

Reading ACAP 6th

Name: _____

Class: _____

Date: _____

1. Which sentence is an example of formal language that could be used in an informative essay?

- A. Journalists have to so much writing day in and day out.
- B. It seems to me that the settlers had quite a tough existence.
- C. The communication system that birds use is highly developed.
- D. The ability of the committee to get any work done is really, really lacking.

2. A student is writing a narrative for language arts class. Read a paragraph from the narrative.

Lanie paced backstage, waiting her turn. She could have watched the act before her as a distraction. But she needed to run through the son in her head that she was about to perform on the piano for the school talent show. She heard the music from the violin onstage stop. Lanie knew it was now her turn.

Which sentence should the student include at the end of the paragraph to **best** add descriptive details?

- A. Then, Lanie felt really nervous, and her heart began to beat fast while her hands shook in front of her.
- B. At that time, Lanie felt uneasy about performing in front of others, her hands moving back and forth.
- C. Suddenly, Lanie felt her heart beating wildly in her throat, her hands trembling like a tree in an earthquake.
- D. Abruptly, Lanie felt hesitant to go out on stage, while her hands quivered from her distress.

3. Which sentence uses parentheses incorrectly?

- A. The best part of a picnic is (cooking juicy burgers) on an outdoor grill.
- B. History (my best subject in school) is the first class on my schedule this year.
- C. A giraffe (Jim's favorite animal) spends most of its day eating leaves from trees.
- D. My uncle is an antiques dealer (a fascinating career, I think) in Atlanta, Georgia.

A Quick Guide to Snow and Snowflakes

Are there days when you wish for snow? If you live in a warm, dry place like one of the Arizona deserts, snow almost never falls. Florida, on the other hand, has plenty of moisture, but the temperatures are often not low enough for snow to form. Snow requires two things: moisture and low temperatures. Snow crystals cannot form without both of these.

What is snow?

Snow is precipitation in the form of ice crystals. Ice crystals form in a cloud when the temperature in the cloud is below freezing. Freezing occurs at 32 degrees Fahrenheit. Water droplets form when water changes from a vapor to a liquid. The tiny water droplets then freeze into ice crystals. When the Sun heats the water in lakes or streams, the water evaporates—or turns into vapor. This vapor rises into the atmosphere, condenses, and forms clouds. If the atmosphere is warm, rain falls from the clouds. If the atmosphere is cold (below freezing), snow falls.

What are snow crystals?

Scientists use the term "snow crystal" and "snowflake" to describe two different things. A snow crystal is a single crystal of ice, but a snowflake is a cluster of snow crystals that falls to Earth. Snow crystals are very different from sleet.

Sleet occurs when drops of rain freeze as they fall to Earth. Snow crystals, on the other hand, are formed in a cloud before they fall to Earth.

Dr. Kenneth Libbrech, a physics professor at the California Institute of Technology, studies snow crystals. He puts them under high-powered microscopes and photographs them. He says that the most basic form of a snow crystal is a hexagonal prism (figure 1). Some are long and thin. Others are short and thick. The size varies, but the shape remains the same. Small snow crystals usually take the simple form of a hexagonal prism.

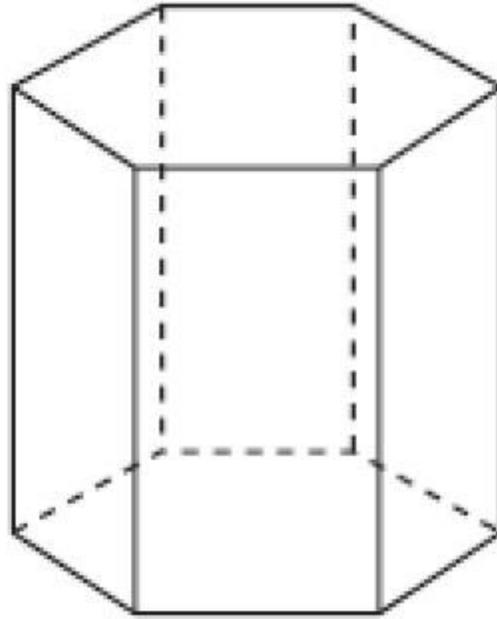


figure 1

As snow crystals grow, branches sprout from the corners to make more complicated shapes. There are six corners, so most snow crystals have six arms. The arms tend to grow at about the same rate, so they are all the same length. Of course, not all snow crystals have a perfect shape. It is difficult to see some snow crystals with the human eye. This is a drawing of one that was photographed through a high-powered microscope (figure 2).

