

Mapping Squirrels



Submitted By:

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Overview

Students will learn how to use and make a map of their citizen science Project Squirrel study area. Students will review descriptive animal movement words and directional words such as up, down, left, right, above, below, and next to. Students will make a map of their class's squirrel study area and record the squirrel's movement on the map.

Grade Levels

Kindergarten, 1st, 2nd

Curriculum Correlation

K.P.1.1, K.P.1.2, K.G.1.1, K.G.1.4 1.G.1.2, 1.G.1.3 2.G.1.1

Duration

Two 45 min class period and 15 minutes each day for students to take turns observing and mapping study squirrel movements.

Location

Classroom and Citizen Science Project Squirrel study area

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Materials

Activity 1: Story Mapping: Book, Printouts/photocopies of major characters/event in the story, and teacher-made story map

Activity 2: Mapping Squirrel Movement: Examples of different maps (town/road map, trail map, fire exit map, zoo map, or NC Arboretum map, Masking or Painter's tape, Cut paper squares to represent different classroom furniture, and Art materials for map making (paper, colored pencils, crayons, clipboards)

For Your Mapping Station (This is at the same place students are already doing their citizen science observations): Binoculars, Photocopies of the class map of the study area, Art materials (colored pencils or crayons), Viewable clock and calendar



Learning Targets

1. I can describe how a squirrel moves through the study area. Using words such as bound, leap, and climb.
2. I can describe the position of an object on a map using positional terms such as left, right, above, below, beside, far, and near.
3. I can use a map to locate my desk in the classroom or an animal outside.
4. I can use and make a simple key on a map.
5. For 2nd grade: I can use cardinal directions and give verbal directions to explain where something can be found on a map.

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Educators Information

While many skills have become obsolete in the digital age, map reading remains an important tool for building children's spatial reasoning skills and helping them make sense of our world. Mapping Squirrels lesson plan was developed to scale up or down to meet your student's needs. Curriculum standards for Kindergarten, 1st, and 2nd grades all require students to use directional words and to develop spatial reasoning skills.

Suggested Vocabulary:

K.P.1.1- in front of, behind, between, on top of, under, below, and beside

K.P.1.2- straight, zigzag, round and round, back and forth, fast and slow

K.G.1.4- near/far, above/beneath, left/right, north, south, east, west

1.G.1.2, 1.G.1.3- absolute vs. relative location, cardinal directions, map symbols and directions

2.G.1.1- map title, compass rose, legend/key

Procedure

Activity 1: Story Mapping

Engage Phase: You can use any book where the main character is traveling to different places and/or meeting different characters. I am using Going on a Bear Hunt by Helen Oxenbury as my example for story mapping. This book works great for Kindergarteners learning directional words. Before the activity I prepared a map of the places the family travels through, along with a picture of the family and the bear.

As I read the story, I have students help me place the family and the bear in the correct place on the map. After reading the story, I review with students the path that the family and bear had traveled, using positional words and ordering the story, 1st, next, last.

Explore Phase: Next head outside to the school yard with students to participate in a story trail. Before the activity print out signs with the different place/habitats the family visited and a hand-drawn map of the locations in the school yard.

Explain to students that you will be following the hand-drawn map to find all the locations from the

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story. You can make a bear cave with tables and a sheet and hide a stuffed bear for students to find. Make sure that just like in the story they find the bear cave but then back track through the map back “home”.

I got [Going on a Bear Hunt](http://www.pinkstripeysocks.com/2014/07/3-easy-bear-hunt-activities-with.html) illustrations from Pink Stripey Socks, <http://www.pinkstripeysocks.com/2014/07/3-easy-bear-hunt-activities-with.html>



Activity 2: Mapping Squirrel Movement

Engage/Explore Phase: Before class, the teacher should make a large map of the classroom on the floor with masking tape or painter’s tape so that students can physically walk through the map. Rough out the main components of the classroom, such as the door, blackboard, and windows. Make paper squares to represent the student’s desks with their names on them. Make this map as large as you can so a few students can physical fit into the classroom map and walk around exploring it.

