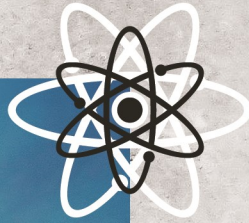


EXPLORE BOOK
GRADES 7-12

WEATHER

DISCOVERING GOD'S
DESIGN IN THE SKY



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KNOW WHY YOU BELIEVE
WHAT YOU BELIEVE

Colors of the Sky

Why is the sky blue? Why are sunsets red?

The sky is colorful because of the sun. The white light has all the colors of the rainbow in it: red, orange, yellow, green, blue, indigo, and violet. When things are just right (either with a rainbow or a sunset), the component colors are visible.



The sky is blue because the sunlight is scattered. Of course, God has specially designed this because the color blue is

absorbed by air molecules and given off again in all directions. Other colors are not as separate and usually not seen. It also has a shorter wavelength and greater energy than the other colors. At sunrise or sunset, the sunlight comes in at a low angle and passes through a greater thickness of atmosphere. Because of this, the blue color is separated and much of it is absorbed by air and eliminated. As a result the other colors are scattered across the sky, especially orange and red.

The colors of sunlight are also responsible for the different colors we are able to enjoy here on earth. The surface of each object finds colors that will reflect from it. God also created the night to look amazing with various shades of gray since colors are not available from the sun.

Clouds often appear bright white in color because they reflect all colors equally. Similar to clouds, other materials reflect all colors uniformly, including chalk, fresh snow, flour, milk, and sugar.

It is important to remember God created everything around you. As we explore the account of creation in Genesis, you will see God’s handiwork and His amazing design.



JOURNEY THROUGH
THE CREATION ACCOUNT

DAY 1 • GENESIS 1:1-5

On Day 1 of creation, light is created and divided from the darkness. God begins to literally speak things into existence: “Let there be light.” From the beginning, God created an environment which we as mankind can see. We were not meant to be blind—physically or spiritually! He wanted and intended us to be aware of His existence, His creation, and His activities. God’s first day of creation work included creating the light, and then separating it from the darkness. God was sure to record, “the evening and the morning were the first day.”

What are Clouds?

Clouds are visible moisture that can be in the form of liquid droplets or ice crystals. They are given different names based on their shape and height in the sky.



Some are puffy while others are grey and uniform. God's hand is written all over their design.

For example, clouds form when warm, moist air moves upward from the earth's surface. The rising air expands outward as it enters regions of lower air pressure. The air cools in a processes known as adiabatic expansion. This is similar to how a refrigerator cools by compressing and expanding a confined gas. You cannot see the drops of water because they are too small to see and then they turn into a gas called water vapor. When the water vapor goes higher in the sky, the air becomes colder. Each tiny water droplet produces a small amount of heat as they form. This is known as latent heat. This heat warms the outside of the cloud and stops further droplet formation. If the cloud rises, more water droplet formation may occur.

EXTRA

Watch a short video about the different types of clouds here:
<https://youtu.be/JIkEMBiT6hQ>

JOURNEY THROUGH
THE CREATION ACCOUNT

DAY 2 · GENESIS 1:6-8

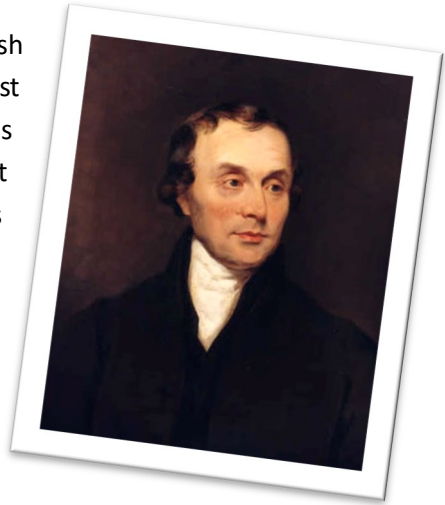
On Day 2 of creation, God separated the water above the earth from the water on the earth, placing the sky between the two.

In verse 6, “God said, ‘Let there be space between the waters, to separate water from water.’ And so it was. God made this space to separate the waters above from the waters below. And God called the space ‘sky.’ This happened on the second day.”