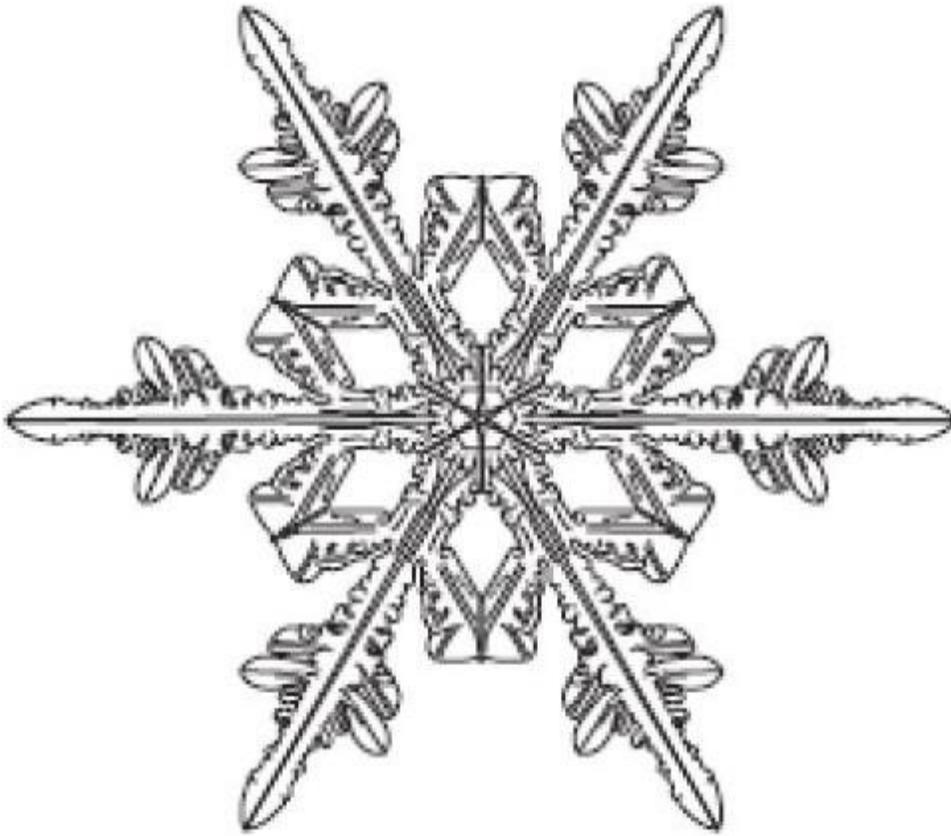


figure 2

What are snowflakes?

Snowflakes occur when snow crystals join together. Most snowflakes are about a half an inch wide. Much-larger snowflakes may form when the ground temperature is near freezing and light winds are blowing. Big snowflakes can be almost two inches wide. It is difficult to measure snowflakes, however, since they tend to melt!

Why is snow white?

Snow crystals have no color at all. When they fall as snowflakes, they appear white. Most natural materials, such as grass, dirt, or rocks, absorb some sunlight, which gives them their colors. Snow does not absorb sunlight. It reflect almost all light, so it looks white.

Sometimes deep snow will appear blue. As the light travels through many layers of snow, some of it is absorbed. Red light is absorbed more easily than blue light, so the light bouncing back tends to look blue.

Why is snow crunchy?

Snow affects how sound waves travel. When the snow is fresh and fluffy, it absorbs sound waves. Poets write about how quiet the world sounds after a snowstorm. They are making a scientific observation. New snow has a sound-dampening effect.

But as the snow is packed down, the snow crystals compress together. This creates a crunchy or creaking sound. Experts at the National Snow and Ice Data Center say that "the colder the snow, the louder the crunch." As the snow begins to melt, it makes no noise at all.

Why study snow?

Scientists like Dr. Libbrecht study snowflakes to understand exactly how they form and assemble themselves into particular shapes. This is called self-assembly. Snowflakes use a simple form of self-assembly. The cells in our body, for example, form and divide on their own. Biological self-assembly, the kind that occurs in the human body, is much more complex than snowflake self-assembly. However, scientists often gain insight into more complex mechanisms by understanding simple ones. "There is a great deal of interesting physics, chemistry, and materials science wrapped up in snowflake growth, and studying the lowly snowflake may indeed teach us something useful," Dr. Libbrecht says. He adds, "History has shown over and over that the fundamental knowledge gained by doing basic science (without worrying about what it's good for) often leads to engineering applications." Dr. Libbrecht does not know what those applications might be, but he thinks that scientists should try to understand how nature works because all knowledge is useful.

When people learn that he studies snowflakes, many ask, "Is every snowflake unique?"

"Yes!" he says, and then he explains. "It's like shuffling a deck and getting the exact same shuffle for 52 cards. You could shuffle every second for the entire life of the universe, and you wouldn't come close to getting two of the same."

Each and every snowflake is amazing in its own way.

4. Which sentence from the passage **best** supports the idea that each snowflake is an original?
 - A. As snow crystals grow, branches sprout from the corners to make more complicated shapes.
 - B. It is difficult to see some snow crystals with the human eye.
 - C. Much-larger snowflakes may form when the ground temperature is near freezing and light winds are blowing.
 - D. Each and every snowflake is amazing in its own way.

5. In the section, "What are snow crystals?" how is the idea of the shape of snow crystals introduced?
 - A. by explaining the process scientists use to observe snow crystals
 - B. by presenting anecdotes from scientists who have studied snow crystals in nature
 - C. by comparing opinions from different scientists about snow crystals
 - D. by sharing the way scientists believe the formation of snow crystals occurs

6. Which statement about snowflakes is supported by information in **both** the passage and figure 2?
- A. Snowflakes can teach us something useful.
 - B. Snowflakes can sometimes appear blue.
 - C. Snowflakes can have complex designs.
 - D. Snowflakes can dampen sound.
7. Which information **best** supports the claim that snow can appear colorful?
- A. Blue light tends to bounce off deep snow.
 - B. Fresh snow absorbs sound waves.
 - C. White clouds produce snow.
 - D. The Sun creates red light.
8. The passage describes the formation of snow crystals and snowflakes. Write an essay analyzing how weather conditions affect the look and appearance of snow. Use evidence from the passage to support your response.