



## Meteorology

### Course Description:

Meteorology is an elective designed for students in grades 11 – 12. The course examines the processes that create weather, and applies the hands on approach to learning. Meteorology is paired with the Basic Astronomy course. Combined they make up a full semester course.

### Course Expectations:

Meteorology is one half of a semester course. A textbook is used mainly for homework and background reading. Field guides, on-line resources, models and weather instruments are used during class to study relative humidity, precipitation, temperature, clouds, pressure, wind-speed and direction and to complete labs.

### Course Topics include:

1. The Atmosphere
  - a. How other parts of the Earth system affect the composition of the atmosphere?
  - b. How does heat move through and affect the atmosphere?
  - c. Why does temperature vary?
  - d. How does human activity affect the atmosphere?
2. Water in the Atmosphere
  - a. In which states of matter does condensation occur?
  - b. How do clouds form?
  - c. What causes precipitation?
3. The Atmosphere in Motion
  - a. What is air pressure, and what causes winds?
  - b. How do friction and Earth's rotation affect global wind and pressure patterns?
  - c. How does Earth's rotation affect global wind and pressure patterns?
  - d. How do continents, seasons, and topography affect wind?
4. Weather
  - a. What are air masses? How and where do they originate?
  - b. How do fronts and pressure systems affect weather patterns?
  - c. What atmospheric conditions cause thunderstorms and tornadoes?
  - d. How do scientists define hurricanes and winter storms? How do these phenomena start?
  - e. By which means do meteorologists predict weather?