The “space” that is referred to here is no doubt the sky just above our heads, the “space” where the birds dwell. For the first time ever, the earth would have experienced an atmosphere and things like clouds, wind, waves, and evaporation.

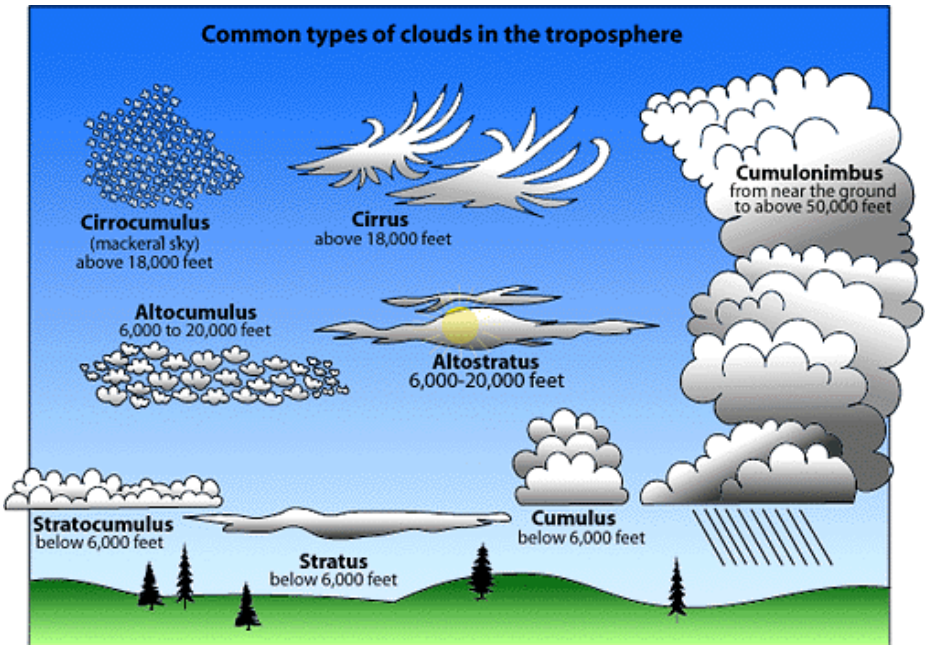
How are Clouds Named?

In 1803, Luke Howard, a British chemist and amateur meteorologist named the basic types of clouds that we observe. He started out by naming three general groups of clouds: High-Level Clouds, Mid-Level Clouds, and Low-Level Clouds. Clouds are also classified by their altitude and ability to create precipitation.



Right: Portrait of Luke Howard, by John Opie (Royal Meteorological Society)

Look at the clouds and take some time to record what kind you see each morning for a week in a notebook.



JOURNEY THROUGH
THE CREATION ACCOUNT

DAY 3 • GENESIS 1:9-13

On the third day God moves to create “dry land” out of the waters. As the creator and therefore the owner of all this, He does the naming. Psalms 24:1 says “The earth is the LORD’s, and everything in it. The world and all its people belong to Him.” When it started, God saw it as “good.” Now there were mountains, valleys, boulders, springs, rivers, waterfalls, caves, beaches, gravel, clay, and sand.

God created the “produce” of the earth. God made the plants in just one day! The creation design is a thing of staggering beauty! Its harmony, one with another, is only the stuff of a Creator and supernatural being. The plants would produce the seed for the next crop, and the fruit would bear the seed for the next tree. God thought that was “good,” too. Since there were plants, the earth, for the first time, contained roots, stems, leaves, grass, pollen, bark, vines, fruits, vegetables, flowers, and more.

What Causes Fog?



Fog is a cloud that forms on the ground. It forms when water vapor, or water in its gaseous form, condenses. During this time, molecules of water vapor combine to make tiny liquid droplets that hang in the air. Fog droplets are a million

times smaller than raindrops and are identical to those present in clouds. Cold air is heavier than warm air and can be found close to the ground in the evening. It can be foggy in the morning when there is cool air as the sun comes up. Fog appears when the air is cooled to its “dew point.” Along coastlines, fog often raises when warm moist air moves across cooler land or water.

