# Grade 3: Unit 4 Lesson 20

**Title:** *Life on the Ice*

**Essential Question:** What is life like for scientists working in the North Pole and the South Pole?

**Week 1**

Questions to ask and discuss while reading:

**Describe what the area in the photo on page 170 is like. Where is it?**

*The photo on page 170 shows the Arctic. It is at the North Pole, in the middle of the Arctic Ocean. It is covered by ice and so cold hot water thrown in the air will freeze.*

**Which two places do you learn about in the selection? Where are they found?**

*The selection contains information about the Arctic and Antarctica regions. They are found at the North Pole and South Pole, the top and bottom of the world.*

**How are these places alike, and how are they different?**

*The regions are alike in that they are both thousands of miles away and very isolated because it is hard to fly in and out; they are extremely cold; require special clothing because of the cold; are studied by scientists who live at the science stations there; both have extended days in summer and nights in winter; both are deserts and are covered with thick ice and snow.*

*Some differences include in the Arctic North Pole: snow and ice is 2 miles thick in the middle of the Arctic Ocean. Antarctica is colder with temperatures plunging to -125 degrees!*

**Why is it so difficult for people to visit the Poles?**

*People have to fly thousands of miles to get to the Poles. Flying an airplane to get there is very hard because it’s like “flying inside a ping pong ball”, instruments used to navigate don’t work, and take off and landing have to be done differently. Also, when the planes take off they have to go 100 miles/hour on ice. Sometimes they even need rockets to help take off. Planes can only fly in and out in the summer when temperatures climb to 10 degrees.*

**Why is extreme a good word to describe these places?**

*Details may include how the Poles are covered with ice; facts about cold temperatures; the isolation of the regions; winters without sun; summers with 24 hours per day of sunlight; the desert climate; the thickness of the ice.*

**How must pilots who fly to these places do things differently?**

*Flying an airplane to get there is some of the hardest flying there is because it’s like “flying inside a ping pong ball” - everything is white and you can’t tell where the ground is. Pilots have to use the stars to navigate because instruments used to navigate don’t work. Take off and landing have to be done differently. Also, when the planes take off they have to go 100 miles/hour on ice. Sometimes they even need rockets to help take off.*

**Why do scientists visit the Poles? What do they hope to learn there?**

*Scientists in the Arctic study the layers of snow to study history, pollution, and climate change. In the Antarctic scientists want to learn more about outer space.*

**What kinds of tests and experiments do the scientists perform?**

*Antarctica scientists collect meteorites because they are easy to see against the white snow, they study the stars - easy to see because of the cold, dry air, measure rays coming from outer space. In the Arctic they drill into the snow layers to find evidence from years gone by to learn how ice ages begin and end.*

**What do you think these scientists look forward to when they return home?**

*The book says they look forward to getting back to the “green world.” They might happy to not have to wear all of those big winter jackets and mittens and to be able to see family and friends.*

**What do people who work at the poles do to survive there? What dangers do they face?**

*The book says they have “to brave the wilderness.” People who work there wear extra warm clothing and have to be trained in how to build shelters in case they get stuck outside. They also have to be careful not to get overheated because sweat can freeze next to their bodies. In winter, when it is dark all the time, they feel tired. They cannot wear jewelry because metal freezes to any skin it touches. The dangers they face are the extreme cold, the isolation with only a small group of people, everything being all white, the 24-hour days and nights during the year, and limited things to do beyond work.*

**Written Response**

In the text, you’ve read about what life is like for scientists at the North Pole and South Pole. What do you think are the two biggest challenges they face working in these regions? Use evidence to support your opinion.

