



Aquarium Webcam Resource Kit
Lesson Outline *Think Like a Scientist*
6th- 8th Grade

Students will...

- Be introduced to a real-life application of the scientific method
- Make predictions based off observations
- Design a test to answer their prediction

Key Words:

- **Analysis:** detailed examination of the elements or structure of something.
- **Hypothesis:** a supposition or proposed explanation made based on limited evidence as a starting point for further investigation.
- **Observations:** the action or process of observing something or someone carefully or in order to gain information
- **Scientific method:** a method of procedure that has characterized natural science since the 17th century, consisting in systematic observation, measurement, and experiment, and the formulation, testing, and modification of hypotheses.

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

- 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*.

Step 3: Watch the Blue Cavern Webcam

- Today you are going to start thinking like a scientist by making observations of ocean animals.
- Watch the Blue Cavern webcam and use the Ocean Ranger: Think Like A Scientist (page 1) to record observations and questions.
- Write observations in the “I Notice” section and questions in the “I Wonder” section.

Step 4: Questioning Activity & Discussion

- Students will *think pair share* their observations and questions.
- Have students 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.
 - Students can use the sentence frame “I think _____ because _____”
 - How did they come up with their prediction?
- Discuss how you could research and/or design a test to help you answer your question
- Complete page 2 of the Think Like a Scientist worksheet with your observation, questions, predictions, and test/experiment design.