



## Blizzard Bag – Day Two

Mrs. McKibben and Mrs. Griffith  
4<sup>th</sup> Grade – Pickaway Elementary

We hope that you enjoy your snow day. Here are your required Blizzard Bag lessons to complete. They are due back at school when we return.

### Reading

“The Amazingly Adapted Polar Bear” story and questions  
*\*\*Try to make time to read for 15 minutes during the day also!!*

### Math

“Solve Winter Equations” and “Add or Subtract” worksheets  
*\*\*Try to make time to practice your math facts during the day also!!*

### Social Studies

“Chronological Order” worksheet

### Science

“The Science of Snowflakes” text and questions

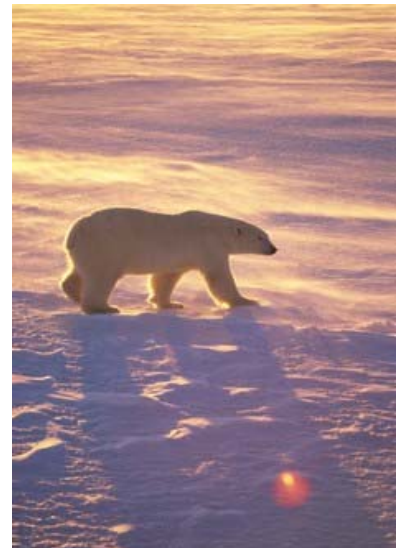
Name: \_\_\_\_\_

# The Amazingly Adapted Polar Bear

by Guy Belleranti

Animals have special adaptations that help them survive in their habitats. One of the most interesting is the polar bear of the Arctic.

To stay warm, polar bears have two layers of fur. The hairs of the outer coat are hollow, increasing their insulating ability. They also have a thick, warm coat of fur below the outer coat. Underneath their fur polar bears have black skin which helps absorb heat. Underneath this skin polar bears can put on a layer of fat for even more insulation. In fact, during the cold of winter this fat may be over 4 inches thick!



Polar bears in warm-weather zoos can also adapt quite well. Their hollow hairs hold water, providing cooling. When living in a warm climate, they don't put on the thick fat layer because extra insulation isn't needed.

While polar bears do occasionally eat sea vegetation and berries, they prefer to hunt. In fact, they are the best hunters of all bears. When on land they often camouflage themselves by placing their paws over their black nose and mouth. Polar bears have the best vision of any bear and an excellent sense of smell. Fur and rough bumps on the soles of their wide snowshoe-like feet provide traction on ice.



Polar bears are well adapted for swimming to ice floes in search of their favorite food - seals. They use their partially webbed front feet to paddle, while steering with their back feet. They have a more elongated body and head than other bears. This shape helps them move through the water. In fact, this marine mammal can swim for 60 miles without stopping.

## About the Author

Guy Belleranti works as a docent at Reid Park Zoo in Tucson, Arizona. The information in this article comes from his experiences working with animals and teaching others.

Name: \_\_\_\_\_

# The Amazingly Adapted Polar Bear

by Guy Belleranti



1. What color is a polar bear's skin?

- a. white
- b. gray
- c. light yellow
- d. black

2. How does a polar bear's skin color help it to survive in the cold winter?

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3. Are polar bears carnivores, herbivores, or omnivores? \_\_\_\_\_

4. How does the elongated head and body of a polar bear help it to survive?

- a. They help the polar bear hide in the snow.
- b. They help the polar bear swim through water more quickly.
- c. They help keep the polar bear warm.
- d. They help polar bears find berries and sea vegetation.

5. Read the following sentence from the article.

*This marine mammal can swim for 60 miles without stopping.*

Which is the best definition for the underlined word.

- a. animal from the Arctic
- b. animal that does not get tired easily
- c. animal that spends a lot of time in the water
- d. animal with four legs

6. Read the following sentence from the article.

*Fur and rough bumps on the soles of their wide snowshoe-like feet provide traction on ice.*

