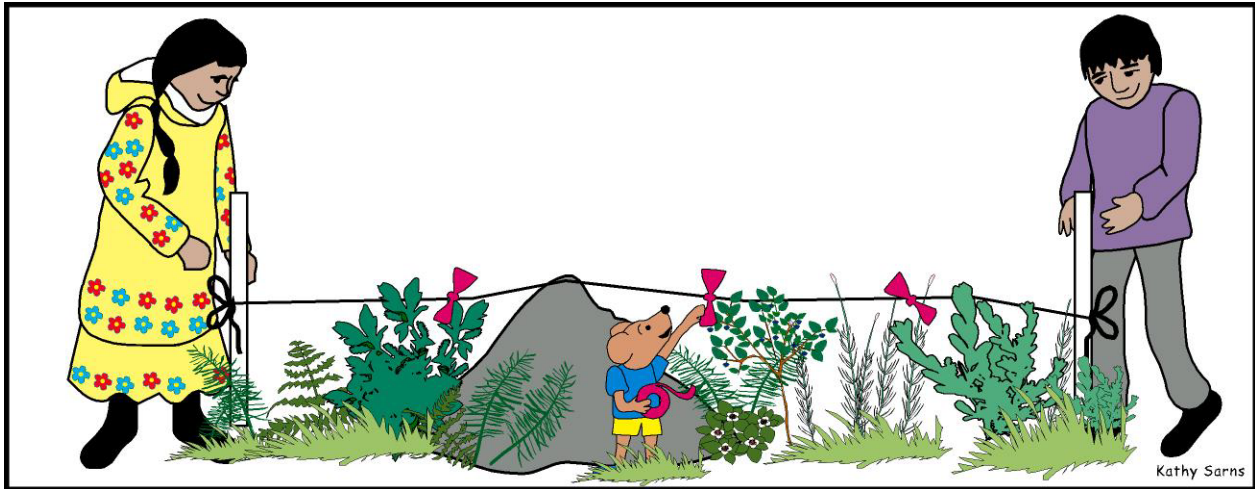


TRANSECT STUDY



Grade Level: 6-12

Alaska State Content Standards: MA2, MA3, MA6, ME2, ME3, SA15, GeoC3, IV4

Subject: Science, Math

Skills: Classification, Generalization, Observation, Research

Duration: 2 class periods

Group Size: 4

Setting: outdoors

Vocabulary: transect

OBJECTIVE

Students set up a transect and observe/classify plants found on it.

TEACHING STRATEGY

In this outdoor activity, students prepare transects following their field notebook guidelines. Students then identify those living and non-living items on their transect.

MATERIALS

- 24' length of string for every four students (marked into four equal sections)
- 2 stakes for every 4 students (sticks, rulers, or pencils can also be used)
- 12" ruler for each student orange, green, red, or yellow flagging tape
- Transect Study Field Worksheet

- "Don't Tear Me Apart or Crush My Home"
- 1 field guide to the plants in your area for every 2-4 students (see references)

TEACHER BACKGROUND

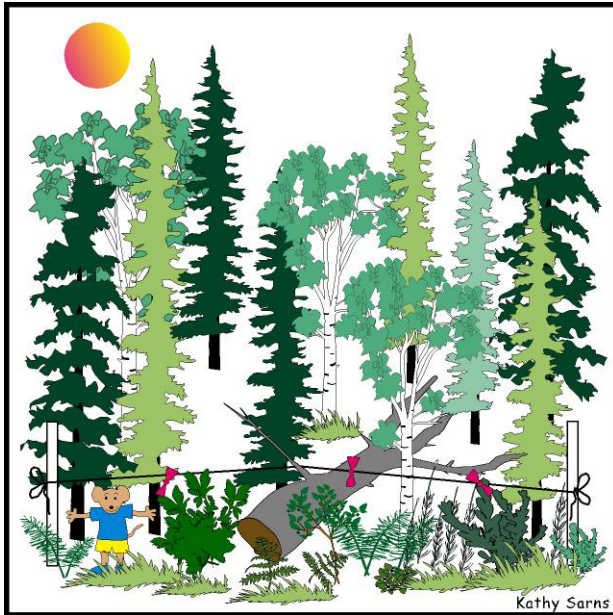
A **transect** is a straight line profile that creates a cross-section of an area to study plants. Transects are used by botanists and biologists to get representative samples of an area's vegetative cover. The following transect protocol is an accurate, easy tool for students to use.

ADVANCED PREPARATION

Choose a site to visit which has a large enough area for 8-10 25 foot transects.

PROCEDURE

1. Review "Don't Tear Me Apart or Crush My Home".
2. Show students how to set up a transect by stretching their string into a long line along the ground and staking it at either end. The string is then divided into 4 equal sections, marking the string with flagging tape. Those plants touching the string are identified and recorded. The non-living components that fall directly under the string are also identified.



3. Divide the class into teams of 2. Explain that the students will be following the directions on the Transect Study Field worksheet, looking at both the living and the non-living components. Encourage them to take accurate notes for the evaluation portion of the lesson.
4. Take students outdoors and have them follow the directions on the worksheet pages.

5. Back in the classroom, have each team make a bar graph to represent the number of herbs, shrubs, mosses, lichens and trees along the transect.
6. Have each group present their data to the class and add it to a large whole class graph on the board.
7. Following the graphs, ask the students the following:
 - a) What is the average number of plants everyone found?
 - b) How many different species did the class find?
 - c) Did everyone find the same things or were transects different? Why?
 - d) (If appropriate) Why do you think different plants were found in different areas? Why aren't (or are) they the same?
 - e) Did any of the results surprise you?
 - f) What was the most interesting thing you observed?
 - g) Do you think if you made a longer transect, maybe 96 feet long (4 times what you did) would you find different things? Why or why not?
 - h) Why do you think transects may be important tools scientists use when studying tundra or boreal forests?

EVALUATION

Leave transects in place on the study site. After you have completed your follow-up discussions, have each team trade their notebooks and graphs with another group. Revisit the area and have each group identify another group's transect based on what they

reported. Ask the following questions again:

- a) Did anything surprise you?
- b) What was the most interesting thing you observed?
- c) Do you think if you made a longer transect, maybe 96 feet long (4 times what you did) would you find different things? Why or why not?
- d) Why do you think transects may be important tools scientists use when studying tundra or boreal forests?

REFERENCES

Adapted with permission from Alaska Wildlife Week Unit 5 Alaska's Forests... More Than Just Trees, by Susan Quinlan, Alaska Department of Fish and Game, 1987 and Alaska Wildlife Week Unit 6: Alaska's Living Tundra, by Susan Quinlan, Alaska Department of Fish and Game, 1988.