**Sample Student Response**

*Working as a scientist at the North or South Pole is challenging in some ways. The text, Life on the Ice, tells about some of the dangers the workers face. I think the biggest challenge would be dealing with all of the clothing you have to wear for the extremely cold weather. First of all, you cannot wear any jewelry or get your skin near metal because it will freeze to your skin! Although you have big heavy coats, big boots and overalls called fat-boy pants, it’s hard to work with all of those layers. And you have to wear googles all of the time so your eyes don’t get sunburned and temporarily blinded by the light.*

*The other thing that would be difficult would be getting bored because there is not a lot to do and everything looks the same. Like the pilots, everything might seem white like the inside of a ping-pong ball. The book said the scientists are ready to go home to the “green world.” I think no green and brown trees, flowers, black roads and colorful scenery would be challenging. Also, there is not a lot to do since you only have a few people with you. You can work, and it said they can watch videos or go to the gym, but I think that would get boring.*

*There are a few challenges the scientists face working in the polar regions, but I think boredom and the cold weather clothing would be the worst.*

**Week 2, Building Knowledge: Extending the Topic**

**Essential Question:** What is life like in Earth’s polar regions?

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| Cumulative Activities – The following activities should be completed and updated after reading each resource this week. The purpose of these activities is to capture knowledge building from one resource to the next, and to provide a holistic snapshot of central ideas of the content covered in response to the essential question. *It is recommended that students are required to complete one of the Cumulative Activities (Rolling Knowledge Journal or Rolling Vocabulary) for the week.* |

**Rolling Vocabulary: “Sensational Six”**

* Read each resource then determine the 6 words from each text that most exemplify (show best) the central idea of the text.
* Next use your 6 words to write about the most important idea of the text. You should have as many sentences as you do words.
* Continue this activity with EACH selection in the text set.
* After reading all the selections in the Expert Pack, go back and review your words.
* Now select the “Sensational Six” words from **ALL** the word lists.
* Use the “Sensational Six” words to summarize the most important learning from this text set.

**Sample Student Response**

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| **Title** | **Six Vocabulary Words & Sentences** |
| *Life on the Ice* | **Words: unexpected, extreme, wilderness, navigators, region, overheated**  **Sentences:**   1. If you end up outside **unexpectedly** in the Arctic, you could die. 2. Cold is **extreme** in the North Pole and the South Pole. 3. It is like a **wilderness** there because it is so remote. 4. **Navigators** have to use stars because instruments don’t work at the Poles. 5. A polar **region** is an area of the earth at the poles. 6. Wearing all those big clothes, you can get **overheated.** |
| *Emperor Penguins* | **Words**: **region, climate, shelter, unexpected, colony, sheds**  **Sentences:**   1. The penguins live in the polar **region** of Antarctica. 2. A **layer** of fat keeps the penguins warm in the cold climate. 3. There is no **shelter** for the egg when the mom lays it on the ice. 4. It was **unexpected** that the father would pick up the egg. 5. The **colony** of dads help to care for all of the eggs. 6. As the baby penguin grows, he **sheds** his fluffy baby feathers. |
| *Watch Out! Polar Bears!* | **Words:** **climate, survive, layer, shelter, overheated, snowshoes**  **Sentences:**   1. Polar bears live in the Arctic where the **climate** is very cold. 2. Their bodies have parts that help them **survive** in the cold. 3. Polar bears have a **layer** of thick wooly fur. 4. A bear may have a **shelter** in the snow. 5. A polar bear can get **overheated** when it is summer. 6. A polar bear’s feet are like **snowshoes** and help the bear not fall through the ice. |
| *Arctic Life* | **Words: habitat, blubber, organs, straw, down, survive**  **Sentences:**   1. The arctic **habitat** is cold and windy. 2. The walrus has a layer of **blubber** to keep him warm. 3. The brain and the heart are **organs** in the body. 4. The polar bear has fur shaped like a **straw**. 5. The snowy owl has a layer of **down** feathers to keep warm. 6. The animals **survive** the cold in different ways. |
| *Polar Habitats for Kids* | **Words: tundra, adapted, continent, thaw, global warming, iceberg**  **Sentences:**   1. Plants grow on the **tundra**, but only grasses and moss. 2. Animals in polar regions **adapted** and don’t eat plants. 3. The southern polar region includes the **continent** of Antarctica. 4. The top layer of the tundra only **thaws** in the summer. 5. Polar bears are in danger because of **global warming**. 6. **Icebergs** are pieces of ice that have broken off. |
| *Life in the Polar Regions* | **Words: withstand, krill, inhabit, insects, hibernate, extremely**  **Sentences:**   1. Animals must **withstand** very cold temperatures. 2. Whales and other animals eat **krill**, tiny shrimp. 3. Animals **inhabit** the tundra. 4. **Insects** are food for birds traveling to the tundra. 5. Arctic squirrels **hibernate** in the winter. 6. All of the animals live in **extremely** cold weather. |
| *Cool Stories of Earth’s Coldest Regions: Polar Researcher Interviews* | **Words: samples, vast, ice camp, sea ice, drill, invigorating**  **Sentences:**   1. She took **samples** of the ice cover in the Arctic. 2. The ice is **vast** and lonely. 3. The **ice camp** is far away from the main station. 4. One researcher took **sea ice** samples. 5. They have to **drill** for water. 6. The 24 hour sunshine was **invigorating**. |
| **Sensational Six**: **withstand, vast, survive, adapted, inhabit, region** | |
| **Summary:** Animals and humans living in the polar **regions** must **withstand** extremely cold temperatures. Layers of fat, blubber and clothing help animals survive in the cold areas they **inhabit**. Many animals have **adapted** and do not eat plants so they can survive in the **vast** area of ice and snow. | |

