

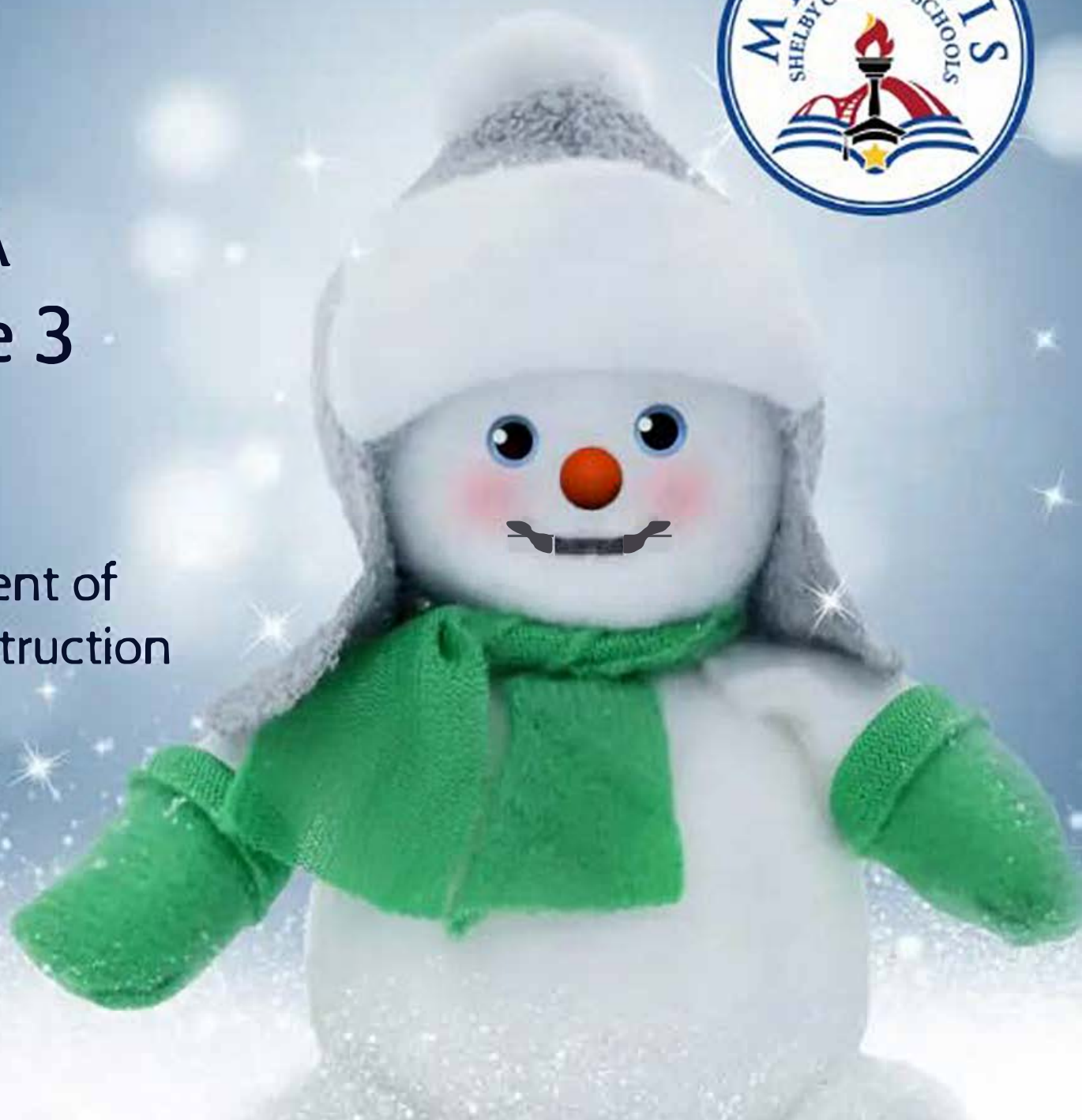
Inclement Weather

RESOURCES



ELA
Grade 3

The Department of
Curriculum & Instruction



Inclement Weather Resource

What is Antarctica?

by NASA 2010



In this section of the Literacy Support Guide, we're reading "What is Antarctica?" by NASA. This informational text written by NASA provides details about the cold continent and why scientists are interested in it.

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Paired Text

1. Read the text
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Ways to Support your Child

1. Ask your child about the informational texts: What was "What is Antarctica?" and the paired text, "Under the Ice" about?
2. **Parent Answer Keys**-Review written responses together.

