

# Bay Area Scientists in Schools Presentation Plan

**Lesson Name** You are what you eat! How diet shapes teeth

**Presenter(s)** Liz Ferrer and Jessie Atterholt

**Grade Level** 1<sup>st</sup> Grade

**Standards Connection(s)** 1. Organisms can be classified by what they eat, 2. In a particular environments, some organisms survive better than others, 3. Students develop their own questions and perform investigations

## Teaser:

Why do different animals have different shapes of teeth? What kinds of teeth does an animal need to eat meat? Or vegetables? Or a combination? Students will explore the bones, and especially the teeth, of living animals, then use what they discover about animal teeth to understand what we can learn from the skeletons and fossils of extinct animals. At long last, you'll learn what you, your pet dog, and a giant grizzly bear have in common!

## Vocabulary/Definitions:

*3 – 6 important (new) words*

Environment  
Natural Selection  
Adaptation  
Omnivore  
Herbivore  
Carnivore  
Extinct

## Materials:

*What will you bring with you?*

An array of skulls  
Large laminated pictures for illustrations  
Fossil teeth (mammal, horse, t-rex)

*What should students have ready (pencils, paper, scissors)?*

1 sheet of paper and pencil per student

## Classroom Set-up:

Students will be in groups of 4-5 (please let us know ahead of time approximately how many students are in your class.)

## Classroom Visit

### 1. Personal Introduction:

**5 Minutes**

Hi! We are Jessie and Liz, graduate students at UC Berkeley who study fossils and evolution. I collect bones and skulls, since it is important to study the bones of living animals to help us understand extinct animals. We are here today to tell you how a process called natural selection shapes organisms to their environment, and to share with you some of the skills from my collection.



**CRS**

**COMMUNITY RESOURCES FOR SCIENCE**

*practical support for great science teaching*

1611 San Pablo Avenue, Suite 10B  
Berkeley, California 94702

(510) 527-5212 • [www.crscience.org](http://www.crscience.org)

**Topic Introduction:****15 Minutes**

Every animal lives in a particular environment. Who knows what an environment is? [explain, show] Animals have special traits that help them live in their environment. These traits are called “adaptations.” What are some adaptations that you can think of that allow animals to live in their environment? (If no response, prompt with some obvious examples like fish gills or polar bear fur.)

Today, we are going to look at what adaptations animals have for eating different kinds of food. (Define carnivore, herbivore, omnivore, and give examples, pass around pictures). Ask students what type of eater they are. Have them feel their own teeth and describe some things that they notice. Describe animal teeth by showing the shapes with your fingers: herbivores have teeth that move flat together (open palms) and carnivores have pointed teeth that interlace (interlacing fingers).

**2. Learning Experience(s):****30 Minutes**

Have each student fold a piece of paper into fourths to make a “science note-book” and each member of the group is assigned a special job (one student writes observations, one student draws the different types of teeth they observe, one-two students measure different teeth, one student writes down the measurements).

Each group will receive on skull to study (rule: do not pick up the skull – only touch the teeth). They will note what teeth adaptations they see, and attempt to make inferences about what type of “eater” that animal is based on the adaptations of the teeth. Do they know what animal it is? Do they know what it eats?

How do we know what kinds of “eaters” extinct animals are, if we can’t go observe them in real life? Use skills acquired during the learning experience to analyze examples of isolated fossil teeth.

**3. Wrap-up: Sharing Experiences****5 Minutes**

In a large group, ask for volunteers to describe some characteristics of the teeth of each type of eater. Think about some animals that don’t have teeth – what special eating adaptations can you think of (for example whales, insects, or leeches (ew!))?

**4. Connections & Close:****5 Minutes**

Next time you eat, notice which types of teeth you’re using and what they’re doing to different types of foods. How are your mouths adapted to eat all the different things you eat? What are some foods that are difficult for your mouth to eat?

**Total 50 – 60 Minutes**

## Follow-up – After Presentation

Suggest students write a letter explaining “How we learned about ?”

List or attach examples of activities, websites, connections for additional learning.

Attach worksheets, hand-outs, visuals used in classroom presentation.

To learn more about adaptation and extinct animals, come visit us at the University of California Museum of Paleontology! We'll show you around our exhibits, tell you about our T. rex skeleton, and even let you look for fossils!

Refer teacher to:

<http://www.paleoportal.org/>

<http://www.ucmp.berkeley.edu/education/explorations/tours/fossil/index.html>

<http://www.evolution.berkeley.edu/>

<http://www.undsci.berkeley.edu>

Ask students to make up their own animal. Draw a picture of it and what it eats. What does its mouth look like? How is it adapted to its environment and its food sources?

UCMP “Clip-birds” lesson: <http://www.ucmp.berkeley.edu/education/lessons/clipbirds/>

Have students make a casting of their teeth with plaster of paris: Make a clay “sandwich” that will fit into your mouth. Bite into the mold and press the clay against your teeth, then carefully remove it. Tape a paper strip around the clay sandwich. Mix Plaster of Paris according to the directions and pour the plaster into the clay mold. Let it set for at least an hour, then carefully pull away the clay. Voila! A casting of your teeth.<sup>4</sup>

### **Reading Connections:**

- Let's Look At Animal Teeth by Wendy Perkins (Capstone Press Series)

<http://www.capstonepub.com/product/9780736863537>

- Whose Teeth Are These? by Wayne Lynch

<http://www.amazon.com/Whose-Teeth-These-Animal-Series/dp/1552852040>

- Teeth by Sneed B Collard III

[http://www.amazon.com/Teeth-Sneed-B-Collard/dp/1580891209/ref=pd\\_sim\\_b\\_1](http://www.amazon.com/Teeth-Sneed-B-Collard/dp/1580891209/ref=pd_sim_b_1)