




**Lesson 3:**  
**Air Masses**

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**What is an Air Mass?**

**Air masses are large areas of air with similar temperature, humidity, and pressure.**



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**Warm moist air masses form near the equator in tropical regions.**

**Cold dry air masses form near the polar regions.**

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**Air masses can be affected by warm and cool bodies of water and by the land that they travel over.**



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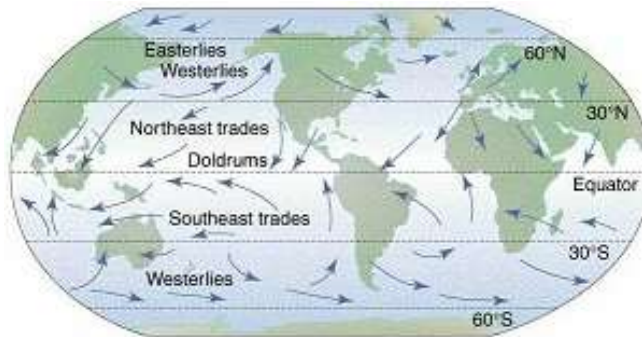
## How do air masses move?

Wind is the movement of air. Currents of wind move air masses around Earth.

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## Wind Currents

Wind currents are identified based on the direction that they are blowing from.



Prevailing Westerlies are wind currents moving from west to east that move air masses across the United States.

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# The Jet Stream

The Jet Stream is a narrow, fast-moving westerly wind current that pushes air masses across the United States and affects the weather of the entire country.



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## Discovery Education Video:

### Air Masses

Cold air is heavier than warm air and is higher in pressure. An air mass is a large amount of air with similar temperature and humidity.

Warm, moist air masses form in the tropics, and cold, dry air masses form near the poles.

Movements of air masses are seldom in a straight line and are affected by many things.



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## Clouds

Clouds are collections of condensed water vapor in Earth's atmosphere.

Clouds move with the air masses that they are part of.

The type of clouds in an air mass can indicate weather conditions.

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## Cirrus Clouds

Very high altitude clouds (18,000+ feet) that are made up mostly of ice. They thin, wispy clouds that usually predict fair weather.



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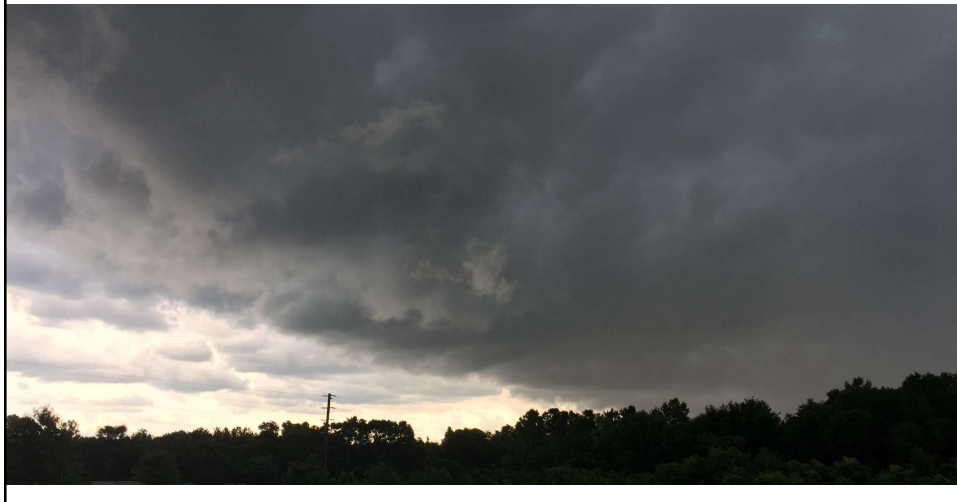
## Stratus Clouds

Gray uniform clouds that will often cover the entire sky. They will often produce precipitation.

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## Nimbostratus Clouds

Dark gray, wet-looking clouds that will often produce continuously falling rain or snow.



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## Cumulus Clouds

White, puffy clouds that look like pieces of cotton. These clouds indicate fair weather, but can grow upward and develop into storm clouds.



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## Cumulonimbus Clouds

Thunderstorm clouds that are often associated with heavy rain, snow, lightning, and sometimes tornadoes.



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## Alto cumulus Clouds

Gray puffy clouds that are made up of water droplets and usually appear in large groups. These clouds in the morning can indicate thunderstorms later in the day.



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## Discovery Education Video:

### Types of Clouds

Clouds are condensed water vapor that comes in many forms. Identifying clouds can help you forecast the weather.



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## **Discovery Education Video: Clouds and Patterns of the Weather**

Cloud types and patterns have long been used to predict the weather. Even with today's space age technology, meteorologists rely heavily on interpreting the images of cloud patterns provided by orbiting satellites. This dramatic video reviews how clouds are formed, illustrates different types of clouds, and explains what these different types indicate in terms of weather patterns.



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## **Air Masses: Key Questions**

- 1. What is an air mass? How do air masses get their characteristics?**
- 2. What is the importance of wind currents? Which wind currents have a major effect on our weather?**
- 3. What can clouds tell us about weather conditions and weather forecasting?**

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