

Heads up! Students become cloud experts before making custom clouds, complete with weather predictions!

Learning Objectives

Students will identify and describe cloud types through a fill in the blank chart and create-a-cloud activity.

Materials and preparation

- Cloud Chart worksheet
- Blue construction paper
- Jumbo cotton balls, large bag
- Pitcher of water
- White and grey chalk

Key terms

- cirrus
- alto
- stratus
- cirrocumulus
- cirrostratus
- altostratus
- nimbostratus
- stratocumulus
- altocumulus
- cumulus
- cumulonimbus
- anvil cloud/ cumulonimbus Top

Attachments

- Cloud Chart (PDF)

Introduction (5 minutes)

- Hold up a cotton ball and describe it as fluffy and soft. Ask students to respond with a thumbs up or down to indicate their response to the question: Are clouds fluffy and soft, too?
- Explain that though they may look fluffy and soft, clouds are actually made of teeny tiny drops of water that are so small they can float in the air. As long as the cloud and the air that it's made of are warmer than the air around it, it floats.
- Stretch another cotton ball into an elongated shape and add that clouds have different shapes and sometimes colors. The shapes and colors can help us predict the weather.
- Pick up another cotton ball and hold it up high, then towards your middle, then to your shoes as you explain the high cloud group as **cirrus** the middle cloud group as **alto** and the low clouds group as **stratus**.
- Announce that we will learn to be cloud scientists today as we learn how to identify and even create our own clouds.

Explicit Instruction/Teacher modeling (15 minutes)

- Project the second page of the Cloud Chart and ask student volunteers to find all of the cirrus, then alto, then stratus type clouds.
- Prompt students to realize the connection of the terms high-cirrus, middle-alto, low-stratus method of

finding the clouds.

- Point out the miles side of the chart and show that clouds start from one mile and go up to almost nine miles. Point out that fog is so low that sometimes we can't see very well since it only rises a few feet off of the ground.
- Point to and add features of each type of cloud and explain that since we have categorized the clouds, now we will describe them.
- **Cirrus clouds:** These are made of ice and are blown by the wind into long lines that are sometimes described as looking like horse's tails. They happen in fair weather in a mostly clear sky and point in the direction of the wind.
- **Cirrocumulus:** These are also made of ice crystals. They look like crinkly rows that some people think look like fish scales. They usually occur in the winter and indicate cold but fair weather.
- **Cirrostratus:** Also made of crystals, this cloud type is almost see through. The sun and moon can be seen behind them. They have a halo-like or hair-like appearance. When you see them rain or snow is headed your way within 12 to 24 hours.
- **Altostratus:** Like the cirrostratus clouds, altostratus clouds that are thin are almost see-through, but are darker in color. Thick altostratus are not at all transparent, or see through. Sometimes the thick altostratus can produce light rain, and can thicken into a nimbostratus cloud.
- **Nimbostratus:** These clouds a dark gray and usually happen with a persistent rain or snow period.
- **Stratocumulus:** These gray clouds hang low in the sky and look lumpy with streaks of clear sky in between. It usually doesn't rain with these clouds, but they can turn into rain clouds (nimbostratus).
- **Alto cumulus:** Like stratocumulus clouds, these clouds look lumpy, but they are bigger puffs and are bunched together higher in the sky. If it is a warm morning, thunderstorms will probably occur before dark.
- **Cumulus:** These are the fluffy, cotton ball type clouds that are sometimes called "fair-weather clouds." But they can grow tall and become giant cumulonimbus clouds, which indicate thunderstorms ahead.
- **Cumulonimbus:** The name nimbus means rain. It is a bigger version of the cumulus cloud, which it may have started out as. These clouds can get up to 6 miles high and usually happen in severe thunderstorm weather.
- **Anvil cloud/ Cumulonimbus Top:** This is a cumulonimbus cloud that has a top that looks like a huge pile of hair that's flat on the top. It can also be said to have a top that is called an anvil, which is a heavy iron block with a smooth flat top. These clouds are associated with thunderstorms with lightning and high winds likely.

Guided Practice (10 minutes)

- Distribute the Cloud Chart worksheet and give directions.
- Review the answers with the whole class on the projected image of page 2 of the worksheet.
- If needed, leave the projected image up as a resource, but remove it before independent working time.
- Rotate around the room to check for understanding.

Independent working time (10 minutes)

- Distribute blue construction paper, cotton balls, and chalk and allow students to use the items to create and label a cloud of their own.
- Ask students to think about what kind of weather is likely with the cloud they create and to be ready to tell what that weather is.

Related books and/or media

- **WEBSITE:** [Weather Wiz Kids: Clouds](http://www.weatherwizkids.com/clouds)

Differentiation

- **Enrichment:** Challenge students to create alternate descriptive cloud names for the cloud types.
- **Support:** Reduce the amount of labels required on the guided practice activity. Allow students to have more time to study the cloud chart before doing the worksheet.

