Aquarium Webcam Resource Kit
Lesson 1 "Think like a Scientist"
6th- 8th Grade

Next Generation Science Standards:

- **MS-LS1-6** Science knowledge is based upon logical connections between evidence and explanations.
- **MS-LS1-3** Scientists and engineers are guided by habits of mind such as intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas.

Supplies:

- Think like a Scientist video
- Ocean Ranger Observation Sheets
- Computer & projector to show Blue Cavern Webcam: http://www.aquariumofpacific.org/exhibits/webcams
- Sticky notes
- On-line interactive: Ocearch: http://www.ocearch.org/

Step 1: Class Discussion

Prompts

- What do you think of when I say '*scientist*'?
- How can you think like a scientist?

Step 2: Play "Think like a Scientist" Video & Follow up

Prompts

- Did Stacey look like a scientist to you?
- What was the very first step in starting research? *Observation*
    - Observations are collected using one or more of your senses to gather information. Scientists can also use instruments such as microscopes, thermometers, or in Stacey's case, a shark tag with GPS to collect information. Scientists record information accurately from observations and keep detailed records.

Dive Deeper: Real Life Examples of Data Collection

- Southern California Whale Research Project (http://www.aquariumofpacific.org/whaleproject)

    - Explore Southern California's whale populations and learn how the Aquarium of the Pacific is helping to collect information using photo-identification. This is an interactive web-application with searchable fields and photos of identified blue whales.
    - Videos on blue whale research, tools, and conservation efforts: Voices in the Sea: (http://cetus.ucsd.edu/voicesinthesea_org/species/baleenWhales/blue.html)

- Ocearch (http://www.ocearch.org/)
    - This is an interactive site that allows you to look up individual tagged sharks. Pictures describing a variety of different kinds of data collection are found under *Research Projects*.

- Today you are going to start thinking like a scientist by making observations of ocean animals.

Step 3: Watch the Blue Cavern Webcam

- Watch the Blue Cavern webcam and use the Ocean Ranger Observation worksheets to record observations and questions.
- Write observations in the "I Notice" section and questions in the "I Wonder" section.

Step 4: Questioning Activity & Discussion

- *Think Pair Share* with other students their observations and questions.
- Write their favorite question on a sticky note and place on the board.
- Arrange questions into categories (example: animal behavior, habitat, etc.)
- In groups or as a class pick questions to focus on.
- Dive deeper into the questions and make some predictions. How did they come up with their prediction?
- Discuss how you could research the question to learn more.
- Can you design a test to answer this question?