

## **Overview:**

Students observe the physical characteristics of animals and plants. A local Elder shares knowledge of plant changes over the years.

## **Objectives:**

The student will:

- observe and classify leaves; and
- classify Alaskan plants

## **Targeted Alaska Grade Level Expectations:**

### **Science**

- [3] SC1.1 The student demonstrates an understanding of how science explains changes in life forms over time, including genetics, heredity, the processes of natural selection, and biological evolution by sorting Alaskan plants and/or animals using physical characteristics (e.g., leaves, beaks).
- [3] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.
- [3] SF1.1-1.3 The student demonstrates an understanding of the dynamic relationships among scientific, cultural, social, and personal perspectives by exploring local or traditional stories that explain a natural event (L). Cross-referenced with SA3.1

## **Materials:**

The following materials should be provided for each small group (in a container):

- Hand lenses (2-3 per group)
- Collection of local leaves from several different species and/or pictures of leaves (15-20)
- Centimeter rule
- Paper clips (10-12)
- Gram weight scale

The following materials should be provided for each student:

- Science journal
- Plant identification guide (or look online at: [www.plants.usda.gov](http://www.plants.usda.gov))

## **Vocabulary:**

**characteristic** - something in the appearance, activity or behavior of a living thing that is determined by the genes; a trait

## **Activity Preparation:**

Prepare grouped materials in containers.

## **Activity Procedure:**

1. Ask students what they know about physical characteristics of plants and animals. Write student responses on the board by listing them in two columns, one for plants and one for animals. Discuss the definition of the word characteristic.
2. Tell students they will play a people sort game that will be using physical characteristics. The teacher secretly chooses a physical characteristic of students (hair color or length, eye color, taller or shorter than the teacher, etc.) and calls students that have that physical characteristic to the front of the room. Ask

students to guess which physical characteristic has been chosen. Do this several times with different characteristics and then play the game with more than one characteristic.

3. Discuss and compare the physical properties of humans that were used in the game and other animals. Add any new ideas to the list on the board.
4. Tell students they will be classifying leaves by physical characteristics. Divide students into small groups. Give each group the container of materials prepared earlier. Ask the groups to classify the leaves using physical characteristics using the senses of touch, sight, sound and smell. Tell them to use any of the tools provided. Ask students to record the different ways the leaves were classified by the group in their individual science journals.
5. Share the various classifications as a class. Ask students: How did you classify the leaves? Which tools did you use? Why did you use those tools?
6. Go outside and have each student collect four or five different plants from the local area. Come back to the classroom and classify the leaves in as many ways possible. Each student should record the classifications in their science journal.
7. Have students share their science journal entry with a partner.
8. Invite a local Elder to visit the classroom to share how plants in the area have changed since they were younger..

## **Extension Ideas:**

1. Classify a collection of Alaskan animal pictures by physical characteristics.
2. Ask students to create Venn diagrams of animals and plants using physical characteristics.
3. Invite a botanist/scientist to visit the classroom and share information about plants.
4. Invite a local gardener to come and share about plants they grow.
5. Read the following books aloud: *Amazing Arctic Animals* by Glassman, *Over in the Arctic* by Marianne Berkus, *This Place is Cold* by Vicki Cobb.
6. Construct a leaf press using local leaves.