Unit # 3
What do predators eat and why?

Introduction & Materials:

Introduction:

Predation is a natural and necessary way for many species to survive. Our goal is to make sure students understand and respect these complex behaviors without portraying them as good or bad. It is easy to look at predator behavior through a human lens, which will often portray predators as being cruel or evil. In this unit we want to steer away from the "Big Bad Wolf" or "The Three Little Bears" and similar classic childhood stories teaching us to be fearful of predators. Killing of an animal is not something that should be discussed lightly, but in the case of predators, we want to focus more on the fact that hunting is natural and necessary for survival!

This unit will teach students about the relationship between predators and their prey.

Materials:

See "Game set up" and the attached diagram before gathering materials in order to understand the use of each item. Some items may not be needed if you are in a gym with floor markings. Note: many of these materials can be found and stored for future use.

- 2 long ropes, or objects to mark the end zones
- 4 - 6 hula hoops or similar objects ("shelters")
- Items to represent food and water (you will need 2 foods and 1 water for each player)
- A spot marker for each student's "cache" (this could be a sweatshirt or a piece of paper, so long as they know where/which is theirs)

Discussion:

What do predators eat and why:

Write each of the following words on a board or piece of paper for the students to see. Start at the top and go down to see if anyone knows what they are (this should be brief). Then write down the definitions for them to record in their books:

Carnivore- An animal that eats *only* other animals

Herbivore- An animal that eats *only* vegetation

Omnivore- An animal that eats animals *and* vegetation

Scavenger- An animal that eats animals that have already been killed *and* vegetation

Prey- An animal that is hunted, killed and eaten by another animal

Briefly, on the board or paper, **draw a food web** step-by-step to help understand the definitions. You can draw it yourself or have the students participate.

- Start at the bottom by drawing some leafy plants or grass
- Just above them, draw 4 or 5 herbivores (rabbit, squirrel, deer, sheep, elk, moose, etc)
- Connect the herbivores to the plants with lines to show what they eat
- Above the herbivores, draw a few omnivores (Skunk, possum, raccoon, badger, crow) and connect them with lines to both the plants and the appropriate herbivores. (i.e., badgers eat plants and rodents; crows scavenge herbivores)
- Finally, draw a few predators (Bear, Cougar, Wolf) and connect lines to the animals they eat (omnivores & herbivores)

Some of the lines may not seem logical at first (i.e. a crow eating a deer), point this out and ask, "Does anyone know how a crow would eat a deer?" If no one figures it out ask them, **"Of the words we just learned, what is missing from the web?"**

A: Prey & Scavenger

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Discussion continued:

Now go through and point out what in the web is considered prey, which will be any animal connected to a predator or omnivore. Draw attention to the fact that a crow could not kill a deer; Ask: **"What may explain this?"**

A: A crow is an example of a scavenger; it cannot kill a deer, but eats deer meat after the deer has died or been killed by a predator.

Crow behavior is something many of us have observed. Ask: **"Have you ever seen an example of a crow being a scavenger?"**

Examples: eating road kill, garbage in the parking lot, or raiding a trash can.

Two other words we would like to introduce before getting to our activity are below:

Cache- To hide or store food for the future

Examples: Cougars and grizzly bears will bury uneaten food to save it for later use and hide it from other scavengers.

Camouflage- Coloration and patterns that help an animal blend in with its surroundings

Activity: Predator Prey Survival!

Concept:

Now that we know what makes up a habitat, we want to give students a look at the life of both predators and their prey. Through this game, they will learn that both predators and prey can struggle to obtain all of the necessary resources to survive. We will demonstrate how predators and prey interact within the environment, as well as how natural *and* human-caused changes affect ecosystems.

Setup:

This activity will require a large area, either a gymnasium or an outdoor area safe to run in. You can either set up the habitat yourself ahead of time, or set it up with the students based on their new understanding of habitat components.

At one end, mark off an area the entire width of the playing area to be the "shelter." This can be done with a rope across the end, cones, or any other line marker. Do the same at the other end where the "food" and "water" will be.

Whatever you chose to represent food and water, you will need enough for two "foods" and one "water" for everyone in your group.

In the playing field between the two ends, place between 4 and 6 hula hoops, rope loops, cones, or something that will serve as a safe shelter when players are touching it or standing in or on it.

This could also be a tree or something built into the playing field depending on where you are playing. Lastly, each prey will need a spot designated as their cache in the "shelter" end to place their food and water on.

This could be a sweatshirt, a spot marked by a stick, cone, or anything as long as they each know where their cache is. The predators will also have a cache on the side of the playing field where they will have the prey stand when they are caught.

****See Diagram below to help with setup****

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Activity Predator Prey Survival continued:

How it works:

For groups of 12 students or less, choose one predator; for larger groups, start with 2 predators. Everyone else will be prey. All prey start in the "shelter" end where they are safe. The first round will go for 5 minutes. When the game starts, the prey have to navigate to the other end of the field and - **one item at a time** - collect 2 "foods" and 1 "water."

The objects in the middle are other "shelters" where prey cannot be tagged for 5 seconds when they are touching or standing in/on it. At any point that a predator is within 5 feet of prey, the prey can "camouflage" by freezing perfectly still with only their eyes moving and be safe from getting caught for 5 seconds.

Predators are trying to catch 2 prey during the round by tagging them when they are not in a shelter or camouflaged, and then walking them back to the side lines to their cache. They are not allowed to guard the food, water or shelters and must remain "on the hunt" at all times. When the animals have filled their needs they can sit down. The game ends when the time is up or all predators have filled their needs.

