Snow Packet
Day 2

Grade 4

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.

_____

_____

_____

_____

_____

_____

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.

Name: _____ Date: _____

Winter Angles

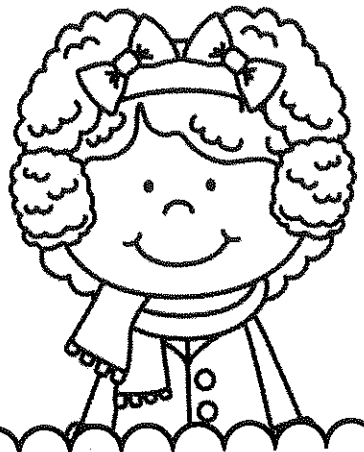
OBTUSE — Red

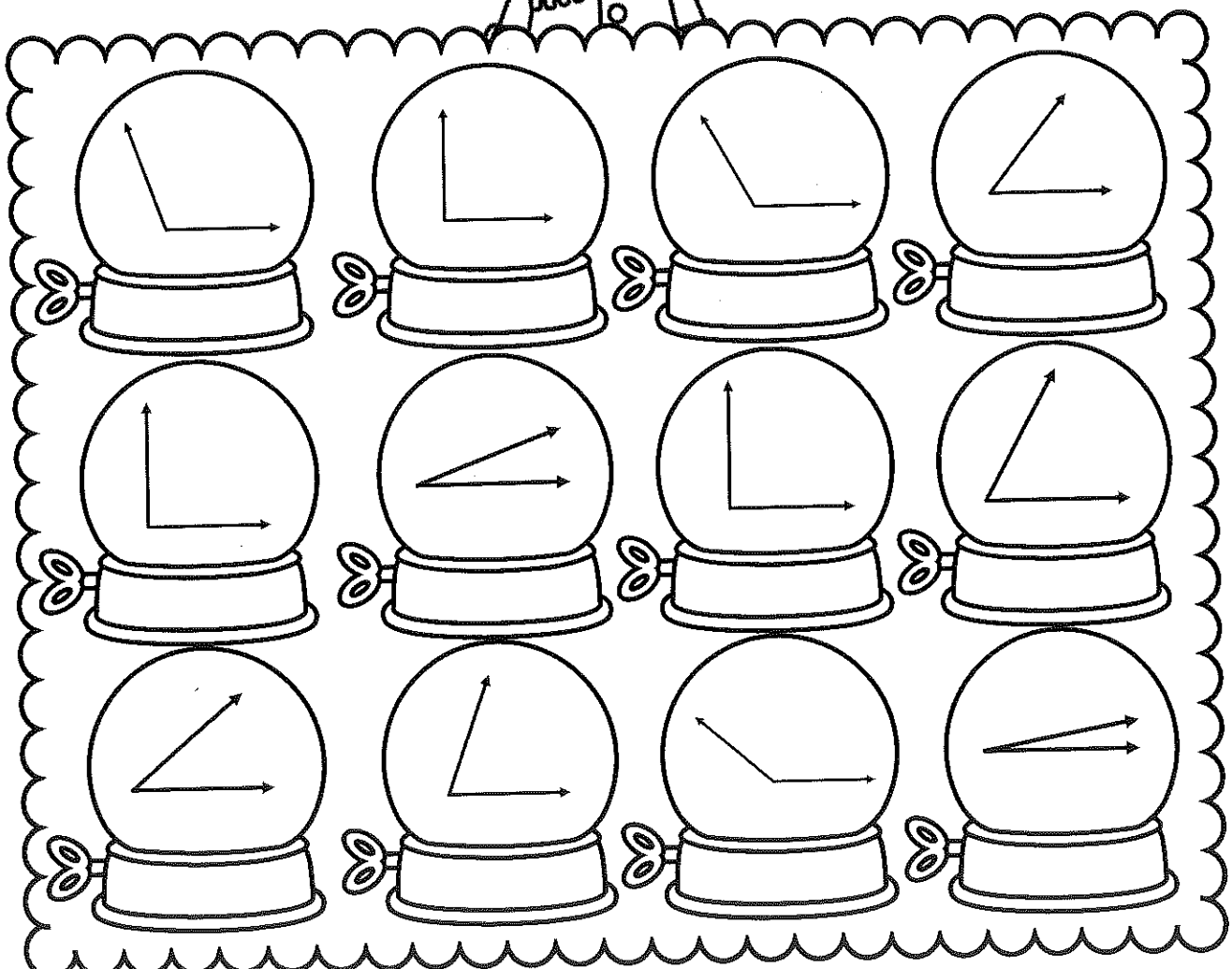
ACUTE — Green

RIGHT — Blue

Directions

Look at the type of angle in each snow globe. Then use the code to color the snow globe.





Name: _____

Supply and Demand

By Lill Pluta

At nine o'clock sharp, when Stan opened his store,
Hundreds of shoppers rushed straight through the doors.
All of them wanted, demanded to buy
A Boomtastic, Zoomtastic, Fantastic Fly.

These robotic toys were the hottest new craze.
Some people had waited in line for five days.
They dashed down the aisles shouting, "Mine! They're all mine!"
And snatched up the gadgets for nine-ninety nine.