Assessment (10 minutes)

- Have students share their cloud pictures with labels and the likely weather associated with it.
- Collect the worksheets and cloud pictures and assign a percentage grade.

Review and closing (10 minutes)

- Say a cloud name and ask students to choral-respond with where in the sky it might be found (high, middle, or low) and what kind of weather is likely to occur with it.
- If possible, take children outside to name clouds by scientific names.

Cloud Chart

9 miles 14.5 km

8 miles 12.9 km

7 miles 11.3 km

6 miles 9.7 km

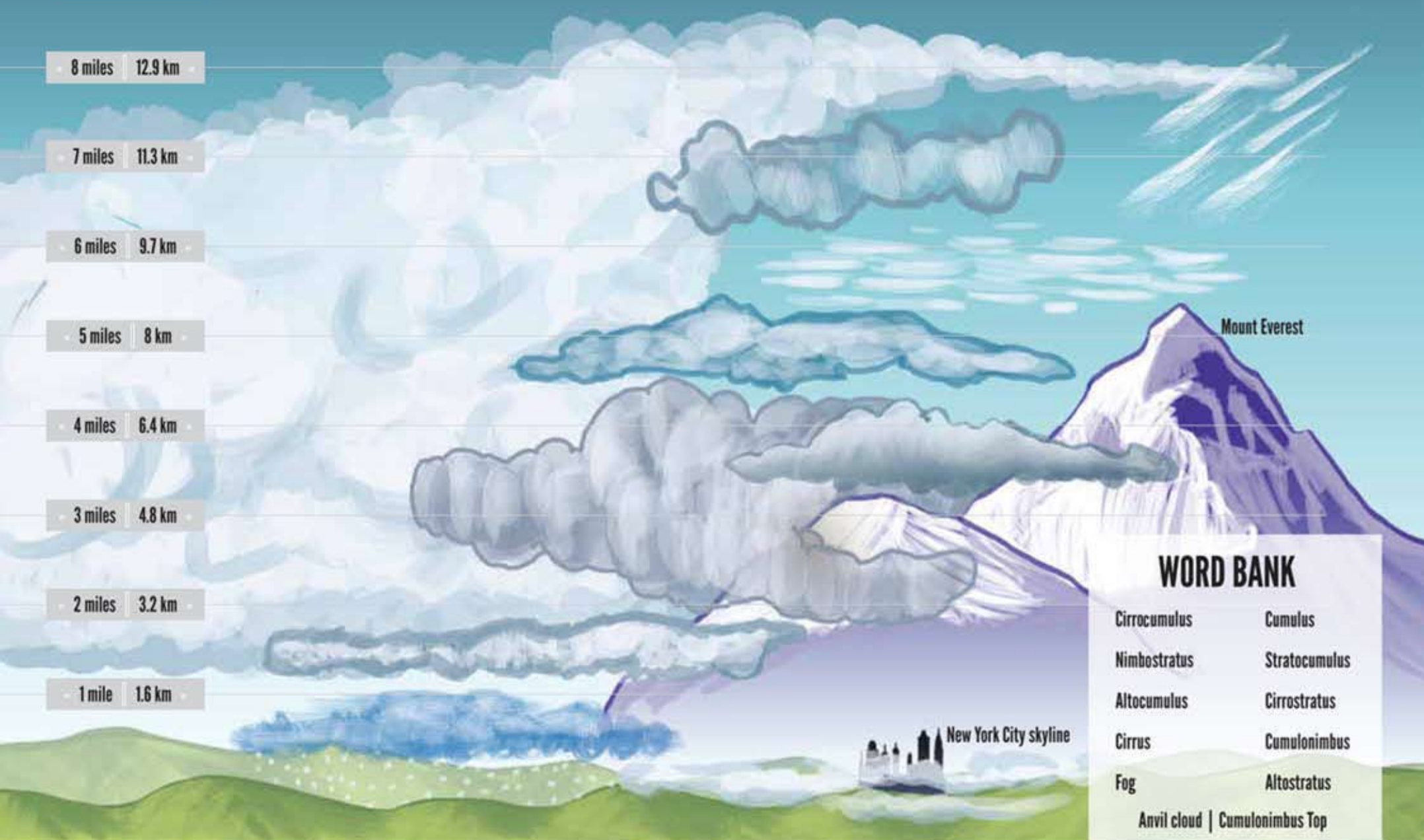
5 miles 8 km

4 miles 6.4 km

3 miles 4.8 km

2 miles 3.2 km

1 mile 1.6 km



Mount Everest

New York City skyline

WORD BANK

- | | |
|--------------------------------|---------------|
| Cirrocumulus | Cumulus |
| Nimbostratus | Stratocumulus |
| Alto cumulus | Cirrostratus |
| Cirrus | Cumulonimbus |
| Fog | Altostratus |
| Anvil cloud Cumulonimbus Top | |



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Cirrocumulus

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Mount Everest

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Alto cumulus

Cumulus

Stratocumulus

Nimbostratus

Fog

New York City skyline

WORD BANK

Cirrocumulus

Cumulus

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