Related Media

1. Watch the following clips with your child at home:
 - ['Antarctica | Exploring Oceans '](#)
 - ['Antarctica for Kids: Cool Facts About Antarctica for Children - FreeSchool '](#)
 - ['Diving below the Antarctic Ice Sheet with No Escape | Seven Worlds, One Planet | BBC Earth'](#)

ANCHOR TEXT



Name: _____

Class: _____

What is Antarctica?

By NASA

2010

This text from NASA describes Antarctica, which is the coldest place on Earth. As you read, take notes on what scientists study about Antarctica.

- [1] Antarctica is a continent.¹ It is Earth's fifth largest continent. Antarctica is covered in ice. Antarctica covers Earth's South Pole.

What Is Antarctica Like?

Antarctica is the coldest place on Earth. The temperature in the winter is cold enough to freeze water all the time. The temperature in the middle of Antarctica is much colder than the temperature on the coasts.²

Antarctica has two seasons: summer and winter. Earth is tilted in space and the direction of tilt never changes. During summer, Antarctica is on the side of Earth tilted toward the sun. It is always sunny. In winter, Antarctica is on the side of Earth tilted away from the sun. Then, the continent is always dark.

Antarctica is a desert. It does not rain or snow a lot there. When it snows, the snow does not melt and builds up over many years to make large, thick sheets of ice, called ice sheets. Antarctica is made up of lots of ice in the form of glaciers, ice shelves and icebergs.

- [5] Antarctica has no trees or bushes. The only plants that can live in a place that cold are moss and algae.



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1. one of the seven main landmasses on Earth
 2. the area where land meets the sea or ocean

Who Lives in Antarctica?

Antarctica is too cold for people to live there for a long time. Scientists take turns going there to study the ice. Tourists visit Antarctica in the summers. The oceans around Antarctica are home to many types of whales. Antarctica is also home to seals and penguins.

What Can NASA Learn about Earth from Studying Antarctica?

NASA uses satellites³ to study Antarctica. NASA wants to know how Antarctica is changing. Scientists want to know what the changes in Earth's climate are doing to Antarctica's ice sheets. They also want to know what changes in Antarctica's ice might do to Earth's climate.

One tool that NASA uses is ICESat. That stands for the Ice, Cloud and land Elevation Satellite. Using ICESat, NASA can measure changes in the size of Antarctica's ice sheets. ICESat also helps NASA understand how changing polar ice may affect the rest of the planet. Melting ice sheets in Antarctica may change sea levels all over the world.

NASA instruments have also helped scientists create detailed maps of Antarctica. The maps help researchers when planning trips to Antarctica. They also give people a clearer view of the continent.

What Can NASA Learn about Space from Studying Antarctica?

[10] Antarctica is a good place to find meteorites, or rocks that fall from space to Earth. Scientists find more meteorites in Antarctica than any other place in the world. Meteorites are easier to see on the white ice. Also, meteorites that fall to Antarctica are protected by the ice for a long time.

NASA sends teams to Antarctica to learn more about the planet Mars. Antarctica and Mars have a lot in common. Both places are cold. Both places are dry like a desert. NASA tested robots in Antarctica that later landed on Mars.

NASA also goes to Antarctica to study astronaut nutrition. Like people that are in Antarctica in the winter, astronauts in space are not in the sunlight. The sun helps the human body make vitamins. Scientists study people that visit Antarctica to learn how to help astronauts in space get enough vitamins.

3. a man-made object that travels in space and gathers information

Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. What is the main idea of the text?
 - A. Antarctica is too cold for people to visit.
 - B. Scientists study Antarctica because it is just like space.
 - C. Scientists are most interested in the meteorites in Antarctica.
 - D. Antarctica is a special place and important for scientists to study.

2. Which detail best explains why scientists are studying Antarctica?
 - A. "The temperature in the winter is cold enough to freeze water all the time." (Paragraph 2)
 - B. "The only plants that can live in a place that cold are moss and algae." (Paragraph 5)
 - C. "The oceans around Antarctica are home to many types of whales." (Paragraph 6)
 - D. "Scientists want to know what the changes in Earth's climate are doing to Antarctica's ice sheets." (Paragraph 7)

3. Which of the following describes how the information in the text is organized?
 - A. The author describes Antarctica, and then what scientists can learn from the continent.
 - B. The author describes Antarctica, and then compares it to more well known continents.
 - C. The author discusses the advantages of visiting Antarctica, and then some of the challenges.
 - D. The author discusses what Antarctica is like today, and then compares it what Antarctica was like in the past.