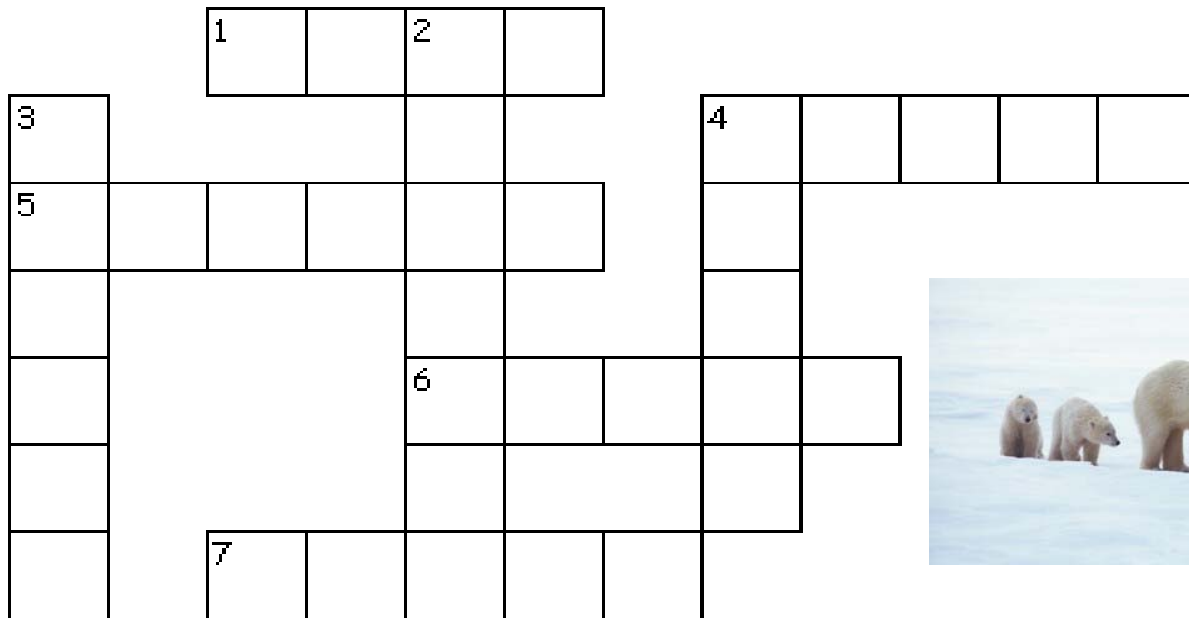
Which is the best definition for the underlined word.

- a. ability to avoid slipping
- b. ability to jump high
- c. ability to slide on something
- d. ability to keep warm

Name: \_\_\_\_\_

# The Amazingly Adapted Polar Bear

Crossword



Use information from the article to complete the crossword puzzle.

## Across

1. Polar bears love to hunt this animal.
4. This is the number of miles a polar bear can swim without stopping.
5. This is the region of the world where polar bears live.
6. The hairs on a polar bear's \_\_\_ coat are hollow.
7. This is the color of a polar bear's skin.

## Down

2. The Reid Park Zoo is located in this state.
3. When swimming, a polar bear's front legs do this.
4. When swimming, a polar bear's back legs do this.



Name: \_\_\_\_\_

# Solve Winter Equations

Directions: Solve each of the following word problems. Show your work!

1. A polar bear has five rows of fifty snowballs each. How many snowballs does the polar bear have?

2. At the zoo, the zookeepers make 4,000 pounds of ice. The zookeepers can make 400 pounds per day. How many days will it take to make 4,000 pounds of ice?

3. Each basket can hold twenty snowballs. Mrs. Miller gives one basket to two hundred students. How many snowballs will the children have altogether?

4. Mrs. Scott needs to buy pencils for ten schools. Each student must have four pencils. Mrs. Scott will need to buy 80,000 pencils. The pencils come in packs of 800. How many packs of pencils will she need to buy?

Name: \_\_\_\_\_

Directions: Add or subtract each of the following.