Begin the class by letting students physically explore the classroom map you have made on the ground. Ask students if they have ever seen or used a map to find a place or object. Many students have probably seen road maps or used a very simple treasure map.

Invite students to guess what the map is of that they are currently walking through. Explain

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that this is an incomplete map of their classroom and that you need their help to finish it.

Hand each student a square of paper with their name written on it, or you can have them write their own names. Once student have their paper square, explain that this will represent their desk and that students are to place them in the map where their desk usually sits.

Once everyone has placed their desk where they think it should go, review with students to see if anyone needs to change the location of their “desk”.

Explain Phase: Have a discussion with students about when and why we use maps and how we use them. Maps help us explain how to find a place or object. Ask students if they have seen their families ever use a map, what did they need the map to find? People use maps to find their way around roads and trails. People may use them to find their way around buildings and homes. Show students examples of different maps such as, a town map, forest trail map, fire escape map, and zoo or arboretum map.

Discuss with students that scientists can also use maps to learn more about wild animals. By using a map, scientists can record the direction animals come and go which can tell scientist where an animal might live and how large its home range might be. By keeping record of what time an animal visits the study area you can learn more about behaviors such as what time of day the animal is most active and how they may react to other animals. Scientist can set up camera to record and map where an animal is moving. They can also keep track of an animal’s movements using a tracking collar that has GPS monitoring.

Explain to students that they are going to act as scientist to record your squirrel’s movements through the study area. You are going to go outside to your study area to draw a map to better study your squirrels.

Elaborate Phase: Head outside to your squirrel study area. Have everyone sit in your observation area or just outside your classroom windows. You can either have each student draw their own map of the area or draw a class version together. Make sure to map out the trees, feeders, and any other large physical features in the area such as, large rocks, bird bath, bench, etc. With 1st and 2nd graders you will need to add the cardinal directions to your map. Make sure to have a compass handy to help you find the direction of north in relation to your study area and record on your map.

When the map is finished you can review squirrel movement and positional words. Have students act as the squirrels and explain that you will point to a position on the map and they must

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go to the physical location. Example: Point to the northeast corner of the map and ask to student to walk to that location.

Once every student has had a chance to practice walking around your mapped area, acting out squirrel movement, and positional words head back to the classroom.

Setting up your Squirrel Mapping Station:

Materials: Make photocopies of your Squirrel Study Map, this is the map you made with the class, Binoculars, Colored pencils or crayons, and Access to a clock and the date

This study will very dependent on grade level. You can assign students a time slot to observe and map squirrel activity or you can make the station available to any student during the day. In order to complete the assignment students must take a copy of the map, record their name, time of day, and the date. Students are to observe squirrels in their study area and record squirrel movement on the map, using a different color for each squirrel they record. You can tell students that they only need to follow one squirrel at a time, and it is ok if it is the same squirrel visiting multiple times. Students should draw lines around the map showing how the squirrel moved through the study area, with a new color for each squirrel.

After a week of completed study maps you can bring the class together to track/graph the squirrels' movements. Take note of where the squirrels enter the study area and whether they go straight for the food/water, or go to a tree first. Why might the squirrel go to a tree first, is it being cautious of predators? Also take note of the direction squirrels come and go, do they leave in the same direction they came? You can also count the number of squirrels that visit each day.

Over the course of the year, you can also look back on your student's maps to see if there are busier or slower visitation times, if squirrels visit more frequently at different times of year or different times of day.