4. How does studying Antarctica help scientists prepare for missions in space?

Open Ended Written Response

Directions: Write your answers to the following questions in the space provided. Be prepared to share your original ideas.

1. After learning more about Antarctica, would you ever want to visit? Why or why not?

2. In the text, the author discusses how harsh Antarctica's environment is. Why don't people live in Antarctica? Do you think this is evidence that nature is more powerful than man? Why or why not? What are other places that are too dangerous for humans to live?

3. In the text, the author describes how scientists study Antarctica. How does studying Antarctica help humans better understand Earth, and even space? Why is it important for humans to better understand our planet and space?

PAIRED TEXT



Name: _____

Class: _____

Under the Ice

By Alison Pearce Stevens, Ph.D.

2012

Seals live in the cold ocean waters of the Arctic and off the coast of Antarctica. In this informational text, Alison Pearce Stevens describes the experiences of Weddell seals in Antarctica. As you read, take notes on how seal pups learn to survive in Antarctica.

- [1] In Antarctica, the long dark winter gives way to spring. Ice begins to melt, and the sun stays in the sky all night long.

Into this brightly lit world, the large gray head of a Weddell seal appears through a crack in the ice. The seal takes several deep breaths. Then she opens her mouth and turns her head from side to side. With her teeth, she scrapes¹ off bits of ice. Seals are mammals,² and they need to breathe air. So Weddell seals use their teeth to make sure their breathing holes stay open.



"Untitled" by ecalmelet is licensed under CC0.

The seal makes the hole bigger. When she can fit her large body through it, she hauls³ out onto the ice. She is getting ready to have a baby.

A Baby Is Born

On the ice shelf, the Weddell seal gives birth to a pup. The pup is about three feet long—the size of a two-year-old child. It is covered with thick fur that protects it from the cold wind.

- [5] The pup drinks its mother's milk and grows quickly. Within a few weeks, it is more than six feet long. Beneath⁴ the seal's skin is a thick layer of fat called blubber. Blubber keeps the seal warm in its frozen world.

1. **Scrape** (*verb*) to remove from a surface by rubbing with something sharp
2. warm-blooded animals with fur, a skeleton, and the ability to give milk to their babies
3. **Haul** (*verb*) to pull or drag
4. **Beneath** (*adverb*) under, lower than

When the pup is about two weeks old, it begins to dive with its mother. They slide through the breathing hole into the water below the ice. There the pup learns to swim, diving deeper and deeper each day. In order to stay underwater, it must learn to hold its breath and control its heart rate.

Below the ice, the sun shines brightly through the hole. Finding the opening to breathe is easy, but crawling back onto the slippery ice can be hard for a young seal. With practice and its mother's help, the pup soon feels at home both on the ice and under it.

The young seal spends more and more time below the ice, where it learns to hunt for food. The mother shows her pup how to catch fish, squid, and octopuses. These are important lessons. When the pup is about two months old, it will have to feed itself.

As it grows, the young seal remains on and under the fast ice. Fast ice is attached to the Antarctic coastline. Here the pup stays safe from predators,⁵ such as orcas. When the pup becomes an adult, it will swim farther out in search of food. But it will always live on or under the ice.

5. animals that hunt other animals for food

Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. What is the main idea of the passage?
 - A. Seals must learn how to survive under and on the ice.
 - B. There are many orcas living under the ice.
 - C. There are many seals living in Antarctica.
 - D. Seals are in danger in Antarctica.

2. What is the purpose of paragraph 2?
 - A. It shows the steps seals take to get out from under the ice.
 - B. It shows the danger that faces all Weddell seals.
 - C. It shows the happiness the new seal pup feels.
 - D. It shows that Antarctica is dark all year.

3. Which detail from the text shows that the mother seal protects her pup?
 - A. "So Weddell seals use their teeth to make sure their breathing holes stay open." (Paragraph 2)
 - B. "The pup is about three feet long—the size of a two-year-old child." (Paragraph 4)
 - C. "There the pup learns to swim, diving deeper and deeper each day." (Paragraph 6)
 - D. "The mother shows her pup how to catch fish, squid, and octopuses." (Paragraph 8)

4. How does the seal pup change as it grows?

Open Ended Written Response

Directions: Write your answers to the following questions in the space provided. Be prepared to share your original ideas.

1. In the text, the seal pup learns how to swim and stay underwater. Do you know how to swim? If not, would you like to learn? Why? What about swimming would be fun? What about swimming could be difficult?

