Fluke: Whale Watching activity

Summary
In this activity students will learn field techniques to observe Humpback whales and collect data on their behavior. In Hawaii whales can be seen November through April with peak viewing season in January or February.

Objectives
- Students will be able to observe and describe different types of humpback whale behavior
- Students will be able to identify types of equipment use to observe and study humpback whale behavior

Materials (1 set per group of 5-6 students)
- Binoculars
- Whale research notebook
- Clipboards
- Whale behavior chart

Making Connections
This is the forth activity of the whale research notebook, this should be done after the other whale lessons have been completed and students have an understanding of whale behavior prior to the field trip.

Teacher Prep for Activity
1. Print a copy of whale behavior chart for each group
2. Gather clipboards, binoculars, pencils and other outdoor materials you made need for a field trip such as first aid kit.
3. Set a date for a field trip at a nearby beach that you can watch whales from. This may take some time to find or ask around to find locations that are known to be good viewing sites. You may also be able to take the students on an actually whale watching tour boat if funds are available. This lesson was designed to provide guidance and information for a free humpback whale viewing experience with out a tour boat.
4. Visit http://www.oceanmammalinst.org/songs.html to download whale songs (optional)

Background
Whales are in Hawaii during winter months (November through March) but can be found in Hawaiian waters as late as April. They come in close enough to shore to easily observe with binoculars or even with the naked eye. Whale researchers can observe whale behavior from boats, helicopters or from shore. They collect data on how often they observe different behaviors to better understand how whales interact and communicate with each other.
Partnership for Reform through Investigative Science and Math

Vocabulary (more information on the whale behavior chart)

**Blow:** the spout that is a result of the whale taking a breath, on average adult humpbacks take a breath every 10-15 minutes but some can stay underwater as long as 45 minutes. Calves breath more frequently about every 3 to 5 minutes.

**Breach:** when the whale completely jumps out of the water and lands back on the surface of the water with a big splash.

**Fluke up dive:** when the fluke arches above the waters surface showing the identifying details of the whale

**Fluke:** the whales tail

**Head lunge:** when the head of the whale rises and lunges out above the water

**Head rise/spy hop:** when a whale rises its head up vertically so that its eyes are above the water

**Hydrophone:** an underwater microphone that scientists use to listen to whale songs underwater

**Pec slap:** when the pectoral fin rises up out of the water and slaps on the surface

**Peduncle slap:** when the whales tail is completely out of water and the peduncle slaps on the surface

**Tail slap:** when the fluke rises out of the water and slaps on the surface

**Procedure**

1. Make sure each student has their Whale research notebook.
2. Gather materials and pass out to small groups (5-6 students)
3. Give a brief overview of what the day will involve before leaving (example if you are viewing from shore, will they be allowed to swim or not)
4. Walk or drive to the viewing beach
5. Give another overview of what the students should do once you are at the beach (explain how to use the binoculars and how to scan the horizon to look for activity)
6. Have them break into small groups and take turns making observations with the binoculars. Binoculars are not necessary but it is good for the students to learn as a type of field equipment used in whale behavior studies.
7. Have the students record data for at least 1 hour
8. Once the students are back in the class have them describe what they saw
9. Ask them to use their data table to identify what behavior they observed the most
10. Have them work with their group to produce a graph to visually represent the data that they collected (see below)
11. Include the date, duration of observation period and total number of observations
12. Play the whale songs for the class (optional)

**Assessments**
Completed whale watching page in Whale research notebook

**Resources**
Hawaiihumpbackwhale.noaa.gov
Hawaii Islands Humpback Whale National Marine Sanctuary

To listen to a whale song online:
http://www.oceanmammalinst.org/songs.html

**Art Connections**
Have students draw pictures of whale behavior that they observed.

**Culture Connections**
Have students research and discuss the importance of whales in Hawaiian culture or Report on the history of Whaling in Hawaii
Humpback Whale Behaviors

Typical humpback whale behaviors seen in Hawaiian waters

**Blow**
On average, adult humpbacks take a breath every 10-15 minutes, but can remain submerged for as long as 45 minutes. Calves must rise to the surface every 3-5 minutes.

**Head Rise or Spy Hop**
A whale rises vertically toward the surface, with its head out of the water. Some believe this behavior allows the whale to look at activity going on above the surface.

**Tail Slap**
A humpback raises its tail flukes out of the water and slaps them forcefully on the surface of the water. This behavior is often repetitive and may serve as a warning.

**Pec Slap**
Humpbacks will slap the water's surface with one or both fins simultaneously. The slapping of fins may serve as a communication signal to other whales.

**Head Lunge**
A competitive display in which the humpback whale lunge forward with its head raised above the water.

**Peduncle Slap**
An energetic display where the whale throws its tail out of the water and in the process, slaps its peduncle on the surface.

**Fluke Up Dive**
The tail of the humpback appears out of the water in an upward arch and slowly rolls underwater in conjunction with a dive.

**Breach**
An acrobatic display where the humpback uses its tail to launch itself out of the water then lands back on the surface with a splash.

Hawaiian Islands Humpback Whale National Marine Sanctuary

For More Information Visit the Sanctuary Website at: http://hawaiiwhale.noaa.gov