

Science Lesson 4: Storms

Hawaii DOE Content Standards: 1, 2, 6, 7, 8

Key concept:

Various energies affect reef communities

Performance indicators:

After completing this lesson, students will describe the affect of waves, currents, and storms on coral reefs.

Activity at a glance:

Use weather data to explore the energy, frequency, and geographic focus of environmental impacts on coral reefs.

Time:

One class period

Assessment:

Keep a log of weather data including precipitation, wind speed and direction, temperature, wave height and period, barometric pressure.

Vocabulary:

Wave, meteorology, wind speed, forecasting

Materials:

Telephone, Internet, Newspaper or TV, Tide Chart

Activity Overview

1. Discuss the effects of storms and waves on the sedimentary coral organisms.
2. Discuss storm generation and the magnitude of different storm events.
3. Learn about the forecasting of storms and how and where weather patterns are reported.
4. Have students track local weather through local media and personal observation in a weather journal.
5. Discuss the safety issues and importance of knowing the weather and tide conditions before going out onto the ocean.





Cultural Values

Kokua

Taking initiative, service, clean up maintenance

Lokahi

Unity, harmony, leadership skills

Adaptations/ Extensions

Use the Kestrel 4000 weather station and rain gauge to create extended weather log at your site. Log the information in a spreadsheet data table and compare to other regional data and trends.

Background, teaching suggestions, resources:

<http://www.prh.noaa.gov/hnl/pages/watchwarn.php>

Connections to other curricula or lessons: Waves, currents, reef survey

Safety

Always check weather and surf conditions before going out on the ocean. Winds should be below 15 knots and surf below the advisory level for the relevant shore.

It is important to mark the dive area with orange floats at each pair of divers. This is to alert other boaters to the presence of divers. Also training in CPR is recommended for at least one of the staff if not everyone. A cell phone or radio should be carried on board in case there is a need for emergency support. A first aid kit with tourniquet materials is needed on board the boat. All divers should pass a swim test before the activity and divers should work in pairs in order to aid a buddy in trouble. The orange dive marker should double as a floating safety device. Staff on the boat needs to monitor the divers while in the water in case anyone needs assistance.