

Course Description

Exploration is the key to success in this course. As a member of an exploration team, students investigate the atmosphere, freshwater hydrology, ocean floor features, plate tectonics, geologic principles, the rock cycle, geologic time, and space. Students will have the opportunity to do hands on activities in each module and they will interact with the course content in a variety of ways.

Four perspectives taken during explorations will provide the backdrop for the development of course concepts, activities, and web adventures: Global, Regional, Local, and Personal. Note: The honors component is built into the course for students pursuing honors credit.

Course Syllabus

Module 1: An Introduction to the Earth Space Science Course

- The course motif
- Pace and track choices;
- Software downloads and installations
- The Nature of Science
- Scientific processes
- Exploration and explorers
- Who and what are scientists

Module 2: The Skies

- General characteristics of the Atmosphere
- Structure of the atmosphere
- Trends in temperature and atmospheric pressure
- Factors influencing weather and climate
- Humidity, air pressure, air masses, temperature, long term conditions
- Global air circulation and winds, coriolis effect
- Weather maps and forecasting
- **Honors** (all of the above plus)
Severe Storms; Lightning

Module 3: The Waters

Oceans

- Composition of ocean water
- Ocean currents
- Sea floor features
- Using latitude and longitude to navigate and locate points on the globe/map reading

- Climate and current connection

Freshwater Hydrology

- Water cycle
- Waves and erosional forces
- **Honors** (all of the above plus)
River systems as parts of watersheds
Groundwater, springs, and sinkholes
Aquifers

Course Objectives Course Concepts/Content

Major concepts/content. The purpose of this course is to develop concepts basic to the earth, its materials, processes, history, and environment in space:

- The nature of science
- Geologic divisions of the earth
- Formation of rivers and water systems
- Glaciers
- Hydrologic cycles
- Physical oceanography