

Community in the Classroom Presentation Plan

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

Presenter(s): Liz Ferrer & Jessie Atterholt

Grade Level 1st LS **Standards Connection(s)** 1) organisms can be classified by what they eat; 2) in a particular environment, 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:

Environment
Natural selection
Adaptation
Omnivore
Herbivore
Carnivore
Extinct

Materials:

We provide: an array of skulls, a series of large, laminated pictures for illustration, fossil teeth (mammoth, horse, T. rex)
Students already have: paper (1 sheet each), pencils

Classroom Set-up:

Students should 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 skulls from my collection.

Topic Introduction:

15 Minutes

What questions will you ask to learn from students? Big Idea(s), vocabulary, assessing prior knowledge... 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.

2. Learning Experience(s):

30 Minutes



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Have students each 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 one 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 adaptations of the teeth. Do they know what animal it is? Do they know what it eats?

Collect the skulls from students. Gather together in a group to report our results.

Ask each group what they figured out about their skull—what kind of eater it is, and presentation of the evidence/adaptations that make them think so. Tell them what animal the skull comes from, if they haven’t already figured it out. Ask them how they would test their ideas outside of the classroom? E.g., how could they check that a bear is really an omnivore?

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 learning experience to analyze examples of isolated fossil teeth (not contained in a jaw to show how we can make inferences about extinct animals.

3. Wrap-up: Sharing Experiences

5 Minutes

In 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 other 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 60 Minutes

Follow-up – After Presentation

To learn more about adaptations 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://evolution.berkeley.edu/>

<http://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 source(s)?

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 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.



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