

Connie Tracy
6th Grade
Dzantiki' Heeni Middle School
Juneau, Alaska

LCM Lesson Plan
Investigating Plants of the Tongass

Grade Level: 6th Grade

Alaska State Standards:

Science A14, B1, C2, C3
Math A3, A6
Cultural B2, E2
Art A5

Science Concept: Students will recognize and identify some plants from their local ecosystem, including plant signs during the non-growing seasons.

Scientific Terms: temperate forest, annual plants, transect, abundance, dominant plants, dormant, habitat, ecosystem

Materials: plant journals
Clipboards
Yarn 3 meters in length
Small container for soil samples
Plant data sheet 1 and 2

Gear Up: Take the class on a walk behind the school on the new trail. Point out various plants, trees and stages of growth. Discuss what the plants are and how to identify them. Identify edible and medicinal plants. Sketch the various plants in the plant journal and label. While walking on the trail, point out plants to see what the students remembered from the tour of the Tongass and to see if they took good notes. Make a game out of identifying as many plants as you can. You will be surprised how quickly the kids learn the various plants. Invite an elder to come on the walk and discuss the medicinal values of the plants.

Process Skills: observing, communicating, predicting, and recording

Explore: The students will locate and draw as many plants as they can find among **transect** lines. They will include any plants within five centimeters to each side. Demonstrate how to draw a plant and note which characteristics help to identify one plant from another. Shape, size, edges, and texture of leaves are important.

Generalize: Questions might include:

Are leaves found opposite one another on a stalk or do they alternate? Does the plant hold dried flowers or fruit? Is the plant stem woody or easily bent? Does this plant grow under trees, on rocky soil, or in wet places?

Process Skills: observing, communicating, predicting, and recording

Explore: Distribute the “Plants Data Sheets 1 and 11” to each group. Ask each group to lay its transect in a straight line. Have students identify their working area of 5 centimeters to each side of the line.

In order for everyone to have a task, split it up. The following roles could be rotated so everyone experiences each assignment: Project Coordinator (makes sure everything runs smoothly and watches for duplication in plants that are drawn), Plant Illustrator, Plant Counter, a Plant Classifier (to key out names for plants), and a Plant Recorder (to record the group’s answers to the worksheet).

Students begin surveying. They will describe each kind of plant and then keep a tally of how many of each kind grow along their transect. Students can each draw plants, if desired, checking with the coordinator to avoid duplication. After the observation/drawing session is complete, the Plant Recorder should collect all drawings.

Generalize: When all plants along the transects are drawn and recorded, distribute the Science Cards (see Plant Transect Science Card handout) and ask the groups to sit together and answer the questions.

Explore: Give each group a small cup to collect soil samples to take back to the classroom to make a “mystery garden” (see Plant Transect Science Card handout).

Process Skills: observing, communicating, estimating, predicting, recording, inferring

Generalize: In class, share information and drawings on the plants. What kinds of patterns do you see with the leaves? What kind of growing patterns did different groups find? Why do certain plants grow better in some places than others? Focus the discussion on the **habitat** of the plants.

Process Skills: communicating, inferring, questioning, interpreting data, observation

Apply/Assess: Each group will work together to make a Tongass Plant Identification book which will include the following: Pressed example of each plant found, the scientific name for each plant, the Tlingit name for each plant, medicinal uses, classifications, description of plants and its habitat. The herbarium will be used in future Tongass studies throughout the year. Each plant book will be scored on a scoring guide. Before collecting specimens discuss the care of the forest and environment. (See Tongass Plant Identification Activity handout)

Plant Data Sheet I

List of Plants

Names _____ Date _____

Location of Site _____

Plant Number	Plant Name or Description	Number of Individual Plants (use tally marks)
Example	Fireweed	III

Plant Data Sheet II
Plant Drawings

Plant # _____ Name _____	Plant # _____ Name _____
Plant # _____ Name _____	Plant # _____ Name _____
Plant # _____ Name _____	Plant # _____ Name _____

Name:

