

My NASA Data - Lesson Plans

Cloud Teller



Purpose

Use your Cloud Teller to practice vocabulary, learn different cloud types, and help with NASA GLOBE cloud observations.

Why Does NASA Study This Phenomenon?

Clouds are an important part of our atmosphere, and scientists are studying how they affect our weather and climate. Clouds affect our overall temperature or energy balance of the Earth and play a large role in controlling the planet's long-term climate. Satellite instruments, as well as your ground observation, provide one more piece of the puzzle.

Materials Required

Cloud Teller PDF (color preferred)

Technology Requirements

- Standalone Lesson (no technology required)

Teacher Background Information

Accurate weather forecasting starts with careful and consistent observations. The human eye represents one of the best (and least expensive) weather instruments. Much of what we know about the weather is a result of direct human observation conducted over thousands of years. Although being able to identify clouds is useful in itself, observing clouds on a regular basis and keeping track of the weather associated with certain kinds of clouds will show students the connection between cloud types and weather. Recognizing cloud types can help you predict the kind of weather to expect in the near future. We do not describe those connections here, but there are numerous weather books that can help you and your students make them. Inviting a local meteorologist to visit your class and to talk with the students is a sure way to stimulate interest in the relationship between clouds and weather patterns.

The names used for the clouds are based on three factors: their shape, the altitude at which they occur, and whether they are producing precipitation.

1. Clouds come in three basic shapes:

- cumulus clouds (heaped and puffy)
- stratus clouds (layered)
- cirrus clouds (wispy)

2. Clouds occur in three altitude ranges (specifically, the altitude of the cloud base):

High clouds (above 6,000 m), designated by “cirrus or cirro-”

- **Cirrus**
- Cirrocumulus
- Cirrostratus

Middle clouds (2,000 - 6,000 m), designated by “alto-”

- **Alto**cumulus

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- Altostratus

Low clouds (below 2,000 m), no prefix

- Stratus
- Nimbostratus
- Cumulus
- Stratocumulus
- Cumulonimbus

Note: While both cumulus and cumulonimbus clouds may have their bases starting below 2,000 m, they often grow thick enough to extend into the middle or even high range. Thus, they are often referred to as “clouds of vertical development.” Only high clouds are wispy and so the term cirrus has become synonymous with wispy as well as referring to high clouds.

Procedure

How to fold your Cloud Teller:

1. Cut out the Cloud Teller Square on the solid black lines (fold on the dashed lines, cut on the solid lines).
2. Place the cloud teller face down on the table. You should see no writing or pictures.
3. Fold the Cloud Teller in half, bottom to top, and unfold. Now fold the Cloud Teller in half, right to left, and unfold it again. You should see 4 smaller, equal sized squares on the paper in front of you.
4. Fold all the corners in to the center point. You should have a smaller square with the cloud cover amounts and numbers facing you.
5. Flip the Cloud Teller over, you should see the different cloud types. Fold all the corners to the center point again. You should have a smaller square with numbers one through eight facing you.
6. Fold the Cloud Teller in half, bottom to top, and unfold. Now fold the Cloud Teller in half, right to left, and unfold it again.

How to use your Cloud Teller:

1. Place the Cloud Teller, numbers up and try to bring the four corners together in the air, pockets should be forming on the underside of your Cloud Teller.
2. Put your Thumbs in the 2 pockets closest to you and your index fingers in the pockets furthest from you.
3. Open and pinch your fingers together to move the Cloud Teller, pull your pinched fingers apart, right and left, as well.

4. The goal is to get to a cloud in the center of the Cloud Teller, Ask a partner to pick a word on the outside of the Teller when it is closed, move the Teller in rhythm to each letter while spelling the word they picked out loud. Let your partner chose a number, do the same movements while counting aloud. Let them pick a number once more, lift the number to reveal a cloud underneath.

Extensions

Check out the GLOBE resources below:

- [Teacher's Guide - Clouds](#)
- [On-line Cloud Chart](#)
- [Activities](#)