# Add Or Subtract

$$\begin{array}{r} 6,033 \\ + 8,570 \\ \hline \end{array}$$

$$\begin{array}{r} 9,295 \\ - 180 \\ \hline \end{array}$$

$$\begin{array}{r} 6,745 \\ + 640 \\ \hline \end{array}$$

$$\begin{array}{r} 5,817 \\ + 183 \\ \hline \end{array}$$

$$\begin{array}{r} 4,338 \\ + 1,900 \\ \hline \end{array}$$

$$\begin{array}{r} 818 \\ + 107 \\ \hline \end{array}$$

$$\begin{array}{r} 6,190 \\ - 280 \\ \hline \end{array}$$

$$\begin{array}{r} 2,507 \\ + 3,009 \\ \hline \end{array}$$



$$\begin{array}{r} 6,280 \\ - 5,300 \\ \hline \end{array}$$

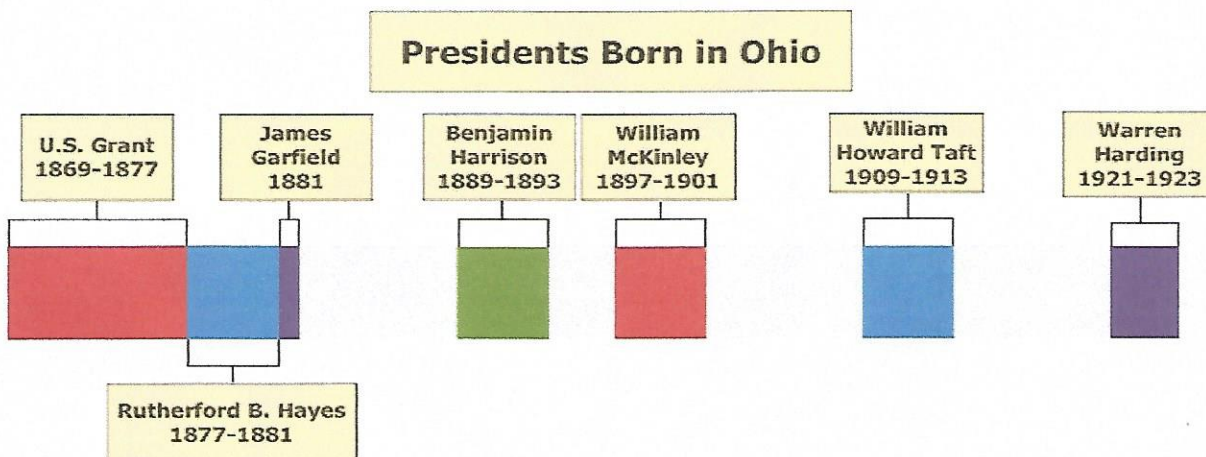
$$\begin{array}{r} 4,064 \\ - 490 \\ \hline \end{array}$$

$$\begin{array}{r} 9,260 \\ - 306 \\ \hline \end{array}$$

**Blizzard Bag Assignment**  
**Chronological Order – Timelines**

Name \_\_\_\_\_

Social Studies



1. Which person served as president first?

- A. U.S. Grant
- B. William McKinley
- C. Warren Harding
- D. James Garfield

2. When was Rutherford B. Hayes the president of the United States?

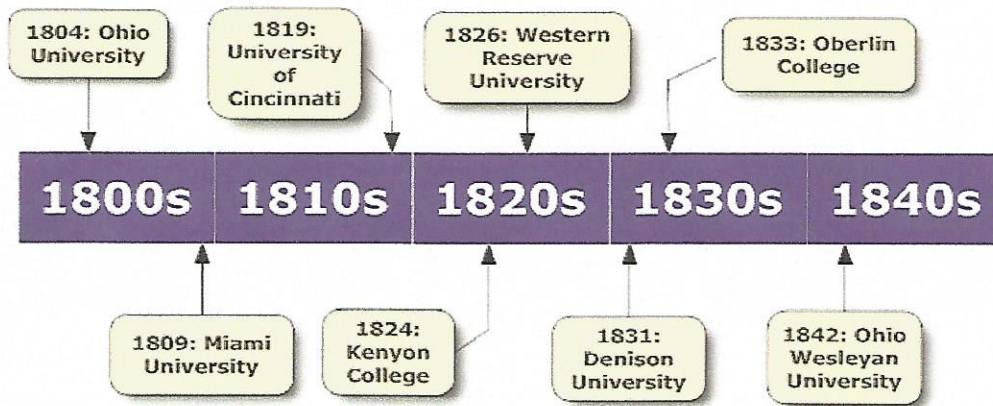
- A. 1909-1913
- B. 1897-1901
- C. 1877-1881
- D. 1889-1893

3. In what year did William Howard Taft become president?

- A. 1921
- B. 1909
- C. 1877
- D. 1889

4. How many years did Benjamin Harrison serve as president?

- A. four years
- B. six years
- C. two years
- D. eight years



5. The timeline above shows when certain colleges in Ohio were founded. In what year was Denison University founded?

- A. 1809
- B. 1826
- C. 1831
- D. 1833

6. The timeline above shows when certain colleges in Ohio were founded. Which college was founded in 1809?

- A. Ohio University
- B. Kenyon College
- C. Oberlin College
- D. Miami University

