

Clouds and Weather

By Cindy Grigg

When you are outside on a very cold day, what happens when you exhale (breathe out)? Your breath makes a small cloud, doesn't it? Your breath has water vapor in it. When warm water vapor is cooled by the colder air outside, it changes into tiny water droplets. It makes a little cloud from your breath. Big clouds in the sky are made the same way.

Water vapor is invisible. It is a part of the air around us. When water vapor is cooled, it changes from a gas back into water. Tiny drops of water in the sky clump together. That is what clouds are. When millions and millions of water droplets gather together, clouds get bigger and bigger. The drops of water get bigger and bigger. They get too heavy to stay up in the clouds. They fall back to earth. We have rain!



On some days in the early morning, water vapor cools very close to the ground. You can see sparkling drops of water on the grass. This is called dew.

On very cold mornings, we don't see dew. We see frost! The water vapor has frozen on the grass.

Sometimes, we have clouds on the ground. This is called fog. Fog forms when warm, wet air near the ground cools. The water vapor in the air forms tiny water droplets. Everything looks gray. It is hard to see very far ahead. You are walking around inside a cloud!

We can learn about clouds to know what the weather may bring.

When a moving warm air mass meets a cold air mass, we have a warm front. The warm air is lighter than cold air so it floats above it. High cirrus (SIR-rus) clouds appear. These clouds look like white swirls of dust left behind when someone swept the sky. They are thin and wispy. Some people think they look like curls of hair. They are very high up in the sky. Cirrus clouds mean fair weather.

Next, altocumulus clouds appear. People say we have a "mackerel sky" because these clouds look like scales on a fish. Altocumulus clouds thicken and make altostratus clouds. These clouds are dark and gray. They hide the sun. Rain or snow falls from altostratus clouds as they get more and more water vapor in them. The whole cycle from clear weather to rain may take less than one day but usually two to three days. After it rains for a few hours or days, the clouds break up. The sun appears. The weather will be warm and humid.

When a moving cold air mass pushes into a warm air mass, we have a cold front. The fast-moving cold air scoops in under the lighter, warmer air, causing it to rise. Dark and thick clouds called cumulonimbus (KEW-mew-low-NIM-bus) clouds are formed. They are a sign that bad weather is on the way. These clouds are sometimes called thunderheads. They are very tall and sometimes flatten out on top to look like an anvil. These clouds usually bring lightning and heavy rain. Hailstorms may occur or tornadoes may form.

This type of front usually moves through quickly. Then the rain stops, the sky clears, and dry, cool weather follows. In the wintertime, the cold front may bring a snowstorm or blizzard. After the storm, calm, crisp cold air and bright sunny days usually follow.

Be a cloud watcher. Keep a journal and write down what type of clouds you see. Then see what kind of weather follows in the next day or two. Over time, you should be able to forecast the weather by watching for certain types of clouds.

Name _____



Date _____

Clouds and Weather

Questions

- _____ 1. What happens when warm water vapor is cooled by colder air?
- A. It makes frost.
 - B. It changes into tiny water droplets.
 - C. It causes a warm front.
 - D. It causes a cold front.
- _____ 2. What is water vapor?
- A. It is a gas.
 - B. It is part of the air around us.
 - C. It is invisible.
 - D. all of the above
- _____ 3. Clouds that form near the ground are called _____.
- A. fog
 - B. thunderheads
 - C. dew
 - D. frost
- _____ 4. A warm front will first form which type of clouds?
- A. cumulonimbus
 - B. mackerel
 - C. altostratus
 - D. cirrus
- _____ 5. Which type of clouds is a sign that thunderstorms are on the way?
- A. cumulonimbus
 - B. cirrus
 - C. mackerel
 - D. altostratus
- _____ 6. Which type of cloud is very tall and may flatten out on top?
- A. altostratus
 - B. mackerel
 - C. cirrus
 - D. cumulonimbus
- _____ 7. A "mackerel sky" is made by which type of cloud?
- A. altocumulus
 - B. altostratus
 - C. cirrus
 - D. cumulonimbus