Science Card

Plant Transect

1. **Biodiversity.** How many kinds of plants did you find along your transect line?
2. **Identification.** If you haven't already, try to identify the most common plants by using a field guide to plants. If you cannot find the name of the plants in your guide, or if a field guide is unavailable, record details about the plant to help you identify it later.
3. **Dominant species.** Which three kinds of plants were the most abundant on your transect? These "dominant" species will have the highest numbers in the third column of your "Plant Data Sheet 1." Make sure you have counted individual plants, not every leaf or stem. Count a moss clump as one plant. Write the total for each plant on its drawing.
4. **Dormant annual plants.** Depending on the time of year and where you are, many plants may be dormant, which means you won't clearly see their leaves, flowers, or even stems. Describe the kind and amount of the following plant remnants that you found on your transect:
 - a. Dead leaves or needles
 - b. Dead flowers
 - c. Seeds
 - d. Roots above the ground
5. **Mystery gardens.** You can find out more about what plants are in the soil as seeds by taking a small sample of soil back to the classroom, putting it in an open container, watering it well, covering it with plastic, and placing it in a sunny spot. Watch your mystery garden closely for 2-3 weeks and record what happens.

Tongass Plant Identification Book

The purpose of this activity is to create a plant book that will reinforce your understanding of Tongass plants. You may find the skills used to create this book will be of use to you during the Tongass unit and house-wide project.

Directions:

Follow the procedures below.

1. With your group, decide a common theme for your reference book (examples: life cycle of the spruce, plants deer love, common plants along the Switzer boardwalk, guide to lip balm plants).
2. As a group create a common page format. Draw and label the way each page will be layed out and share it with Mrs. Tracy before going any further.
3. Each person in your group will be responsible for:
_____ Two pages of plants
_____ One page of descriptive writing showing a connection to the plants
_____ One paragraph about themselves for the author page
4. Your book must include:
_____ Title page
_____ Common and Latin name of plants
_____ Physical description of the plants
_____ Visual of plants (illustration, photo, ink print, pressed, rubbing)
_____ Description of habitat where the plants is found
_____ Traditional use or unique fact
_____ Author page
_____ 16 pages
_____ personal story describing your connection to the plants
5. Rough draft due _____, Final draft due _____
6. You will receive a group grade and an individual grade for the book.

Name _____

Investigating Tongass Plants Scoring Guide

	Meets	Exceeds	In Progress (N)
Data Table Completion	<ul style="list-style-type: none"> • all information is correct • Data table is complete and logical • Includes at least 4 different plants • Plants are tallied correctly • Pictures are complete and labeled 	<p><i>In addition to meets:</i></p> <ul style="list-style-type: none"> • Data table includes 5 or more different plants • Plants are tallied and estimation is used to determine how many plants total in the transect • Plant labels and pictures have detailed descriptions including what the plant is, habitat, where it was found, what classification 	<ul style="list-style-type: none"> • Information is incorrect • Data table is incomplete and illogical entries are not explained • Pictures are not completed or labeled
Science Card Understanding	<ul style="list-style-type: none"> • 4 categories are complete and accurate • understands the following terms and can explain the meaning in own words: biodiversity, dominant species, dormant annual plants • identifies plants in transect • collects soil sample for mystery garden 	<p><i>In addition to meets:</i></p> <ul style="list-style-type: none"> • All 5 categories are complete and accurate • Detailed answers describing dominant plants and dormant annual plants • Mystery garden observations recorded in plant journal weekly • Creates transect using dormant plants and compares transect to non-dormant plants 	<ul style="list-style-type: none"> • Completed only one category • Did not understand dominant and dormant plants or biodiversity • Did not collect soil sample for mystery garden • Did not complete transect in given time
Participation & Work Habits	<ul style="list-style-type: none"> • individuals come prepared & ready to work • group/individuals stay focused and complete tasks cooperatively • turned in on time • groups work together 		<ul style="list-style-type: none"> • does not come prepared to work • group/individual often off task • not turned in on time • not working together as a group

Name _____

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