

Air masses are large bodies of air.

You have probably experienced the effects of air masses—one day is hot and humid, and the next day is cool and pleasant. The weather changes when a new air mass moves into your area. An **air mass** is a large volume of air in which temperature and humidity are nearly the same in different locations at the same altitude. An air mass can cover many thousands of square kilometers.

An air mass forms when the air over a large region of Earth sits in one place for many days. The air gradually takes on the characteristics of the land or water below it. Where Earth's surface is cold, the air becomes cold. Where Earth's surface is wet, the air becomes moist. As an air mass moves, it brings its temperature and moisture to new locations.

CHARACTERISTICS OF AN AIR MASS

Some regions of Earth's surface produce air masses again and again. The characteristics of an air mass depend on the region where it forms. A hot desert produces dry, hot air masses, while cool ocean waters produce moist, cool air masses. Scientists classify air masses into categories according to the characteristics of regions. Each category name is made of two words—one for moisture, one for temperature.

The first word of an air mass's category name tells whether the air mass formed over water or dry land. It describes the moisture of the air mass.

- **Continental** air masses form over land. Air becomes dry as it loses its moisture to the dry land below it.
- **Maritime** (MAR-ih-tym) air masses form over water. Air becomes moist as it gains water vapor from the water below it.

The second word of a category name tells whether an air mass formed close to the equator. It describes the air mass's temperature.

- **Tropical** air masses form near the equator. Air becomes warm as it gains energy from the warm land or water.
- **Polar** air masses form far from the equator. Air becomes cool as it loses energy to the cold land or water.

The combination of words gives the characteristics of the air mass. A maritime tropical air mass is moist and warm, while a continental polar air mass is dry and cold.

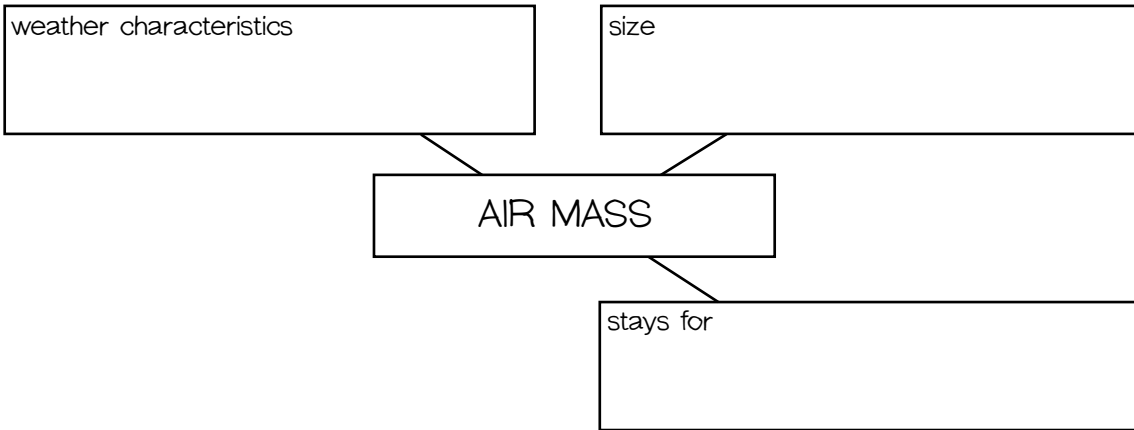
MOVEMENT OF AN AIR MASS

Air masses can travel away from the regions where they form. They move with the global pattern of winds. In most of the United States, air masses generally move from west to east. They may move along with the jet stream in more complex and changing

patterns.

When an air mass moves to a new region, it carries along its characteristic moisture and temperature. As the air moves over Earth's surface, the characteristics of the surface begin to change the air mass. For example, if a continental polar air mass moves over warm water, the air near the surface will become warmer and gain moisture. These changes begin where the air touches the surface. It may take days or weeks for the changes to spread upward through the entire air mass. An air mass that moves quickly may not change much. If it moves quickly enough, a continental polar air mass can move cold air from northern Canada all the way to the southern United States.

1. Fill in the boxes about any air mass.



2. Fill in the chart to show characteristics of the surface where different types of air masses form.

	Tropical	Polar
Continental		
Maritime		

3. What happens to an air mass when it comes to a new region?
