

METEOROLOGY

What is “meteorology”?

Study of weather and the elements of weather

Name some weather elements and describe what causes them –

Temperature – heating of the earth’s atmosphere by the sun. Warm air rises / Cool air settles. Measured with a thermometer.

Diagram how the angle of the sun’s rays hitting the earth’s surface relates to temperature. Emphasizes why the sun is more intense in tropics. Maximum declination during the summer is 22.5 degrees North.

Pressure – The vertical airflow (caused by temp) which results in high and low pressure areas. Measured with a Barometer.

Wind – “unequal distribution of heat energy in the atmosphere”. Uneven heating of the earth’s surface. Speed measured with an Anemometer, direction measured with a Vane (like a weather vane).

Humidity / Precipitation – rain, snow, sleet, etc. The condensation of moisture in the atmosphere. When warm moisture laden air rises and cools forming clouds. The cooling process causes the water vapor to condense into droplets which grow in size until they fall to the ground. Measured with a Hygrometer.

Clouds – minute water droplets or ice crystals suspended in air. Different types and many things about the weather can be forecast from the clouds we see.

Fronts – the boundaries of different pressure areas which when making contact where unsettled conditions exist.

Draw a typical Low Pressure front and describe the relationship between the different elements including the isobars, wind direction (Coriolis Effect), Veering and backing wind, precipitation conditions and types of clouds.