Fog is not the same thing as mist. Fog is denser than mist. This means fog is more massive and thicker than mist. There are more water molecules in the same amount of space in a fog. Fog cuts



visibility down to one kilometer, meaning it will prevent you from seeing further away than one kilometer from where you’re standing. Mist can reduce visibility to between one and two kilometers.

JOURNEY THROUGH
THE CREATION ACCOUNT

DAY 4 • GENESIS 1:4-19

Those who attempt to tie the theory of evolution with creation have trouble here. According to the scriptural account, the earth was made on day one and the sun on day four! Evolution, however, pushes the principle that the earth was once part of the sun and was “spun off” at some point. And apparently the light He had been working with up to this point was not radiating from the sun or the moon, as they are just now being created on day four!

God was very careful and precise here. The “arrangements” clearly point to a creator. If not for the design and set up of the sun, moon, night, day, their ratios to each other, etc. all of creation would have perished! If the sun was slightly further away, we would freeze to death; if it was a little closer, we would fry. God was very precise in his measurements here. Night and day begins the earthly concept of time. A beginning and an end, created by a deity that has neither! With the sun came light, heat and warmth, UV rays, sunrises, sunsets, dawn, dusk and even eclipses. God knew that the earth would need the sun to survive.

There was the beauty of the night sky for the first time. Sometimes the moon is full and round and sometimes it is shaped liked a crescent. When the moon appears very thin some people even call it a “toe-nail moon.” Of course the stars are amazing because they are bright and sparkly and even appear to twinkle in the sky.

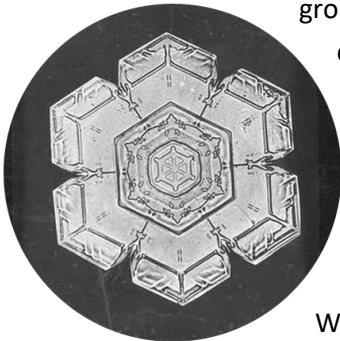
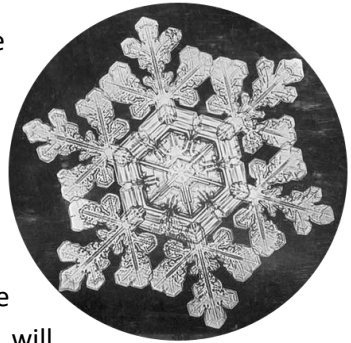
Snowflake Shapes



What gives a snowflake its shape?

The outward form of a snowflake depends on its temperature while being made. Snowflakes with 6 points happen when it is very cold outside. The detailed shape of snowflakes can be partially understood from the chemical bonding mechanism of ice. The sharing of hydrogen atoms between water molecules leads to a flat six-sided “chicken wire” pattern as ice crystals link together and form layers.

Trillions of water molecules are in a single snowflake, and the edges show the inner hexagonal symmetry. The special detail needed for each part of a snowflake is decided by weather conditions. Think back to the lessons on clouds as water freezes and gets closer to the ground. This will



cause changes in the snowflake shape. This truly shows that not only is God a God of order, but that He has specially designed everything around us to work together.

EXTRA

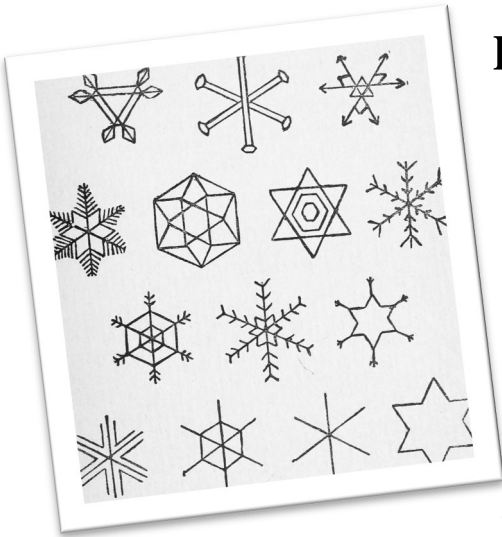
Watch a video about snowflakes here:
snowcrystals.com/videos/j0323r5n-480h.mp4

JOURNEY THROUGH
THE CREATION ACCOUNT

DAY 5 · GENESIS 1:20-23

God created the sea creatures as only a God can. He brought them into existence from nothing. All this was done with His “word.” In the sea there are fish, swimming mammals such as whales and dolphins, as well as sponges, jellyfish, clams, oysters, sea urchins, sea cucumbers, starfish, sea lilies, lobsters, worms, snails, and many more. On Day 5, God created all sorts of birds to fill the skies. When He created birds, He created feathers, beaks, wings and claws.

