

# Shrubs of the NWT

**Objective:** To investigate some NWT shrubs and their specific characteristics

**Introduction:** Plants are important providers of food and medicine, gas exchange and water cycling. While there may be fewer plant species in the North, those that thrive here can be found in abundant quantities. In addition, knowledge of their identification and value is becoming less common. This lesson plan aims to introduce students to some northern plant species and get them excited about plant watch.

## Curriculum Connections:

Unit B – 1.1-1.4k, 1.1-1.3s,

Unit C – 1.1-1.3s. 2.1s

## Supplies / Materials:

- An area with 2 of the following plants: bearberry, cranberry, saxifrage or mountain avens
- PlantWatch Book or computers to access Plant Watch plant descriptions online
- 4m long strings (1 per group of students)
- Cameras and/or sketch books
- Spade or soil sampling kit
- Small Ziploc bags
- Nature journals, worksheet or blank paper for taking notes
- Pencils or writing materials to make notes



## SCIENCE FOCUS

### Lesson Subject

Biology 20

### Topic

Ecosystems, Photosynthesis

### Location

Field (possibly start in classroom)

### Length

100 mins



**Hook:** Ask students to reflect on the value of plants to humans and to ecosystems.

**Intro Activity:** Introduce students to the plants they will use. They will need to learn to identify their plants so have them make sketches and write down important information based upon the plant watch book (branching pattern, leaf identification). This can be done through a simple worksheet with a variety of pictures of plants found in their community or can be done through collecting a sample of plants outside and letting them examine them hands on in the classroom, depending on the weather and time of year.

**Main Activity:**

**1)** Have each student choose a plant that interests them, or get them to choose a plant in a small group of 2-3 students, depending on class size and the number of plants you provide.

**2)** Have them go outside to collect several samples of their chosen plant. For example, if they choose a pinecone, get them to gather 2-3 pinecones. Remind them that each sample should be different in some way (size, colour, age).

**3)** Have students look at their samples closely and with a magnifying glass if possible for more detail. Get them to try and identify different parts of their plant and make notes on their sketch.

**Independent Student Work:** Have students create a write-up about their plant either in a worksheet or in their plant journals. They can use data collected from their observations and plant watch book. Their write up should include a sketch, a few identified parts of the plant and a reflection about the activity. Perhaps they could outline a description with explaining all the features of the plant and then end with a "Who Am I"? See if the students can guess the identity of the plant. This might work for your class!

**Conclusion / Review:** Ask students to share a bit about what they have learned. Is there anything to add to the functions of plants? How do they think ecosystem factors are interacting?

**Homework:** Finish the plant write-up and be prepared to share what they have learned about their plant with other students who examined other species.

**Resources:**

1. <http://www.saps.org.uk/secondary/teaching-resources/157-measuring-the-rate-of-photosynthesis>

2. [http://www.isa-arbor.com/events/conference/proceedings/2013/FINI\\_ISA2013\\_shrubs\\_paper.pdf](http://www.isa-arbor.com/events/conference/proceedings/2013/FINI_ISA2013_shrubs_paper.pdf)

**Extensions:**

1. Participate in Plant Watch: <https://www.naturewatch.ca/plantwatch/>
2. Have students estimate the carbon dioxide uptake of an area of shrubs or plants using the data from their photosynthesis measure or an average from resource 2 and the number of growing days in your community.
3. Have students compare and contrast the similarities and differences in the characteristics of plants that live in the Northwest Territories. Is there a pattern or common thread to the adaptations of these plants? If so, what are they?