

**Note-taking  
Worksheet**

# Weather

## Section 1 What is weather?

- A. **Weather** is the state of the \_\_\_\_\_ at a specific time and place.
1. Includes such conditions as air pressure, wind, \_\_\_\_\_, and moisture in the air.
  2. The \_\_\_\_\_ evaporates water into the atmosphere forming clouds and returning the water to Earth as rain or snow; the Sun also \_\_\_\_\_ air.
  3. Temperature is a measure of \_\_\_\_\_ movement.
    - a. The Sun's energy causes air molecules to move rapidly; temperatures are \_\_\_\_\_ and it feels \_\_\_\_\_.
    - b. When less of the Sun's energy reaches air molecules, they move less rapidly and it feels \_\_\_\_\_.
  4. Wind—air moving in a \_\_\_\_\_
    - a. As the Sun heats air, it expands, becomes less \_\_\_\_\_, rises, and has \_\_\_\_\_ atmospheric pressure.
    - b. Cooler air is \_\_\_\_\_ and sinks, causing \_\_\_\_\_ atmospheric pressure.
    - c. Air moves from \_\_\_\_\_ pressure areas to \_\_\_\_\_ pressure areas, causing wind.
  5. **Humidity**—the amount of \_\_\_\_\_ in the air
    - a. Warmer air can hold \_\_\_\_\_ water vapor, tending to make it more humid.
    - b. **Relative humidity**—the amount of water vapor in the air compared to what it can hold at a \_\_\_\_\_ temperature
    - c. When air cools, it can't hold as much water vapor, so the water vapor \_\_\_\_\_ to a liquid or forms ice crystals.
    - d. \_\_\_\_\_—the temperature at which air is saturated and condensation forms

## Note-taking Worksheet (continued)

B. Clouds form as \_\_\_\_\_ air is forced upward and cools. Then the water vapor condenses in tiny droplets that remain suspended in the air.

1. The shape and height of clouds vary with temperature, pressure and the \_\_\_\_\_ in the atmosphere.

2. Shape

a. \_\_\_\_\_—smooth, even sheets or layers at low altitudes

b. \_\_\_\_\_—puffy, white clouds, often with flat bases

c. \_\_\_\_\_—high, thin, white, feathery clouds made of ice crystals

3. Height

a. \_\_\_\_\_—high clouds

b. \_\_\_\_\_—middle-elevation clouds

c. \_\_\_\_\_—low clouds

4. \_\_\_\_\_ clouds are dark and so full of water that sunlight can't penetrate them.

C. **Precipitation**—\_\_\_\_\_ falling from clouds

1. When water droplets in clouds combine and grow large enough, precipitation falls to Earth

2. Air \_\_\_\_\_ determines whether the droplets form rain, snow, sleet, or hail.

## Section 2 Weather Patterns

A. Because \_\_\_\_\_ and \_\_\_\_\_ move in the atmosphere, weather constantly changes.

1. **Air mass**—a large body of air with properties like the part of \_\_\_\_\_ over which it formed

2. Stormy weather is associated with \_\_\_\_\_ pressure areas.

3. Fair weather is associated with \_\_\_\_\_ pressure areas.

4. Air pressure is measured by a \_\_\_\_\_.

B. **Front**—a \_\_\_\_\_ between two different air masses

1. Clouds, precipitation, and \_\_\_\_\_ occur at frontal boundaries.

2. Cold front—where \_\_\_\_\_ air advances under \_\_\_\_\_ air

3. Warm front—where \_\_\_\_\_ air advances over \_\_\_\_\_ air

4. \_\_\_\_\_ front—involves three air masses of different temperatures

5. \_\_\_\_\_ front—air masses and their boundaries stop advancing

**Note-taking Worksheet** (continued)**C. Severe weather**

1. Thunderstorms occur along warm, moist air masses and at \_\_\_\_\_.
  - a. Warm, moist air is forced rapidly upward, where it cools and \_\_\_\_\_.
  - b. Strong updrafts of warm air and sinking, rain-cooled air cause strong \_\_\_\_\_.
2. Lightning
  - a. Movement of air inside a storm cloud causes parts of the cloud to become \_\_\_\_\_.
  - b. Current flows between the regions of opposite electrical charge, forming a \_\_\_\_\_.
3. Thunder—lightning \_\_\_\_\_ the air, causing it to expand rapidly and then contract, forming sound waves
4. \_\_\_\_\_—a violent, whirling wind that moves in a narrow path over land
5. \_\_\_\_\_—a large, swirling, low-pressure system that forms over tropical oceans
6. **Blizzard**—a winter storm with strong winds, cold temperatures, and low visibility, that lasts more than \_\_\_\_\_ hours.

**D. Severe weather safety**

1. A National Weather Service \_\_\_\_\_ means conditions are favorable for severe weather to develop.
2. A \_\_\_\_\_ means that severe weather conditions already exist.

**Section 3 Weather Forecasts**

- A. \_\_\_\_\_ study and predict the weather.
- B. The National Weather Service makes \_\_\_\_\_.
  1. \_\_\_\_\_ show weather conditions at a specific location.
  2. **Isotherms** are lines on a weather map connecting points of equal \_\_\_\_\_.
  3. **Isobars** are lines on a weather map that connect points of equal atmospheric \_\_\_\_\_.
  4. Weather fronts move from \_\_\_\_\_ to \_\_\_\_\_.