

Earth Science Chapter 17: Air Masses and Fronts

*Fill in the table below and then answer the question. Answers that cannot be read will be counted as incorrect.*

Types of Air Masses	Definition	Weather they bring
	Cool, humid air masses form over the icy cold North Pacific and North Atlantic oceans	
Continental Polar		In the winter, they bring clear, cold, dry air and in the summer, they cause storms when they collide with maritime tropical air masses
	Warm, humid air masses form over tropical oceans	
Continental Tropical		Bring hot, dry weather to the southern Great Plains

What are the types of fronts?

- 1.
- 2.
- 3.
- 4.

Earth Science Chapter 17: Storms

*Answer the following questions. Answers that cannot be read will be counted as incorrect.*

1. What is a thunderstorm? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. When does flooding occur? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. What is a tornado? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. How do tornadoes form? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. What are hurricanes? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. What is the difference between “hurricane watch” and a “hurricane warning”? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. What is lake-effect snow? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Earth Science Chapter 17: Predicting the Weather

*Circle the correct answer. Answers that cannot be read will be counted as incorrect.*

1. What is a meteorologist?
  - a. a scientist that studies how much rainfall the Amazon rainforest gets each year
  - b. a scientist that studies the causes of weather and tries to predict it
  - c. a scientist that studies the rotation of the earth and its effect on wind patterns
  - d. a scientist that studies how airplanes fly
  
2. Where does most weather information come from?
  - a. The National Weather Service
  - b. Environmental Protection Agency
  - c. The Weather Channel
  - d. The FBI
  
3. What technology carries instruments high into the troposphere and lower stratosphere to measure temperature, air pressure and humidity?
  - a. automated weather stations
  - b. weather satellites
  - c. weather balloons
  - d. computer forecasts
  
4. What are lines joining places on the map that have the same air pressure?
  - a. cold fronts
  - b. warm fronts
  - c. snow storms
  - d. isobars
  
5. What are isotherms?
  - a. lines joining places that have the same temperature
  - b. dashed lines that show changes in elevation
  - c. lines that show the front of an air mass
  - d. lines that represent the boundaries between states

## Earth Science Chapter 17: Study Guide

### Section 1

- Vocabulary

Air mass

Maritime

Occluded

Tropical

Continental

Cyclone

Polar

Front

Anticyclone

- Know how scientists classify air masses
- Know the four main types of air masses that influence the weather of North America and what kind of weather they bring
- Know how air masses move
- Know what happens when air masses collide
- Know the four types of fronts, how they form and what weather occurs there
- Know what cyclones and anticyclones are, how they form and what weather they cause

### Section 2

- Vocabulary

Storm

Tornado

Evacuate

Thunderstorm

Hurricane

Lightening

Storm surge

- Know what thunderstorms are, how they form and what damage they can do
- Know some of the effects of thunderstorms such as lightening, thunder and flooding
- Know what tornadoes are, how they form and what damage they can do
- Know what Tornado Alley is and why it is called that
- Know what hurricanes are, how they form and what damage they can do
- Know how hurricanes move
- Know what winter storms are, how they form and what damage they can do
- Know what lake-effect snow is and where in the US it is found
- Know the best ways to remain safe during thunderstorms, tornadoes, hurricanes and winter storms
- Know the difference between a “watch” and a “warning”
- Know the timeline on pages 590-591

### Section 3

- Vocabulary

Meteorologist

Isobar

Isotherm

- Know who studies the causes of weather and tries to predict it
- Know how forecasters try to predict weather, both from simple observations, but also some complex data
- Know where weather reporters get most of their weather information
- Know what weather technology has allowed meteorologists to do
- Know the four different types of weather technology, how each works and what they are used for

- Know what a weather map is and how it is used
- Be able to understand a weather map symbol (page 602) and identify it on a weather map (page 603)
- Know the difference between isobars and isotherms and be able to identify them on a weather map
- Know the differences between weather service maps and newspaper weather maps
- Be able to understand a newspaper weather map (page 604)
- Know what some of the limits are for weather forecasting including the “butterfly effect”