

Name \_\_\_\_\_ Date \_\_\_\_\_

### Activity A.3 Pre-Test/Post Test

#### **True or False**

Circle T for TRUE or F for FALSE

1. We can predict the weather but we can't predict the climate. T / F
2. In a cold front, cold air moves in over warm air. T / F
3. Tornadoes only happen in spring and summer. T / F
4. Hurricanes only happen in summer and fall. T / F
5. In astronomy, the Doppler shift means that objects moving away from the observer appear to be red shifted. T / F
6. Thunder causes lightning. T / F
7. Lightning causes thunder. T / F
8. Since water vapor needs condensation nuclei to form, pollution increases rainfall.  
T / F
9. Folk sayings accurately predict the weather. T / F
10. Ocean currents cause winds over the oceans. T / F
11. Oceans heat up faster than the land. T / F
12. All of the following are greenhouse gases: methane, water vapor, CO<sub>2</sub>. T / F
13. Tornadoes can spin clockwise or counter-clockwise, but hurricanes can only spin clockwise. T / F
14. The continental United States is home to the wettest place on Earth. T / F
15. The United States has the wildest weather on Earth. T / F

## Multiple choice

Circle what you consider the correct answer:

1. Summer in the northern hemisphere occurs when:
  - a) the Earth is closest to the Sun
  - b) there are less clouds in the sky
  - c) the northern hemisphere tilts towards the Sun
  
2. The Tropics are hotter than the mid-latitudes because:
  - a) they get more hours of daylight per year
  - b) the Sun's rays fall more directly close to the equator
  - c) the equator is closer to the Sun
  
3. The basic building blocks of a hurricane are:
  - a) thunderstorms
  - b) tornadoes
  - c) waterspouts
  
4. Which of the following scales used to measure temperature is NOT named after a person?
  - a) Celsius
  - b) Fahrenheit
  - c) Centigrade
  
5. Doppler radar enables forecasters to predict tornadoes because it sees:
  - a) small regions of air moving towards and away from the observer
  - b) debris in the air
  - c) temperature differences in the vortex
  
6. The deadliest hurricane in US history was:
  - a) Andrew
  - b) Bonnie
  - c) Camille
  - d) none of the above
  
7. The most dangerous aspect of winter storms is:
  - a) road conditions
  - b) avalanches
  - c) power failures
  - d) shoveling snow
  
8. When a tornado threatens, the safest place to be is:
  - a) in your car, driving away from the storm
  - b) under a highway overpass
  - c) in a storm cellar
  - d) in a windowless room in the center of your home

9. Weather in the United States mainly moves from:

- a) East to West
- b) North to South
- c) West to East
- d) South to North

10. Which of the following do NOT affect the United States:

- a) tsunamis
- b) El Nino
- c) La Nina
- d) South East Asian volcanoes

### **Fill in the blanks**

Circle one word appearing in the parentheses to make the best sense.

1. Winds blow from areas of (high/low) pressure to areas of (high/low) pressure.

2. Looking down from over the North Pole, the Earth appears to rotate (clockwise/counter-clockwise.)

3. Thunderclouds are caused by (conduction, convection, radiation.)

4. A (cold/warm/occluded) front causes high altitude clouds to appear many hundreds of km ahead of the surface boundary.

5. When an object is moving away from us, the wavelength of its light (or reflected echo in the case of Doppler radar) is (stretched/compressed.) We call this the (red/blue) shift.

6. Cold air is (denser/lighter) than warm air.

7. In a warm front warm air slides (over/under) cold air.

8. Violent thunderstorms are found at (warm/cold) fronts.

9. The first book relating cloud shapes to weather was written in (300 BC/1000 AD/1300 AD/1803 AD.) Its author was (Greek/Chinese/American/Dutch.)

10. The barometer was invented in (300 BC/1000 AD/1644 AD/1803 AD) by (Galileo/Torricelli/Fernando Baro/Newton.)

11. In an El Niño year, waters off South America are (warmer/colder) than usual.

12. El Niño years result in (more/less) Atlantic hurricanes.

13. Clouds (warm/cool) the Earth.

## Size and Sequence

a. With 1 being smallest and 4 largest, rate the following in size:

thunderstorm  hurricane  tornado  mesocyclone

b. Order the following in terms of loss of life in the United States, with 1 being least and 6 being most:

extreme heat  extreme cold  flood  lightning  hurricane  tornado

c. In terms of cost of property damage, order the following from least to most costly, with 1 being least and 4 being most:

tornado  hurricane  winter storm  El Niño/La Niña

d. With 1 being lowest and 3 being highest, describe the clouds closest to Earth's surface and highest above it:

cirrostratus  altostratus  stratus

## Mix and Match

Match the appropriate weather instrument with the phenomenon it measures.

Barometer ( )	(1) pressure
Anemometer	(2) wind direction
Thermometer ( )	(3) humidity
Psychrometer ( )	(4) wind speed
Precipitation gauge ( )	(5) snow depth
Wind vane ( )	(6) temperature