



Weather Clouds

For the Homeschool Educator

This lesson teaches how clouds are made, types of clouds, and language related to clouds.

About Clouds

Clouds are made up of tiny water droplets, or sometimes of ice crystals. These droplets or crystals are lighter than air, and act similar to a helium balloon. In other words, they don't float. It seems that clouds float because their water droplets are so tiny, and the air molecules that surround them knock them around easily, often in an upward direction. That's because the air in a cloud is usually warmer than the air around it, and warm air rises (as can be seen in the motion of smoke from a fire).

Signs of Readiness

The lesson was designed for children ages 6-8. It is expected that your child will have completed the lesson in this course, Sun, or have equivalent knowledge regarding the nature of weather and the aspects of weather.

Common Misconceptions

Your child might believe that clouds are gases, like air, because they float on air.

Key Vocabulary

Use these definitions to explain key terms that are used in the activities below.

Word or Phrase	Definition
cirrus cloud	"clouds that look a little like feathers stretching across the sky" (see Explore Activity, step 4)
stratus cloud	"a large, flat cloud makes a layer that can cover the whole sky, usually grey" (see Explore Activity, step 4)
cumulus cloud	"a puffy cloud that looks like a cotton ball" (see Explore Activity, step 4)
cumulonimbus cloud	"a large white cloud that reaches up into the sky, which often makes rain and lightning" (see Explore Activity, step 4)
fog	"a cloud that is on or very close to the ground" (see Explore Activity, step 4)



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Lesson Options:

Use the lesson elements below to create a single-day or multiday lesson.

Digital Playlist: Generally, your child will complete the Digital Playlist first, then follow up with some or all of the activities described below. As you select and do these activities with your child, you may wish to reassign some or all of the digital activities for additional practice.

Explore Activity: This follow-up is designed to be used closely with the Digital Playlist to help your child understand the topic.

Dig Deeper Activity: This offline activity provides an additional learning experience with the same topic.

Extend Activity: This offline activity extends your child's understanding and application of the same topic

Note that each type of activity below starts with a question. This is done to model for your child an example of a very important part of scientific thinking, which is to be curious and ask questions. You may wish to share the question at the beginning of each type of activity or at some point during the activity.

Explore Activity

Question

What are some kinds of clouds?

Steps

1. If it has been a day or more since your child last observed and reported on the current weather, have them do so now, using the index cards made in the Explore Activity from the lesson in this course, *What Is the Weather?*
2. Explain to your child that one part of weather is what the sky looks like. Go outside and ask your child to describe what the sky looks like today. Is it sunny, partly cloudy, or overcast (clouds covering all of or almost all of the sky)? Make sure your child understands what the sky would look like in each of those three conditions.
3. Come back inside. Have your child do the jigsaw puzzle *Clouds Cutout*. Teach them to say the names of each type of cloud shown in the puzzle. (If they wonder why **fog** is included as a cloud, you can tell them that **fog** actually is a cloud that is down on the ground instead of in the sky.)
4. Have your child watch the video *Ivan: All About Clouds*. Ask them to tell you what they learned from it.
5. Have your child play the game *Ivan's Cloud Creator*.
6. Make ten cloud cards from five pictures and five descriptions in the *Cloud Cards Resource Page* (cut them out and tape or paste them onto ten index cards). Play a memory match game with your child with the cards. (Memory match: Turn all cards face down, then turn up two. If one has a picture that matches a name and description on the other one, you have a match and can take those two cards off the board. The winner is the person with the most cards at the end of the game.)

Materials

- Ten 3 x 5 index cards
- [Cloud Cards Resource Page](#)



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Modifications

- With **beginning learners**, you may wish to make an easier version of the Memory Match game by making five pairs of identical cards using the pictures only, so that your child just has to match the pictures. You may wish to write the name of the cloud under each picture.

Dig Deeper Activity

Question

What are clouds made of?

Steps

1. If it has been a day or more since your child last observed and reported on the current weather, have them do so now, using the index cards made in the Explore Activity from the lesson in this course, What Is the Weather?

(Note: You may wish to take digital photos of the process of making a cloud in step 8, in case you would like your child to explain it to someone else in step 9.)

2. Make a cloud by following these steps: (It is recommended that you try this yourself first.)
 - a. Warm the jar by filling it with hot water from the tap.
 - b. Heat about a cup of water in a saucepan to the point where it starts to steam.
 - c. While the water is heating, prepare the tray by placing several pieces of ice on top of it.
 - d. Once the water is hot, pour the hot tap water out of the jar and pour the water from the saucepan into it. Immediately light the match and drop it in, then put the cold tray on top of the jar as your child shines the flashlight through the jar at the top. You should see a cloud form.
 - e. If you don't see a cloud, repeat steps a through c, but instead of dropping in a match, spray a little bit of hair spray into the jar, then immediately place the cold tray on top of it.
3. Discuss the "make a cloud" demonstration with your child, covering these ideas: From the previous lesson they should remember that water molecules will go into the air (evaporate) in the jar from the hot water, so there will be many of those molecules in the air. The match (or hair spray) provides tiny particles that the molecules can stick to, which causes them to form many very tiny drops. The drops are too small to see, but there are so many of them that they reflect white light, and so the white cloud appears.
4. (Optional) Invite your child to use the digital photos of step 2 to explain to another family member or friend how it shows what clouds are made of

Materials

- Glass jar
- Baking pan or similar metal tray
- Ice
- Hot water
- A match
- Aerosol hair spray
- Flashlight



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Modifications

- Advanced learners can print out the photos and make a poster that explains how clouds are made.

Extend Activity

Question

How can we describe clouds?

Steps

1. If it has been a day or more since your child last observed and reported on the current weather, have them do so now, using the index cards made in the Explore Activity from the lesson in this course, What Is the Weather?
2. Have your child assemble the jigsaw puzzle Cloudy. Read the short poem together.
3. Print out the Draw and Write: Clouds Resource Page. Invite your child to create and color a drawing and write some words or a sentence to describe the picture they made.
4. Print out the Cloud Word Search Resource Page and help your child find the words.

Materials

- Draw and Write: Clouds Resource Page
- Cloud Word Search Resource Page

Modifications

- In the word search, help **beginning learners** first choose the word that is the answer to each clue, then find the word in the area with letters.

Our activities are designed to be safe with adult supervision. Please follow directions carefully.