

Basic Weather

Condensation occurs when water changes from a lighter state (vapor or water droplets) to a denser state (like rain or snow), usually because of a drop in temperature.

Evaporation occurs when heat, usually from the sun, causes liquid water to turn into water vapor. The water vapor rises and is changed by condensation into precipitation when the vapor grows cooler.

Precipitation occurs when vapor (gaseous water) condenses and falls to Earth. Precipitation can refer to rain, snow, hail, or sleet. **Rain** happens when the water droplets that form clouds join with other water droplets to form bigger droplets that are heavy and fall to the ground. **Snow** is ice crystals (frozen droplets of water) that are microscopic, hexagonal pieces of ice. Snow is formed the same way as rain but in higher-altitude clouds where ice crystals join with other ice crystals to form snowflakes.

Frost is water vapor that has turned to ice. **Sleet** is created when snow melts a little as it falls, so that it becomes a mixture of snow and rain. When the mixture passes through cold air, it freezes again to form sleet. Sleet is sometimes called **freezing rain**.

Hail is formed inside a cloud when falling ice crystals are forced upward again by strong currents in the cloud. The ice crystals pick up water that freezes onto them. This falling and rising happens many times, so many layers of ice form, like the layers of an onion, to create hail, which eventually falls to the surface because of its weight.

Dew is moisture that condenses on the surface of anything that is cooler than the air around it. Dew usually forms at night. The transpiration of plants can also create dew.

Fog and mist are similar to each other. Fog is thicker than mist, but both are formed when clouds at ground level fill the air with tiny water droplets that are difficult to see through. **Mist** and fog often happen when moist air is cooled by moving over the land or water. Both are formed in the same way clouds are formed: Moist air cools and then condenses into water droplets.

Rainbows are formed when the sun's rays hit raindrops. The rays split into a spectrum of colors (from red to violet) to form a circular spectrum. Although a rainbow is circular, only the top half can be seen from Earth's surface.

Answer the Following

1. What is the difference between condensation and precipitation? _____

2. Give two examples of precipitation. _____
3. What is the difference between fog and mist? _____
4. How do rainbows form? _____