At the end of the round:

- Any predators that succeed are able to reproduce: choose 1 prey to become a predator
- Any prey that were successful have a large enough cache of food that they only need to collect 1 food and 1 water the next round
- Unsuccessful prey must again attempt to collect 2 foods and 1 water the next round

Return all food and water to their starting place for another round. Take note of increased struggle for prey to not get caught when you add predators.

Continue as many rounds as you would like with varying situations like the one below:

- There was a chemical spill in the habitat- one predator was poisoned and becomes prey, remove 5 contaminated waters,10 foods and a shelter. (Adjust #'s as you see fit, the idea is to cause resource shortages due to human caused events).

Debrief:

1. What is the hardest part of being a predator?

A: Catching prey!

2. What is the hardest part of being prey?

A: Collecting food and water without being caught by a predator!

3. How could we increase the survival of both?

A: Provide a larger habitat to support more prey and predators by giving them more food, water, shelter and space.

Predator of the Day

#3: The Wolverine! Refer to the Predator of the Day packet

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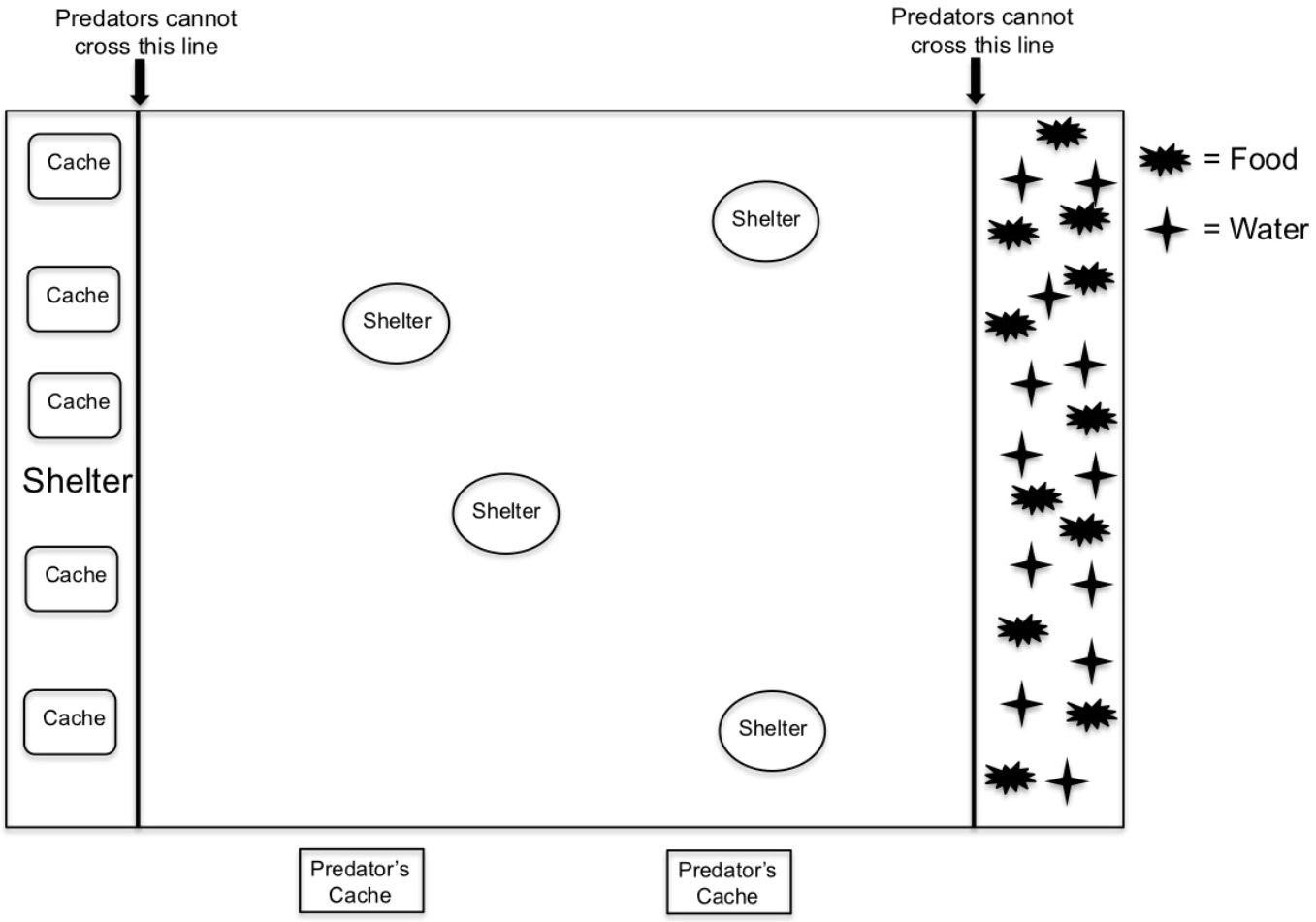
Optional Extension

No matter where in the country you are, there are birds of prey (raptors) that are either soaring high above skyscrapers or sitting on a fence post at eye level. Point this out to the students. If you had them talk about what predators they have seen in the optional extension for Unit 1, see how many now recognize that they have seen birds of prey. The idea is to spark their interest, encourage them to keep an eye out, and pursue any curiosities. Use the knowledge that birds of prey are all over to your advantage and consider looking up what species are found in your area and taking students outside to see what you can find. If you have access to a field guide, do some basic identification with them. Discuss possible ways humans could affect their habitat both positively and negatively.

Predator Prey Survival Field Setup:



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