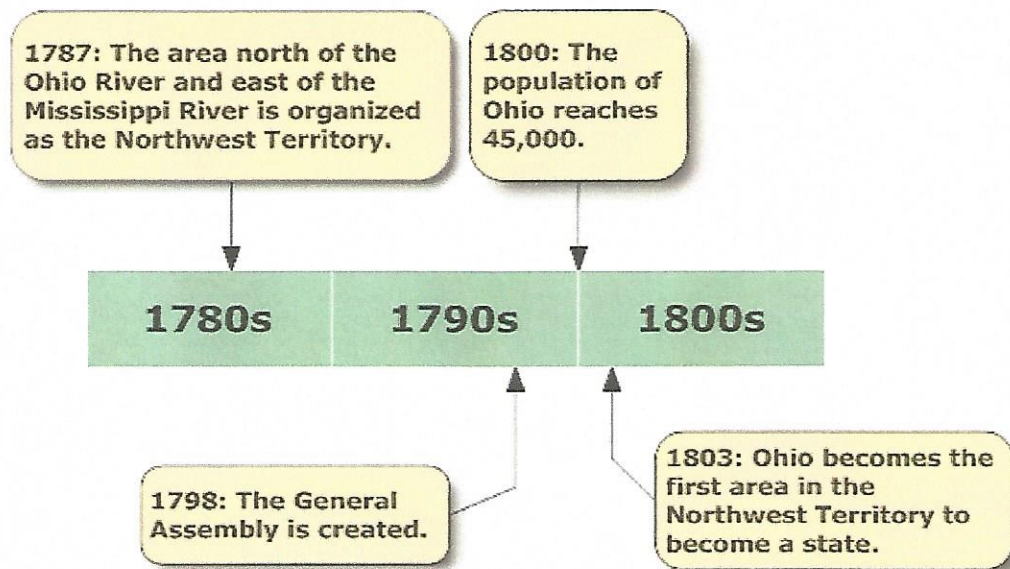
7. The timeline above shows when certain colleges in Ohio were founded. Which of these colleges was founded first?

- A. Ohio University
- B. University of Cincinnati
- C. Ohio Wesleyan University
- D. Oberlin College

8. The timeline above shows when certain colleges in Ohio were founded. Which college was founded in 1819?

- A. Western Reserve University
- B. University of Cincinnati
- C. Oberlin College
- D. Miami University





9. In what year did Ohio become a state?

- A. 1798
- B. 1803
- C. 1787
- D. 1800

10. In what year was the Northwest Territory organized?

- A. 1800
- B. 1787
- C. 1803
- D. 1798

11. When was the General Assembly created?

- A. 1803
- B. 1798
- C. 1800
- D. 1787

# The Science of Snowflakes

*Written by: Kristine Nannini*

Unless you live in a desert or a tropical climate, you've probably seen snowflakes fall from the sky. It's an amazing sight when snow collects on the ground and blankets everything. When most people see snow, they try to find creative ways to melt it and clear it from the roads. However, scientists would rather study it. Through many years of research, scientists have made some amazing discoveries about these little frozen crystals.

One such discovery is how snowflakes form. Snowflakes are part of the water cycle because snow is a form of precipitation, just like rain. When the temperature is 32 degrees Fahrenheit or colder, water changes from a liquid to a solid. A snowflake is a special kind of solid. It forms when water vapor condenses, or gathers onto dust particles inside of clouds. On warm days, the water vapor would collect to make rain drops. However, on cold or freezing days, the water vapor can collect into frozen crystals which fall from the sky as snow.

In addition to how they form, scientists have researched how snowflakes get their crystal shape. They found that all water molecules have an electric charge. That electric charge makes the water molecules stick together. In order for the water molecules to stick together, it must be cooled to 32 degrees Fahrenheit or colder. When this happens, a crystal is formed. If it is warmer than 32 degrees Fahrenheit, the water molecules move too fast and won't stick together to form crystals.

With all this research, scientists have also tried to figure out if two snow crystals can look exactly the same. Most scientists believe that no two snow crystals are alike because they come in so many different shapes and sizes. Their research has shown that slight differences in temperature, moisture, and pressure create the different crystal combinations. There are also other factors that affect a crystal's shape. For example, as a crystal falls to the ground, its shape can be changed by the wind and by impacting other snow crystals. While this is fun to think about, not even scientists are 100 percent sure that all crystals are different. To know this, they would have to look at every crystal under a microscope. That would take a really long time!

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score

# The Science of Snowflakes

**Instructions:** Read the passage titled *The Science of Snowflakes* and answer the questions below.

1.) Using clues from the passage, what does the word **precipitation** most likely mean?

- a.) A form of water that falls from the sky.
- b.) The process where water turns into snow.
- c.) The process that forms clouds.
- d.) The process where snowflakes melt into water.

2.) Which of following best describes the main idea of the entire passage?

- a.) Most people just want to keep snow off the roads, instead of studying it.
- b.) Scientists are not sure if two snowflakes can be exactly alike.
- c.) Scientists have made discoveries about snowflakes.
- d.) Snowflakes form high up in the clouds.

3.) Use details from the text to explain why water molecules can form crystals when the temperature drops below 32 degrees Fahrenheit.

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Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score

## The Science of Snowflakes

- 4.) According to the text, which of the following stops water molecules from sticking together?
- a.) Electric charges stop the water molecules from sticking together.
  - b.) Heat makes the water molecules move too fast to stick together.
  - c.) The freezing process stops the water molecules from sticking together.
  - d.) The water molecules naturally don't stick together.

- 5.) According to the passage, the shape of a snowflake can be changed by the wind and by impacting other snowflakes. Draw an inference from the passage to explain what probably happens to these delicate crystals as they fall to the earth.

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