



Becoming Squirrels

Season: Fall
Grade: K-3rd
Time: 1-1.5 hrs.

What are our basic needs for survival and how are they met? How do squirrels meet their needs in preparation for winter?

Objectives: Students will understand that animals have different strategies for surviving winter. Students will understand that all living organisms have basic needs that must be met for survival. Students will list human and animal survival needs.

Next Generation Science Standard:

K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

K-ESS3-1 Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

Common Core Math Standard:

CCSS. Math. Content.K.MD.B.3

Classify objects into given categories; count numbers of objects in each category and sort the categories by count.

CCSS.Math. Content.1.MD.C.4

Organize, represent and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category and how many more or less are in one category than in another.

Procedure: Begin this lesson with a discussion of what our needs are to survive (food, water, shelter). How are these needs met? How do we get our food, water and what are our shelters? How do we get food during winter? Do we eat anything different during the winter?

Next discuss the needs of squirrels. What sort of food do they eat? How do they get their food during winter? How much food do you think squirrels need to store to survive the winter?

Now you may begin a role play that will carry through the rest of the lesson. Give each student a small bag to represent the expandable cheeks of squirrels. From this point on, the students are no longer human, they have become squirrels. It is now their job to prepare for the coming winter.

Squirrels need to eat 7.5% of their bodyweight every day in order to survive. That would be like a 50lb kid eating almost 3.75lbs of food every day! A 180lb man would have to consume 13.5lbs of food a day just to survive! Remind students that squirrels must eat throughout the winter when there is a thick layer of snow on the ground, covering much of their food. In order to survive, squirrels need to store their food in places that they can access throughout the cold winter months. Humans have cabinets, pantries, and refrigerators to store their food in. Squirrels have to use holes in the ground, logs, or trees to store their food.

Resources/Materials:

Squirrel cheek pouches or small bags, scale, access to a forest with nuts, cones or other squirrel food

Safety: Discuss safety concerns and tripping hazards when running through the forest.

Vocabulary: adaptation, cache

Back in the Classroom:

Check out videos on how squirrels move.



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What are our basic needs for survival and how are they met? How do squirrels meet their needs in preparation for winter?

Challenge the students to start by attempting to collect one day's worth of food. This could be acorns, pine cones, beechnuts, or any other squirrel food that would store through winter. Avoid collecting mushrooms as some can be toxic. Depending upon the grade level and math skills, you could have students calculate how much food weight they need to collect or follow these averages:

6-7 year olds should collect 3.5lbs of food
8-9 year olds should collect 4lbs of food
10-12 year olds should collect 6lbs of food

Younger students should be given a bowl or large bag that they can hide to serve as their food stash. Older students should be able to find or create their own caches. Remind older students that like squirrels, they should be creating several caches of food throughout their territory. As the allotted collection time is drawing to a close, begin going around and weigh the food that they have collected. Once individual caches have been weighed, put all of the gathered food in one large bag and weigh how much the entire class of squirrels has collected. Students can bring caches back to classroom to classify food items and sort them into categories. What source of food was easiest collect and why? Students can create a picture or bar graph can be used to represent each source of food (seeds, conifer seeds, acorns).

How many squirrels were able to collect a day's worth of food? If no one was able to collect a day's worth of food, how many squirrel students would it take to collect the daily needs of one squirrel? What were some challenges that student's faced? During the fall, squirrels not only need to eat to survive the day, they also need to store extra food to survive the winter. Every day during the fall, a squirrel must collect double or more the amount of food it normally does in order to make it through the winter. It is no wonder that squirrels are always darting about at full speed!

Extensions:

Students can compare and contrast what percentage body weight other animals need to eat every day. Make a chart showing how much each animal has to eat.

Accommodations: If you do not have a forest with acorn, pine cones, or other squirrel food, you can substitute other materials such as small sticks to represent food.

Assessment Plan:

Students can write in their nature journals about what a typical day in the life of a squirrel might look like. The focus should be on the collection of food.

Resources: Here is a link to the daily food and water requirements of many North American animals: <http://www.env.gov.bc.ca/wat/wq/reference/foodandwater.html#table4>