**Rolling Knowledge**

1. Read each selection in the set, one at a time.
2. After you read *each* resource, stop and think what the big learning was. What did you learn that was new *and important* about the topic from *this* resource?
3. Write, draw, or list what you learned from the text about (topic). Then write, draw, or list how this new resource added to what you learned from the last resource(s).

**Sample Student Response**

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| **Write, Draw, or List** | | |
| **Title** | **New and important learning about the topic** | **How does this add to what I learned already?** |
| 1. *Emperor Penguins* | Penguins have layers of fat to keep them warm. The fathers work together to raise the baby penguins. | The scientists wear layers of clothing to keep warm. |
| 1. *Watch Out! Polar Bears!* | Polar bears may find shelter in the snow. | Shelter is very important to humans in the polar regions, too. |
| 1. *Arctic Life* | Animals survive the cold in different ways. The polar bear’s fur is shaped like a straw to draw the heat to the black skin. | Adaptations allow animals to survive the cold. |
| 1. *Polar Habitats for Kids* | Animals of the tundra do not rely on plants to eat; they eat fish or each other. Global warming is melting some of the ice. | Antarctica is the southern continent. |
| 1. *Life in the Polar Regions* | Some animals hibernate in the polar regions. | All of the animals live in extremely cold places. |
| *6. Cool Stories of Earth’s Coldest Regions: Polar Researcher Interviews* | Ice camps and ships can be far away from the stations and very lonely. | These jobs are hard, but the ice and snow is beautiful. |

**Week 2 Written Response**

Now that you have learned more about the polar regions, go back and add any additional details to make your opinion writing from last week better.

**Sample Student Response**

*Working as a scientist at the North or South Pole is challenging in some ways. The text, Life on the Ice, tells about some of the dangers the workers face. I think the biggest challenge would be dealing with all of the clothing you have to wear for the extremely cold weather. First of all, you cannot wear any jewelry or get your skin near metal because it will freeze to your skin! Although you have big heavy coats, big boots and overalls called fat-boy pants, it’s hard to work with all of those layers. And you have to wear googles all of the time so your eyes don’t get sunburned and temporarily blinded by the light.*

*The other thing that would be difficult would be getting bored because there is not a lot to do and everything looks the same. Like the pilots, everything might seem white like the inside of a ping-pong ball. The book said the scientists are ready to go home to the “green world.” All of the scientists on the video said the vast ice was beautiful, but it was all you could see. . Also, there is not a lot to do since you only have a few people with you. You can work, and it said they can watch videos or go to the gym, but I think that would get boring. The scientist working on the boat said being on the ice was not the same as being on land.*

