

Weather Objectives

Correctly define: air mass, air pressure, anemometer, barometer, cyclone, dew point, front, isobar, isotherm, meteorology, precipitation, psychrometer, relative humidity, saturated, transpiration

WEATHER BASICS:

- Explain where the energy for Earth's weather originates.
- Describe the basic direction all weather moves in the United States.

STATION MODELS:

- Locate and decode information from a weather station model.
- Label a weather station model based on provided data in the correct formats.

MOISTURE:

- Name three factors which affect the rate of evaporation.
- Name the natural process which cleans the atmosphere.
- Draw and describe the process by which clouds form.
- Explain under what conditions clouds are most likely to form.
- Explain the relationship between air temperature and its ability to hold water.
- Identify the instrument used to measure relative humidity and dew point.
- Use the charts on page 12 of the ESRTs to calculate relative humidity and dew point.
- Describe the relationship between relative humidity and temperature.
- Explain the relationship between dew point and air moisture.
- Explain the relationship between relative humidity and moisture content.
- Explain how the probability of precipitation changes as dew point and temperature change.

PRESSURE AND WIND:

- Explain how wind is named.
- Describe what causes the general movement of wind and its direction.
- Describe the relationship between air pressure and density
- Describe whether air is sinking or rising based on its pressure.
- Describe the relationship between moisture content and air pressure.
- Identify the characteristics of high and low pressure centers.
- Draw the direction of wind flow around high and low pressure centers.
- Draw an isobar map based on provided data.
- Describe the relationship between altitude and air pressure.
- Describe the relationship between air pressure gradient and wind speed.
- Identify how land and sea breezes are formed.
- Explain the relationship between winds and waves.
- Describe why planetary winds curve.
- Use the chart on page 14 of the ESRTs to state the prevailing wind direction for any latitude.
- Use the chart on page 13 of the ESRTs to convert barometric pressure from millibars to inches of mercury.

AIR MASSES AND FRONTS:

- Explain how air masses get their properties.
- Identify the temperature and moisture content of air masses based on their abbreviations.
- Identify where an air mass would likely form based on its characteristics.
- Draw an isotherm map based on provided data.
- Identify a warm or cold front on a weather map.
- Draw a profile showing how a cold or warm front looks on the ground.
- Identify the key characteristics associated with cold and warm fronts.
- Draw warm and cold fronts on a weather map based on air mass characteristics.

HAZARDOUS WEATHER AND SAFETY:

- Identify other names for hurricanes and tornadoes.
- Describe the type of weather and dangers associated with hurricanes and tornadoes.
- Describe hurricanes and tornadoes are different regarding geographical scale.
- Describe appropriate safety precautions to take for both tornadoes and hurricanes.