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Supplemental Reading

If students need more introduction to maps and positional words before this lesson, check out the following websites for fun activities:

1. Mapping the Classroom by National Geographic:
<https://www.nationalgeographic.org/activity/mapping-classroom/>
2. Mapping Storybooks by National Geographic:
<https://www.nationalgeographic.org/activity/mapping-storybooks/>
3. Backyard Safari and Map Activity by No Time For Flash Cards:
<https://www.notimeforflashcards.com/2014/07/backyard-safari-map-activity.html>



Resources

Books about Mapping

Kindergarten & 1st grade:

1. As the Crow Flies by Gail Hartman
2. Follow that Map! By Scot Ritchie

2nd grade:

1. There's a Map on My Lap! All About Maps by Tish Rabe

Books about Squirrel for Story Mapping Activity:

1. Earl the Squirrel by Don Freeman
2. Squirrels Leap, Squirrels Sleep by April Pulley Sayre

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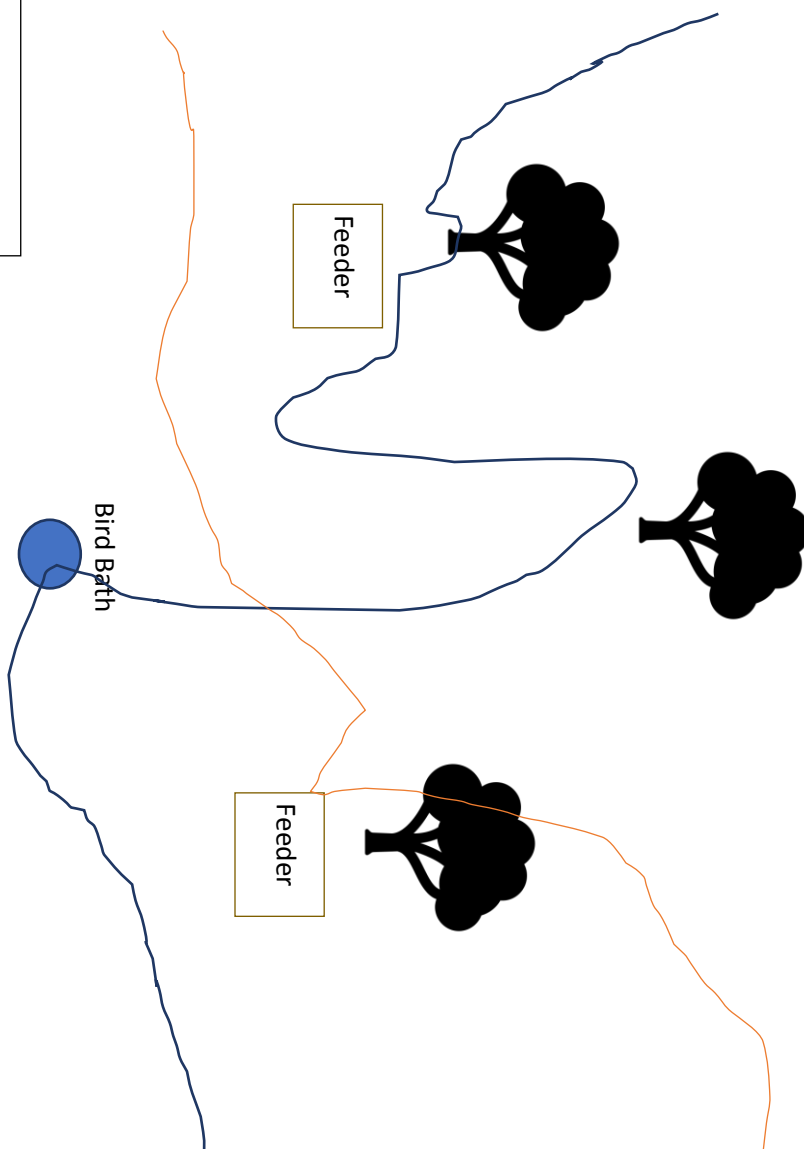
Example Map Worksheet

Observer's Name: _____

Date: _____ Time of Day: _____



Key
Blue Line: Squirrel at 10am
Orange Line: Squirrel at 10:08am



Map of Squirrel Study Area