
The Ins and Out of Predators and Prey



Purpose:

- In this activity students will compare and contrast characteristics of herbivores, omnivores and carnivores. They will apply this information to identify the feeding style of a mystery animal and hypothesize that animal's role in its ecosystem.

Objective:

- The student will be able to define herbivore, omnivore and carnivore.
- The student will compare and contrast characteristics of herbivores, omnivores and carnivores by looking at their teeth, eyes and scat.
- In small groups, students will work together to apply information learned in a previous rotation to identify the feeding style of a mystery animal.

Materials:

- Fake scat replicas (provided)
- Scat pictures (provided)
- Skulls (provided)
- Task cards (provided)
- "General mammal skull" diagram with labeled teeth types (provided)
- Feeding type characteristics (provided)
- Butcher paper to create Venn diagrams (not provided)
- Markers (not provided)

Time Required: 30 – 45 minutes

Appropriate grades: 3-8

NGSS Standards:

3-LS3-2: Use evidence to support the explanation that traits can be influenced by the environment.

4-LS1-2: Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

MS-LS2-2: Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.



Activity:

<p>Introduction</p>	<p>Introduce the idea that we will be working with skulls of different mammals and that these tools are a privilege and need to be treated with respect. Discuss what respect means and proper ways to handle skulls.</p> <p>Explain that a skull can tell us a lot about an animal even if we don't know what that animal is. Hold up a large skull and ask students what they think that animal ate. (Focus their attention to its teeth to determine what they could have eaten (feeding style) and the placement of the eyes to determine how they could have seen the world, which relates to their role in the ecosystem if they need guidance).</p> <p>Next, show a picture of scat and ask the students what they think the animal ate and why. (Focus their attention on the shape of the scat and if they can identify anything in it if they need guidance.)</p> <p>Tell students that we're going to closely investigate 3 key characteristics to help us figure out an animal's role in its environment: eyes, teeth, and scat (poop)!</p>
<p>Body</p>	<p>Break students into 3/6/9 groups depending on the size of the class. Ideally there should be 3-6 students in each group.</p> <p>Explain that each student is going to become an expert in one of the characteristics we discussed. They will need to pay careful attention and create their own chart of identifiers for their characteristic because we will be using these skills to identify a mystery animal.</p> <p>Give each group a set of skulls or scat, which includes information cards on the features they should be looking at.</p> <p>Have students generate a summary list of indicators of their characteristic for the different feeding types. Students will create personal a list that they can take with them to the second part of the activity.</p> <p>After students have become experts on their characteristic, mix the groups up so that the new groups have at least one expert for each characteristic.</p> <p>Give the new groups a skull and scat pair, keeping the animal's identity a secret. Have the groups combine their list of indicators to help them determine if their mystery animal is an herbivore, omnivore or carnivore. Then, have students create hypotheses about that animal's role in the ecosystem (Is it a predator or prey?)</p> <p>Have each group share what they think their animals feeding style is along with any other observations they made with the rest of the class.</p>
<p>Closure</p>	<p>Place 3 Venn diagrams around the classroom: one for eye placement, one for teeth types and one for scat.</p> <p>Give each student 3 indicator cards and have them place it in the Venn diagram they think is most appropriate.</p> <p>As a class go over each Venn diagram and discuss the important indicators for each characteristic.</p>



Extension:

- Create a poster or presentation for each feeding style (carnivore, omnivore and herbivore) using vocabulary and the concepts from this lesson to describe skulls and scat. Use mammal examples from either this lesson or of the students own choosing. Do further research into each animal to explore its' life history.
- Have students create challenges for each other by making up their own skull and scat pair and having students guess what the animal's feeding style and habitat are.
- Have each student pick any mammal they wish and create a dinner party menu that they think that animal would enjoy. They can choose from the following list or make up their own. Have them write a letter to another student's animal inviting them to the dinner party. The letter could include a description of the two animals habitats (compare and contrasting them) and an explanation for the menu choices.

Main Courses:

1. Squirrel stew
2. Baked buds
3. Fried flowers
4. Toasted toads
5. Boiled bats
6. Steamed stems

Side dishes:

1. Roasted roots
2. Toasted tails
3. French fried feet
4. Grilled grass

Drinks:

1. Tadpole tea
2. Moose Milk
3. Pond water punch

Desserts:

1. Chocolate chipmunk
2. Petal pie
3. Baked berries

Modifications:

- **Lower Elementary**
 - Use terms such as meat eater and plant eater instead of carnivore and herbivore.
 - Do Venn diagram as a class
- **Middle School**
 - Elaborate on discussion for how animals are adapted for their feeding style. Bring in ideas such as habitat and relationships with other organisms. Continue this discussion in a research project if desired.
- **High School**
 - Have students create a dichotomous key instead of a Venn diagram for one of the characteristics using the indicators discussed.

