**Sabrina Schermerhorn**

**Lesson Topic: United States North Woods Animal Tracks**

**Number of Students: 4- 6**

**Grade Level: 4th Grade**

**Allotted Time: 20-30 Minutes**

1. **Objectives**

* After being given an animal guidebook about animals found in the North Woods of the United States of America and photographs of six different animal tracks, students will be able to correctly use their knowledge of standard measurement and references to successfully identify the correct animal name for each photographed track.
* After being given an animal guidebook and a worksheet with six animal names, students will accurately use the reference material to correctly illustrate each animal’s track and write at least 3 facts about each of the selected animals.

1. **Learning Standards**
2. **New York State (NYS) Learning Standards:**

**NYS English Language Arts Learning Standards: (Elementary)**

* Standard 1: Language for Information and Understanding
* Listening and reading to acquire information and understanding involves collecting data, facts, and ideas; discovering relationships, concepts, and generalizations; and using knowledge from oral, written, and electronic sources.
* Standard 2: Language for Social Interaction
* Oral communication in formal and informal settings requires the ability to talk with people of different ages, genders, and cultures, to adapt presentations to different audiences, and to reflect on how talk varies in different situations.

**NYS Science Learning Standards: (Elementary)**

* Standard 1—Analysis, Inquiry, and Design
* Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions.
* Standard 7—Interdisciplinary Problem Solving
* Students will understand the relationships and common themes that connect mathematics, science, and technology and apply the themes to these and other areas of learning.

**NYS Mathematics Core Curriculum: (4th Grade)**

* Connections Strand

###### Students will recognize and apply mathematics in contexts outside of mathematics.

* Measurement Strand

###### Students will determine what can be measured and how, using appropriate methods and formulas.

1. **National Learning Standards:**

***English Language Arts***

[NL-ENG.K-12.1](http://www.educationworld.com/standards/national/toc/index.shtml#numbers) READING FOR PERSPECTIVE

Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world

[NL-ENG.K-12.7](http://www.educationworld.com/standards/national/toc/index.shtml#numbers) EVALUATING DATA

Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and nonprint texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.

***Science***

[NS.K-4.3](http://www.educationworld.com/standards/national/toc/index.shtml#numbers) LIFE SCIENCE

**As a result of activities in grades K-4, all students should develop understanding of …**

* The characteristics of organisms
* Life cycles of organisms
* Organisms and environments

1. **Materials**

* North Woods Tracks Guides
* Track Identification Sheet
* 6 labeled photographs of different animal tracks
* Photograph of a person
* Track of a Person
* Animal Track and Information Chart
* Photographs of six selected animals (bobcat, moose, black bear, wild turkey, red fox, and whitetail deer)
* Track Pictures and Information Cards to match each of the photographed animals

1. **Diverse Learners: Possible Modifications**

* Large print guidebooks can be made for children with visual impairments
* Work can be done in partners to encourage children who have difficulty with cognitive processing or social skills
* Children who are second language learners can make a mold of their own foot in play dough, and shown how their “ track” matches a picture of them in order to model the objective of the activity

1. **Steps/ Guiding Questions**
2. *Introduction*

* Show a picture of a beach with no footprints and show a picture of a beach with human footprints. Explain that people have only been to one of these locations and ask the class, which location they think that people have been to and why? (You want them to explain that the tracks helped them determine that a human was present)
* Explain that tracks are an important part of many different types of investigations (i.e. scientists studying animals habits or police investigating crimes, or a hunter searching for the normal grazing area of a certain animal)
* State that the objective of the lesson is to recognize the tracks that certain animals make and how the size and shape of the track play a role in determining the animal that the track belongs to.
* Review the six photographed animals and their names, and a picture of yourself
* Explain that you are going to present each student with a track and that they are going to make their best prediction of what animal they think matches the track. Model the activity by matching a human track with a picture of yourself.
* Pass out the tracks and give students about 1 minute or less to place their track with a picture (Students can be allowed to place two tracks at one photograph, if two students disagree where the track should be placed).
* Explain that by the end of the lesson the class will be able to determine if the predictions were right and that at the end of the lesson they can change the tracks around as necessary.

1. *Main Activity*

* Pass out the animal guidebooks and give students the packets of 6 photographed tracks and the Track Identification Sheet.
* Tell them they will use the guidebook to determine based on the size (measured in inches) and the shape of the track, what animal the track belongs to.
* Model identifying the first track with the whole group.
* Working as partners, allow students 5 to 8 minutes to identify all the animals
* Review their answers as a whole group and have students offer an explanation for how they determined the animals named.
* Pass out the Animal Chart and instruct students to use their guidebooks to illustrate the selected animals tracks and to write at least three facts about each animal.

1. *Closure*

* Once the majority of students have finished the worksheet encourage them to look at the tracks they placed on the photographs and think about any changes they may want to make to their original predictions.
* Once everyone is finished ask students if they feel that any of the tracks should be changed around. Tell students to give thumbs up, once they feel each track has successfully been matched with its picture.
* Then give each student a card with 3 facts and give them a minute to match those written facts with one of the photographed animals.
* Once everyone has matched their facts with a photograph, read through the descriptions of each animal and have student’s give thumbs up, down, or in the middle (unsure), if they think the information has been accurately matched.
* Collect student materials

1. **Assessment**

* Students knowledge will be assessed through their completion of the objectives and their participation and accuracy in the closing activity

1. **Possible Extension Ideas**

* Students can make a plaster mold of their footprint or step in mud or other loose soil and take a picture of their track. The students can then try matching their classmate’s track to their picture. You can also have students write three facts about themselves and make a “CLASS Guidebook” that includes each person’s track, picture, and fun facts.
* Students can create their own animal guidebooks prior to this activity as part of a larger unit or project. For example small groups could be assigned an animal as part of their animal project and one requirement of the project is completing a card with the animal’s track, name, and three to five facts. This card can then be copied and duplicated for all of the students in the class.