

## Science Lesson 6: Currents

---

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

**Key concept:**

Various energies affect reef communities

**Performance indicators:**

After completing this lesson, students will investigate currents on coral reefs.

**Activity at a glance:**

Use drogue sampling to follow currents at three levels at your reef site.

**Time:** One class period

**Prerequisite skills:** None

**Skills to be introduced:** Drogue survey

**Assessment:**

Write a descriptive report include photographs of the drogue survey.

**Vocabulary:** current, drogue

**Materials:**

Three one gallon bottles and three buoys, line, GPS, stop watch, and nautical chart to note drogue movement.

### Activity Overview

Drogue demonstration to follow currents at reef site. Use gallon jugs filled with different amounts of water to suspend drogue at three depths. Run a line with a buoy to the surface to follow drogue. Cluster three drogues at reef study site suspended at different depths. Surface drogue should be seventy percent submerged. During a timed interval release the drogues and note the direction and rate of drift. Students can follow the drogue with a GPS or attach a GPS, logging a track, to the buoy. Make sure the track log interval is a timed interval relative to the drogue time trial for example every minute for a half an hour drogue survey. What did you learn about the reef site what role do currents play in the life of the coral reproduction, feeding, waste, environmental temperature and salinity?





## Cultural Values

### **Kokua**

Taking initiative, service, clean up maintenance

### **Lokahi**

Unity, harmony, leadership skills

## Adaptations/ Extensions

### **Background, teaching suggestions, resources:**

*Coral Reef Ecology* by Gulko

**Connections to other curricula or lessons:** Coral survey, GPS

## 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 all. 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.