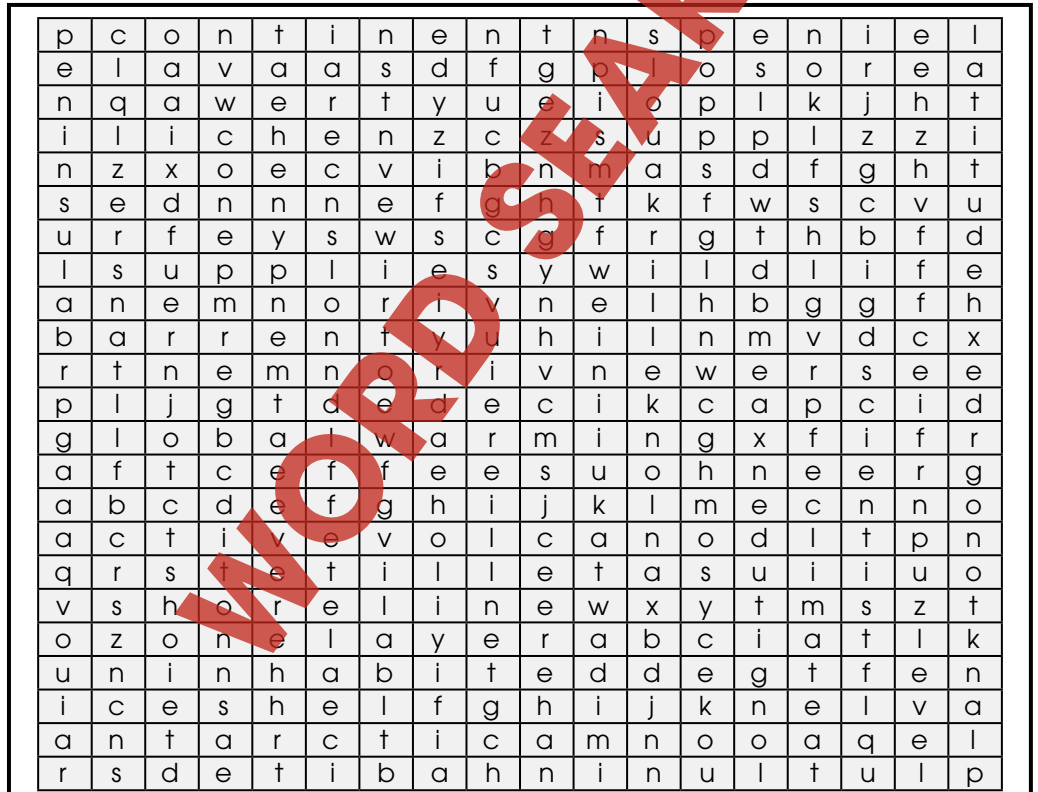
After You Read



Word Search

Find all of the words in the Word Search. Words may be horizontal, vertical, or diagonal. A few may even be backwards! Look carefully!

Antarctica	supplies	ozone layer	krill
peninsula	level	scientist	greenhouse effect
continent	lava	satellite	aerosol
wildlife	latitude	pack ice	uninhabited
species	place	longitude	ice shelf
environment	plankton	barren	active volcano
climate	global warming	lichen	shoreline



NAME: _____

After You Read



Comprehension Quiz

Part A

30

Circle the word TRUE if the statement is true. Circle the word FALSE if it's false.

- | | | |
|------|-------|---|
| TRUE | FALSE | a) Antarctica is in the northern hemisphere. |
| TRUE | FALSE | b) The South Pole is in Antarctica. |
| TRUE | FALSE | c) The Southern Ocean was once called the Antarctic Ocean. |
| TRUE | FALSE | d) North America is the continent closest to Antarctica. |
| TRUE | FALSE | e) There are no roads, railways, or large airports in Antarctica. |
| TRUE | FALSE | f) Mt. Erebus is an extinct volcano. |
| TRUE | FALSE | g) Tall trees grow in Antarctica. |
| TRUE | FALSE | h) More than one million people live in Antarctica. |

Part B

Label the map by doing the following:

1. Show the following features on the map by writing the letter on the map in the correct location.

- a) South Pole
- b) 60°S latitude
- c) South America
- d) Atlantic Ocean
- e) Pacific Ocean



2. Color the Prime Meridian red.

SUBTOTAL: /14

Antarctica Physical Map





Human & Environmental Interactions

Answer each question with a complete sentence.

3. How do aerosol sprays harm the environment?

4. What is causing global warming and the greenhouse effect?

Research

5. Pretend you are a scientist studying the atmosphere above Antarctica. What things would you see? Why would it trouble you? Research the hole in the ozone layer over Antarctica. What does it mean for us?

Think of these questions when completing your research.

What do scientists use to see the hole in the ozone layer?

Is it growing or shrinking?

What is causing the hole in the ozone layer?

What are CFCs and Freon, and how have they hurt the ozone layer?

Can we stop the hole from growing larger?

Share your findings with your class. Make a Bristol board display to show the things you have researched.

6. Pretend you are a scientist studying the greenhouse effect. What things would you learn? Would they trouble you? Research the greenhouse effect, and explain how it is threatening Antarctica. What does it mean for us?

Think of these questions when completing your research.

What is the greenhouse effect?

How does it affect Antarctica?

What is causing the greenhouse effect?

Can we reverse the greenhouse effect?

Share your findings with your class. Make a pamphlet to share the things you have learned.

3.

Possible answers:
Cause a hole to form in the ozone layer, etc.

4.

Possible answers:
Earth's natural cycles, human activities/pollution

5.

Answers will vary in detail depending on resource used

6.

Answers will vary in detail depending on resource used

Across:

- 1. southern
- 4. snowmobiles
- 8. Equator
- 9. icebergs
- 12. continent
- 14. desert
- 15. South America
- 16. uninhabited
- 17. movement

Down:

- 1. scientists
- 2. South Pole
- 3. difficult
- 5. ozone
- 6. global warming
- 7. penguins
- 10. icebreaker
- 11. longitude
- 13. climate

10

11



EASY MARKING ANSWER KEY