



School District of Marshfield Course Syllabus

Course Name: Oceanology Honors

Length of Course: Semester

Credits: 1/2

Course Description:

The content includes a rigorous study of: the nature of science, origins of the oceans, chemical and physical structure of the marine environment, ecology of the various sea zones, marine communities, and the interrelationship between man and the ocean. A variety of teaching/learning strategies will be employed, including lab activities that stress measurement and the use of the scientific method.

Learning Targets:

- Apply knowledge of the nature of science and scientific habits of mind to solve problems and employ safe and effective use of laboratory technologies.
- Describe the unique physical characteristics of the marine environment.
- Demonstrate knowledge of marine communities, food chains, and food webs.
- Describe the physical and biological characteristics of the planktonic, benthic, and nektonic regions of the oceans.
- Explain how the physical and chemical properties of seawater, along with the geology of the ocean basin, shape the nature of oceanic life.
- Compare the diverse characteristics of representatives of the major phyla/divisions represented in marine systems.
- Describe the interrelationship between man and the ocean environment and the need for protection of the natural systems on Earth.
- Describe the present and potential resources of the ocean.
- Describe how marine science interacts with technology and society.

First Quarter – 9 weeks

1. Knowing the Ocean World - 1 week
2. Origins – 1 week
3. Earth Structure & Plate Tectonics – 2 weeks
4. Cont. Margins & Ocean Basins - 1 week
5. Sediments – 1 week
6. Water and Ocean Structure 1.5 weeks
7. Seawater Chemistry – 1.5 weeks

Second Quarter – 9 weeks

1. Circulation of the Atmosphere – 1.5 week
2. Circulation of the Ocean – 1.5 week
3. Waves – 1 week
4. Tides – 1 week
5. Coasts – 1 week
6. Life in the Ocean - .5 week
7. Plankton, Algae, and Plants- .5 week
8. Marine Animals- .5 week
9. Marine Communities- .5 week
10. Marine Resources- .5 week
11. Environmental Concerns- .5 week

Required Core Resources:

Text: *Oceanography: An Invitation to Marine Science*, Garrison, 5th Edition, Belmont, CA, Brooks/Cole - Thompson Learning Inc., 2005