2. In the text, the mother seal takes care of the seal pup. How do adults in your life take care of you?

3. In the text, we learn that a seal pup must feed itself after it is two months old. Can you imagine a two month old baby feeding itself? Why or why not? Why do you think some animals take care of their babies for a longer time than others?

ANSWER KEYS



Answer key > What is Antarctica?

by NASA ● 2010

1. What is the main idea of the text? **3.RI.KID.2**

Determine the main idea of a text; recount the key details and explain how they support the main idea.

- A. Antarctica is too cold for people to visit.
- B. Scientists study Antarctica because it is just like space.
- C. Scientists are most interested in the meteorites in Antarctica.
- D. Antarctica is a special place and important for scientists to study.**

2. Which detail best explains why scientists are studying Antarctica? **3.RI.KID.1**

Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as a basis for the answers.

- A. "The temperature in the winter is cold enough to freeze water all the time." (Paragraph 2)
- B. "The only plants that can live in a place that cold are moss and algae." (Paragraph 5)
- C. "The oceans around Antarctica are home to many types of whales." (Paragraph 6)
- D. "Scientists want to know what the changes in Earth's climate are doing to Antarctica's ice sheets." (Paragraph 7)**

3. Which of the following describes how the information in the text is organized? **3.RI.CS.5**

Use text features to locate information relevant to a given topic efficiently.

- A. The author describes Antarctica, and then what scientists can learn from the continent.**
- B. The author describes Antarctica, and then compares it to more well known continents.
- C. The author discusses the advantages of visiting Antarctica, and then some of the challenges.
- D. The author discusses what Antarctica is like today, and then compares it what Antarctica was like in the past.

4. How does studying Antarctica help scientists prepare for missions in space? **3.RI.KID.3** ^

Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

Answers will vary; students should discuss how scientists send teams to Antarctica to prepare for missions in space because the continent has similar conditions to those in space. The text identifies several qualities about Antarctica and Mars share: "Both places are cold. Both places are dry like a desert" (Paragraph 11). Because of the similarities between Antarctica and Mars, scientists were able to test robots in Antarctica that were going to Mars. Next, students should discuss how Antarctica's winter is similar to conditions in space. For example, "Like people that are in Antarctica in the winter, astronauts in space are not in the sunlight" (Paragraph 12). Scientists can study how the lack of sunlight affects people in a safer setting than space would present. In all, studying Antarctica and working in the region can help scientists better prepare for missions they might have in space.

Answer key > Under the Ice

by Alison Pearce Stevens, Ph.D. ● 2012

1. What is the main idea of the passage? **3.RI.KID.2**

Determine the main idea of a text; recount the key details and explain how they support the main idea.

- A. **Seals must learn how to survive under and on the ice.**
- B. There are many orcas living under the ice.
- C. There are many seals living in Antarctica.
- D. Seals are in danger in Antarctica.

2. What is the purpose of paragraph 2? **3.RI.IKI.8**

Explain how reasons support specific points an author makes in a text.

- A. **It shows the steps seals take to get out from under the ice.**
- B. It shows the danger that faces all Weddell seals.
- C. It shows the happiness the new seal pup feels.
- D. It shows that Antarctica is dark all year.

3. Which detail from the text shows that the mother seal protects her pup? **3.RI.KID.1**

Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as a basis for the answers.

- A. "So Weddell seals use their teeth to make sure their breathing holes stay open." (Paragraph 2)
- B. "The pup is about three feet long—the size of a two-year-old child." (Paragraph 4)
- C. "There the pup learns to swim, diving deeper and deeper each day." (Paragraph 6)
- D. **"The mother shows her pup how to catch fish, squid, and octopuses." (Paragraph 8)**

4. How does the seal pup change as it grows? **3.RI.KID.3**

Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time sequence, and cause/effect.

Answers will vary. Students should explain that the seal pup learns to take care of itself as it grows. When the seal pup is first born, its mother must keep it alive: "The pup drinks its mother's milk and grows quickly" (Paragraph 5). This shows that the mother is responsible for feeding the pup. As it grows, the pup learns many new skills under the ice with its mother's help: "There the pup learns to swim, diving deeper and deeper each day" (Paragraph 6). This shows that the pup is getting more comfortable in the water and is beginning to become more independent. After its mother shows the seal pup how to hunt, the pup is now ready to take care of itself: "When the pup is about two months old, it will have to feed itself" (Paragraph 8). This shows that the pup has changed from needing its mother to provide food to now finding food on its own. The seal pup has learned how to take care of itself.