


Identifying Consumers in the Environment		Grade 4 Life Systems
<b>Lesson Plan</b>	<b>Safety Notes</b>	Potential allergens - use alternatives as needed
<p><b>Description</b>            In this lesson, students will learn about producers, consumers, and decomposers. They will explore types of consumers in an ecosystem (herbivores, carnivores, and omnivores) as well as learn how animal scat is an important clue to identifying an animal's place in the food chain.</p>		
<p><b>Materials</b></p> <ul style="list-style-type: none"> <li>● Bowl (size depends on how much you want to make)</li> <li>● Spoon</li> <li>● Plate/Baking sheet</li> <li>● Oats</li> <li>● Peanut butter or alternative</li> <li>● Honey</li> <li>● Cocoa powder</li> <li>● Additional: Dried Fruit, Chocolate Chips, Shredded Coconut, Nuts, Nutella</li> </ul>		
<p><b>Science Background</b></p> <p>Living things that eat/get their energy from other living things are called consumers. Examples of consumers are herbivores, omnivores, and carnivores. Herbivores are living things that only eat plants, so they get all their energy from plants (ex: caterpillar, deer). Carnivores only eat/ get their energy from meat (ex: snake, hawk, cougar) and omnivores are species that eat/get their energy from both plants and meat (ex: mice, bear, and humans).</p> <p>One interesting way to distinguish between types of consumers in an ecosystem is by analyzing their waste. Scat is one of the most important signs to look for when tracking animals. All mammals leave scat in one form or another. An animal's scat can not only tell us what animal left the feces behind but also what they eat, how healthy the animal is and where they spend most of their time. Different species of animals have different kinds of scat. Being able to identify animals by their scat is a great skill, very useful for scientists studying animal populations.</p> <p>The first characteristic we can look for to help us identify what animal the scat is from is look at the shape.</p> 		

This scat is in pellets, therefore we know it is likely from a herbivore. A herbivore is an animal that feeds on plants. This means scat left behind by herbivores will likely have grass and other plant particles still visible in it. Moose, deer, rabbits, and squirrels are all herbivores as they only eat vegetation. Deer left those particular scat behind.



Notice how the shape of this scat is not pellets but instead it is elongated and tapered at the ends. This actually suggests that the animal is a meat eater. When an animal's diet is meat based they are carnivores. Cougars, minks, and wolves are all examples of carnivores in Canada. If you were to break apart and examine this scat sample you can sometimes find remnants of the prey that these animals have eaten. Often fur and bone fragments get passed all the way through the digestive systems. This image represents wolf scat.



This is a scat sample from an omnivore. Humans, bears and raccoons are all examples of omnivores. This is scat from a black bear. The shape and appearance of this scat can change daily based on what the animal has consumed. Typically, omnivore scat is granular-looking, tends to be segmented and roughly tube shaped. The black bears here in Ontario eat a lot of berries. This makes their poops soft, leaving them to look more like patties than solid samples like this one.

Using this knowledge of animal scat we are one step closer to identifying all of the amazing species that may be in our neighborhoods.

### Activity Procedure

As consumers ourselves we need to keep our energy up by making some yummy energy filled snacks. You can use these snacks to create samples of different types of scat depending on if they are herbivores, omnivores or carnivores.

1. Combine the ½ cup of peanut butter (or alternative), 1 ½ cups oats, ¼ cup honey and 2 tbsp cocoa powder in a large bowl and stir until well mixed.
2. Place the bowl in the fridge for 15-20 minutes
3. While the mixture is chilling, gather ingredients to specialize your scat cookies
4. Take the mixture out of the fridge. Now we can start shaping our scat cookies.
5. **Making wolf scat:** Wolves are generally carnivores - they eat meat. This means that its scat will be elongated and tapered at the end. Add in additional treats to your cookie that can represent what might be eaten by a wolf such as coconut shreds to represent the hair of a prey animal.
8. Repeat this process for more animals until you have used up all of your cookie mix.

- a. Round pellet for herbivores
  - b. long and tapered for carnivores
  - c. Cylinders with blunt ends
9. While this lesson was used to make wolf scat, you can research other animals to recreate what their scat might look like.
  10. Once your cookies are shaped they can go on a plate or a tray and be stored in the fridge.
  11. Last but not least, these scat cookies are ready to eat.

### **Debrief**

Have you ever seen any animal scat? Next time you do try and identify if it is a herbivore, carnivore, or omnivore based on the clues that we provided you today.

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Handout

1. Draw arrows to match the scat with the type of consumer.



Herbivore

Carnivore

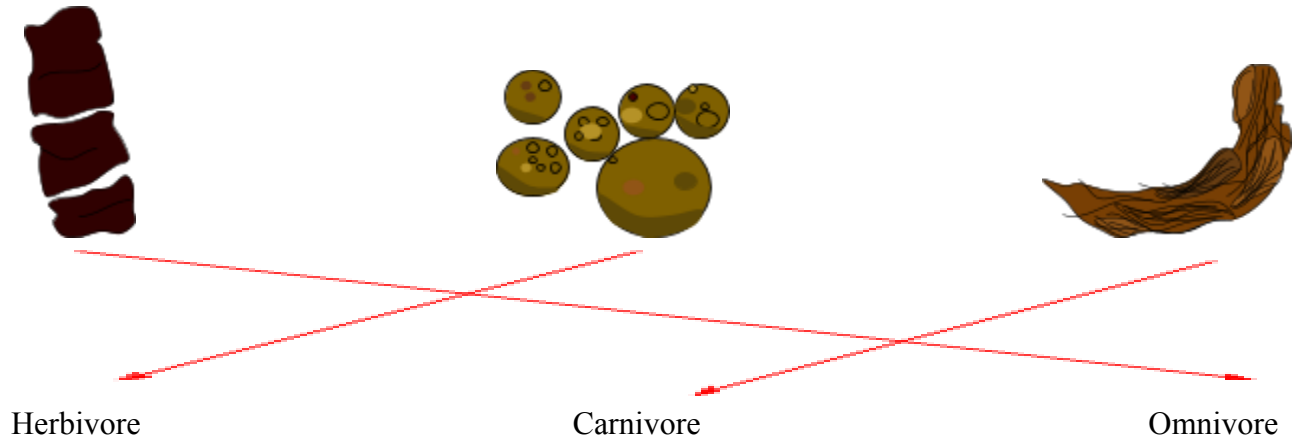
Omnivore

2. Complete the table. List or draw your answers. If you are unsure of an answer, do some research and learn more about some of your favourite animals' diets.

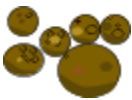


	Herbivore	Carnivore	Omnivore
Example species			
What they eat			
Teeth (Draw)			
Scat (Draw)			

Handout Answers

1. Match the scat with the type of consumer.



2. Complete the table.

	Herbivore	Carnivore	Omnivore
Example species	<i>Deer, Moose, Rabbit</i>	<i>Grey Wolf, Coyote, Bald Eagle</i>	<i>Black Bear, Humans, Racoons, Skunks</i>
What they eat	<i>Deer - grass, bark, twigs, berries, young shoots, other vegetation.</i>	<i>Grey wolf - deer, moose, beavers, hares.</i>	<i>Black Bear - berries, leaves, fish, garbage (foragers, will eat what they can find).</i>
Teeth (Draw)	<i>Flat teeth</i>	<i>Sharp teeth - Large canine teeth</i>	<i>Sharp teeth in the front (for meat), flat molars in the back (vegetation)</i>
Scat (Draw)	 <i>Herbivore</i>	 <i>Carnivore</i>	 <i>Black bear</i>