In fifty-three seconds, the toys were all sold.
"Try buying online," the sad shoppers were told.
With such high demand and a shrinking supply,
The price of the Boomtastic Flies soared sky high.

In a matter of weeks, a new trend appeared –
The Wobbly Wombat, so wacky and weird.
Meanwhile at Stan's, he got Flies back in stock,
But buyers said, "No! It's the Wombats that rock!"

The wants of consumers can change. They are fickle.
Now Stan sells the Flies for two dimes and a nickel.

Name: _____

Supply and Demand

By Lill Pluta

1. What is the best-selling item at Stan's store?

_____

2. What happens to the price of Stan's Flies when the demand is more than the supply?

_____

3. What happens to the demand for Stan's Flies when the Wobbly Wombat becomes the new craze?

_____

_____

4. Compare the price of Stan's Flies at the beginning of the poem versus at the end of the poem.

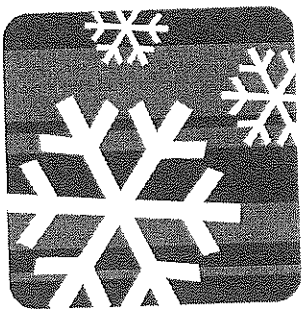
_____

_____

5. What accounts for the change in price you described in Question 4?

_____

_____



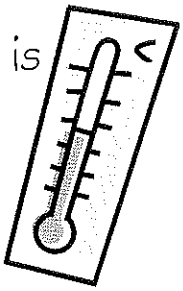
Snow Day Science

Name: _____

What is Snow?

Snow is frozen water that falls from the sky. All snowflakes have six sides, but no two snowflakes are the same.

Snow is precipitation in the form of small white ice crystals. Snow is formed from the water vapor in the air at a temperature of less than 32 degrees Fahrenheit.



What state of matter is snow?
Snow is a type of solid precipitation that forms in clouds when the air temperature is below freezing.

Is snow part of the water cycle?

_____

Is snow a solid, liquid, or gas?

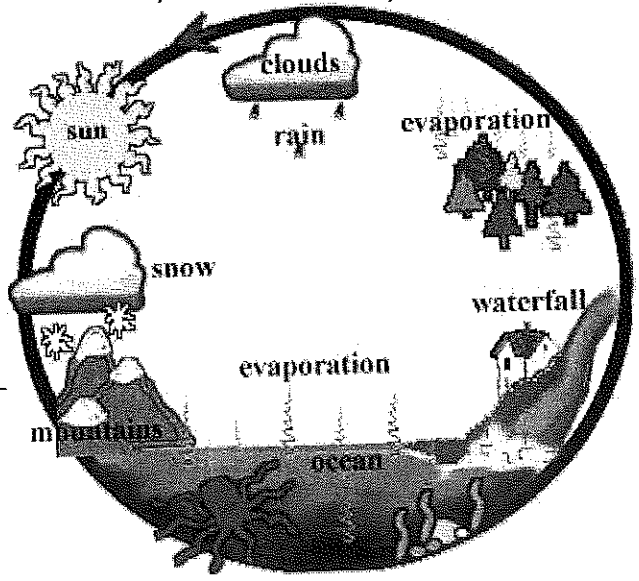
_____

Where does snow form?

_____

Once snow falls to the ground it will eventually melt and then _____

The Water Cycle



Name: _____ Date: _____

Mass Etiquette Worksheet

Write True or False in the spaces provided.

_____ 1- When we enter and leave Church we should do it reverently and respectfully.

_____ 2- When we enter and leave Church, genuflect toward the Tabernacle.

_____ 3- You can chew gum at Church and still receive Holy Communion.

_____ 4- Those who are non-Catholic may come up to receive Holy Communion.

_____ 5- Only those Catholics who are not in mortal (serious) sin and who have fasted for one hour are welcome to receive Holy Communion.

_____ 6- Those who are non-Catholic or who cannot receive Holy Communion they may come up to receive a blessing.

_____ 7- You should make a reverential bow as you step up to receive both the Body and Blood of Christ.

_____ 8- A profound bow will suffice if one is physically incapable of genuflecting.

_____ 9- If you are ill, you should not receive from the chalice.

_____ 10- When the minister says, "Body of Christ" or "Blood of Christ", the response is a clear "Amen!" (which means "I believe!" or "So be it!")

_____ 11- You do not have to consume the Body of Christ immediately.

_____ 12- Candies, breath mints, lozenges does not break the fast.

_____ 13- For no important reason you may leave Mass any time after receiving Holy Communion.

_____ 14- Cell phones should be turned off during Mass.

_____ 15- Dress modestly and appropriately to Mass.

_____ 16- For no important reason you can deliberately arrive late for Mass because it is not considered a sin.

_____ 17- Leaving church before the last hymn ends is inappropriate.

_____ 18- Respect for the Eucharist demands that we kneel on our knees without leaning back on the pew.

_____ 19- If you are ill or disabled, it is acceptable to sit instead of kneeling.

_____ 20- You do not have to shake hands during the Sign of Peace. It is permissible to politely say, "Peace be with you," without shaking hands.