

Name _____ Date _____ # _____

AIR

Learning Goal: You will learn that air has weight and what causes wind.

The atmosphere is like a big ocean of air that surrounds the earth. It is made up of several layers. We live in the layer called the troposphere. Weather happens in the troposphere. The other layers are the stratosphere, the mesosphere, and the thermosphere. The layers stack one on top of the other. The higher you go, the colder it gets, however, the highest layer, the thermosphere, is very hot.

You can't see air, but air does have weight and takes up space. Air starts at the top of the atmosphere and presses down on the earth - this is called air pressure. The weight of the air pressing down on the earth can be measured with an instrument called a barometer.

When cool air and warm air meet, it causes wind. The movement of the wind is called air currents. When a cold air mass moves in, it pushes the warm air mass away. Meteorologists (scientists who study the weather) call this a cold front. Weather is caused by cold air currents and warm air currents moving around the earth.

You might hear that a low pressure system is moving in, it means that warm air is coming your way. Warm air doesn't weigh as much as cold air, therefore it can move faster, causing it to rise up. Cold air is heavy, causing it to sink. When a high pressure system is moving in, it means that a cold front is coming.

1. The word atmosphere means -
 - a. several layers of air that surround the earth
 - b. the clouds in the sky
 - c. how the air moves around
 - d. how weather happens

2. We live in the layer of the atmosphere called the -
 - a. stratosphere
 - b. troposphere
 - c. thermosphere
 - d. mososphere

3. In which layer of the atmosphere does weather happen?
 - a. stratosphere
 - b. mesosphere
 - c. troposphere
 - d. thermosphere

4. Air pressure is -
 - a. cold fronts moving in from the north
 - b. cold air masses pushing out warm air masses
 - c. the weight of the air pressing down on the earth
 - d. a high pressure system bringing in a warm front

5. A barometer is -
 - a. a scientist who studies the weather
 - b. where weather happens in the troposphere
 - c. the movement of the air currents
 - d. an instrument that measures the air pressure

6. Air currents are -
 - a. the movement of cold and warm winds
 - b. a big ocean of air that surrounds the earth
 - c. cold air masses that bring winter weather
 - d. air pressure that presses down on the earth

7. Weather is caused by -

- a. the cold air that rises up
- b. warm air currents and cold air currents moving around the earth
- c. low pressure system that is moving in, and is causing the cold air to rise
- d. high pressure system that is moving out, and is causing the hot air to rise

8. Meteorologists are -

- a. instruments that measures air pressure
- b. scientists that study the weather
- c. a big ocean of air that surrounds the earth
- d. the weight of the air pressing down on the earth

9. Because cold air is heavy -

- a. it rises up
- b. it moves fast
- c. it sinks down
- d. it moves out

10. A low pressure system moving in means -

- a. a cold front is moving in
- b. a warm from is moving in
- c. hot and cold air is meeting
- d. air currents are rising in the stratosphere

11. A high pressure system moving in means -

- a. a cold front is moving in
- b. a warm from is moving in
- c. hot and cold air is meeting
- d. air currents are rising in the mesosphere

12. Wind is caused by -

- a. a high pressure system
- b. a low pressure system
- c. the layers of air stacked on each other
- d. the meeting of cool air and warm air