Unique Snowflakes



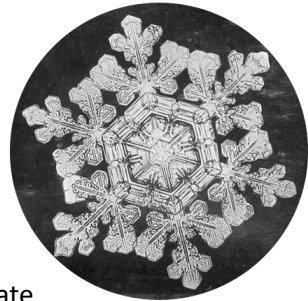
Is every snowflake different?

Every snowflake that has fallen to the ground is different! Since the beginning of Earth's history, there have been a lot of snowflakes that have formed. Like we discovered in

Lesson Five, each snowflake has a unique path to the ground. God designed snowflakes in a way in which they float through different clouds of different temperatures. When it is 23° Fahrenheit, ice crystals look longer in a unique way.

Interesting Facts About Snowflakes

- The types of snowflakes include the needle crystal, columnar crystal, plate crystal, combination of columnar and plate crystals, columnar crystal with extended side planes, rimed crystal, irregular snow crystal, and germ of snow crystal.
- Every snowflake has approximately 200 snow crystals.
- When the temperature is near to freezing point (0° Celsius), snowflakes become much larger and a lot more complex in design.



JOURNEY THROUGH
THE CREATION ACCOUNT

DAY 6 · GENESIS 1:24-25

Think of all of the animals that live on the ground (wild animals and tame animals): amphibians, reptiles, mammals, and even some birds that do not fly. God is amazing because every single kind of animal was His idea and His creation.

On the same day God made the animals, He also made a man. The man was called “Adam.” Adam was different from the animals because, when God breathed life into Adam, God gave him a soul. Adam’s soul gave him the ability to think, love, and worship. Adam could make choices. Adam could talk to God. Adam was a special creation.

God brought all of the animals to Adam and gave him the honor of naming them. But Adam knew that he was different from the animals. God did not want Adam to be lonely. The Bible says that God made them out of the earth. That does not mean that all the animals and men evolved over thousands of years to become what we are today. Scripture gives no place for evolution, and to believe such is to reject the Bible and refuse the biblical account.

Review Questions

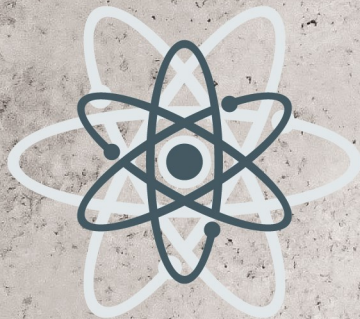
- 1. Describe the process that makes the sky blue.**
- 2. In Lesson 2, we learned about adiabatic expansion. What does this have to do with cloud formation?**
- 3. Describe the process of cloud formation.**
- 4. Draw the six sided snowflake shape from Lesson 6. Describe the significance of the shape.**

DAY 7 · GENESIS 1:26-2:3

God gave His new creation an awesome gift right from the beginning. He gave humans the ability to reproduce—a taste of the joy of producing life—the same joy that He no doubt experienced in those six days! He made man and He made woman—and He blessed them—both of them!

Creation was now finished, complete, and perfect. Evolutionists believe that we are evolving and that the “work is not done.” Such a belief refutes Scripture, goes against the authenticity, and effectively denies the existence and power of God. The two can’t exist side-by-side. Somebody is wrong.

On the Day 7, God rested. It is a comfort to know that God took time to rest from His work; it is a welcome fact! But God did not rest as a man rests. That is not the meaning of the word. God does not get tired nor does He need to take a break. The word “rest” here has in it the ideas of stopping, finishing, and completing. I wonder, was there was a standing ovation in heaven? We do need to rest in the traditional sense even if God doesn’t. Even more than that, though, we too need to sometimes just stop and stand back, and take a look at what we are building and creating.



EXPLORING
CREATION
SCIENCE

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