Animal Teeth and Diet

Grade Range: Elementary School

Lesson Time: 120 minutes

Key Terms
- Canine
- Carnivore
- Herbivore
- Incisor
- Molar
- Omnivore

Materials and Resources
- Animal Teeth and Diet Worksheet
- zView

Activity Overview

Have you ever looked closely at a tiger’s teeth to find out what it eats? Probably not! However, animals’ teeth are a perfect example of structure and function in nature. The shape and size of an animal’s teeth are directly correlated to its specific type of diet. What are the characteristics of carnivore teeth? Herbivore teeth? Omnivore teeth? How are their teeth similar or different? How do the specific size and shape of their teeth help these animals to consume their food? Students will investigate these questions and more.

Essential Questions

1. How are animals adapted to their environment?
2. How are teeth structure and function related?

Objectives

- Observe and analyze the teeth of carnivores, herbivores, and omnivores
- Compare animal and human teeth to discover similarities and differences
- Build models of carnivore and herbivore teeth
- Construct an argument with evidence that shows the relationship between tooth structure and function

Introduction

Tell the students to imagine their favorite animal in the wild. Then ask the students if they can describe their favorite animal’s teeth. Follow up by asking questions about the animal’s diet: “Is your animal a carnivore, herbivore, or omnivore? How are your animal’s teeth related to its diet?”

zSpace Activity

Activity Questions Provided in Studio

Answers may vary. Sample answers are provided below.

1. Animals have specifically shaped teeth to help them eat their food. Carnivores: Carnivores eat meat. They usually have sharp front incisors and long, sharp canine teeth. Use the Camera from your Tools to zoom in on
the lion’s teeth. Why do carnivores need such long, sharp teeth? Open the Model Gallery in your Backpack and add models of other carnivores to the scene, then compare their teeth using the Camera. Take a photo of the entire scene.

*Carnivores usually have sharp front incisors and long canine teeth to help rip and tear the flesh and bones of their animal prey.* Photo of carnivores.

2. **Herbivores:** Herbivores eat plants. They usually have large front incisors and flat, broad molars. Use the Camera to zoom in on the rhino’s teeth. Why do herbivores need large incisors and flat molars? Add models of other herbivores to the scene, and compare their teeth using the Camera. Take a photo of the entire scene.

*Herbivores usually have large front incisors and flat, broad molars to bite and grind tough vegetation.* Photo of herbivores.

3. **Omnivores:** Omnivores eat both plants and animals. Use the Camera to zoom in on the bear’s teeth. How would you describe the teeth of omnivores? Add models of other omnivores to the scene, and compare their teeth using the Camera. Take a photo of the entire scene.

*Since omnivores eat both plants and animals, they usually have teeth that resemble those of carnivores.* Photo of omnivores.

4. **Humans:** Use the Camera to zoom in on the human teeth. Pay special attention to the shape and size of the incisors, canines, and molars. Would humans be considered herbivores, carnivores, or omnivores? How would you describe their teeth?

*Humans are omnivores because we eat both plants and animals.* Humans have teeth similar to other omnivores.

**Closing**

**Animal Research and Teeth Models**

Work with a partner to conduct research about two different animals of your choice: one carnivore and one herbivore. Record information about these two animals’ teeth structure and diet on the Animal Teeth and Diet Worksheet. Then make 3D models of the herbivore and carnivore teeth using Leopoly 3D.

**Animal Teeth Presentations**

Present your chosen herbivore and carnivore to the class. Use your models as evidence of the correlation between the structure of an animal’s teeth and its diet.

**Questions for Discussion**

1. **Based on your research, how is the structure of animal teeth related to their function?**

   *Animals have teeth that are tailored to help them eat a specific diet. Carnivores eat meat and need long, sharp teeth to rip and tear the flesh and bones of their prey. Herbivores eat plants and need sharp front teeth for biting and flat back teeth for grinding up vegetation.*

2. **Why do you think human teeth are not particularly long or sharp like those of wild animals?**

   *The invention of fire for cooking and tools for cutting, pounding, and grinding of food have influenced the evolution of human teeth, specifically their reduction in size.*

**Extension Activity:** Students could research the evolution of human teeth and make models that demonstrate the changes that have occurred over time; they could share conclusions about why human teeth have evolved.
Extension Activity: Students could research the digestive systems of one carnivore and one herbivore and look for similarities and differences.

Extension Activity (Math): Students could identify the lines of symmetry for different animals’ teeth.

Follow-up Activity: *Predators and Prey* - Studio

Follow-up Activity: Create various types of animal teeth in Leopoly 3D. All models can be imported into Studio and pieced together to create a full set of teeth for a specific animal. Optionally, all Leopoly 3D models can be exported and 3D printed to be pieced together in the physical world.

**Differentiation**

- Group students heterogeneously to allow students with a strong command of the English language to assist in reading or interpreting questions.
- Give students a variety of presentation styles to choose from (using charts/graphs, PowerPoint, making 3D presentations, creating videos/movies, making posters).
- Have students work as partners or in small groups (younger children could partner with older buddies).
- Use text-to-speech if needed.