*There are a few challenges the scientists face working in the polar regions, but I think boredom and the cold weather clothing would be the worst.*

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| Note to Teacher:  *It might be worthwhile to read some of the building knowledge materials and look at the maps before reading the anchor text. The TED Ed video on the Polar Habitats for Kids site will help build understanding of the differences in the Arctic and Antarctic regions.* |

# Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_

**Title:** *Life on the Ice*

**Essential Question:** What is life like for scientists working in the North Pole and the South Pole?

*This is a note taking form for you to collect thoughts and evidence during your reading and class discussions. You can use this when you write your essay later.*

Describe what the area in the photo on page 170 is like. Where is it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Which two places do you learn about in the selection? Where are they found? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How are these places alike, and how are they different? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Why is it so difficult for people to visit the Poles? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Why is extreme a good word to describe these places? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How must pilots who fly to these places do things differently? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Why do scientists visit the Poles? What do they hope to learn there? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What kinds of tests and experiments do the scientists perform? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What do you think these scientists look forward to when they return home? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What do people who work at the poles do to survive there? What dangers do they face? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Week 1 Written Response**

In the text, you’ve read about what life is like for scientists at the North Pole and South Pole. What do you think are the two biggest challenges they face working in these regions? Use evidence to support your opinion.

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**Building Knowledge: Extending the Topic**

**Essential Question:** What is life like in Earth’s polar regions?

**Rolling Vocabulary: “Sensational Six”**

* Read each resource then determine the 6 words from each text that most exemplify (show best) the central idea of the text.
* Next use your 6 words to write about the most important idea of the text. You should have as many sentences as you do words.
* Continue this activity with EACH selection in the text set.
* After reading all the selections in the Expert Pack, go back and review your words.
* Now select the “Sensational Six” words from **ALL** the word lists.
* Use the “Sensational Six” words to summarize the most important learning from this text set.

|  |  |
| --- | --- |
| **Title** | **Six Vocabulary Words & Sentences** |
| *Life on the Ice* | Words:  Sentences:  1.  2.  3.  4.  5.  6. |
| *Emperor Penguins* | Words:  Sentences:  1.  2.  3.  4.  5.  6. |
| *Watch Out! Polar Bears!* | Words:  Sentences:  1.  2.  3.  4.  5.  6. |
| *Arctic Life* | Words:  Sentences:  1.  2.  3.  4.  5.  6. |
| *Polar Habitats for Kids* | Words:  Sentences:  1.  2.  3.  4.  5.  6. |
| *Life in the Polar Regions* | Words:  Sentences:  1.  2.  3.  4.  5.  6. |
| *Cool Stories of Earth’s Coldest Regions: Polar Researcher Interviews* | Words:  Sentences:  1.  2.  3.  4.  5.  6. |
| **Sensational Six:** | |
| **Summary:** | |

**Rolling Knowledge Journal**

1. Read each selection in the set, one at a time.
2. After you read *each* resource, stop and think what the big learning was. What did you learn that was new *and important* about the topic from *this* resource? Write, draw, or list what you learned from the text about (topic).
3. Then write, draw, or list how this new resource added to what you learned from the last resource(s).

|  |  |  |
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| **Write, Draw, or List** | | |
| **Title** | **New and important learning**  **about the topic** | **How does this resource add to what I learned already?** |
| 1. *Emperor Penguins* |  |  |
| 1. *Watch Out! Polar Bears!* |  |  |
| 1. *Arctic Life* |  |  |
| 1. *Polar Habitats for Kids* |  |  |
| 1. *Life in the Polar Regions* |  |  |
| 1. *Cool Stories of Earth’s Coldest Regions: Polar Researcher Interviews* |  |  |

**Week 2 Written Response**

Now that you have learned more about the polar regions, go back and add any additional details to make your opinion writing from last week better.

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