

# Sexual and Asexual Reproduction

**Objective:** Introduce different reproductive strategies using Northern plant examples

**Introduction:** Several plants have the ability to reproduce both asexually and sexually. Since they need to rely on external factors (wind, animals, water etc) for sexual reproduction, asexual reproduction allows for a more consistent local distribution. However, it doesn't have the protective and adaptive attributes of sexual reproduction. This lesson aims to introduce different methods of plant reproduction to students and encourages them to think about how the different strategies apply in Northern climates.

## Curriculum Connections:

Unit A: 2 – reproductive strategies (sexual and asexual reproduction)

## Supplies / Materials:

- Pictures of different reproductive methods (see **resources** below)

**Hook:** Show an example of a plant stolon (Resource 1). Have students guess at what they are looking and discuss why this strategy.



## SCIENCE FOCUS

### Lesson Subject

Science 9

### Topic

Biodiversity

### Location

Classroom or outdoors

### Length

60-80 mins



**Intro Activity:** Introduce rhizomes and seeds. Have students determine whether they are sexual/asexual reproduction. Have them brainstorm pros/cons of each strategy.

**Main Activity:**

Discuss above activity and verify. Have students research (computer, resource books or pictures) and compare reproduction of Mountain Avens (rhizomes), Bearberry or Strawberry (stolons) and Prickly Saxifrage (seed only). Have students discuss in groups how each strategy may be affected by climate.

**Independent Student Work:** Define and sketch the different categories discussed today in a journal/notebook. Describe some pros/cons of each.

**Conclusion / Review:** Why do different strategies exist? Which may be most beneficial for human use / survival in different climates or habitats?

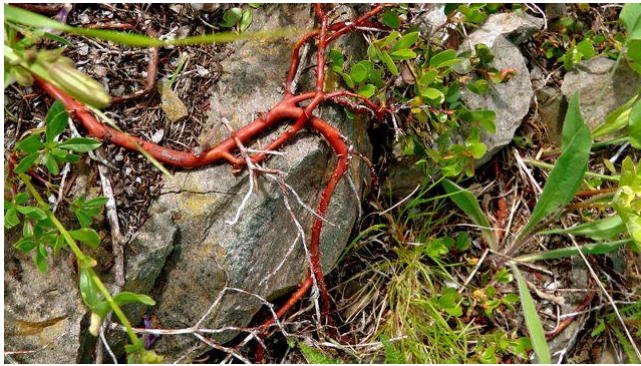
**Homework:** Choose one of the plants and continue to study for identification, habitat, human uses etc.

Or

Have students go through more plant watch plants and tabulate how many plants use each reproductive strategy. Is there a predominant strategy?

**Resources:**

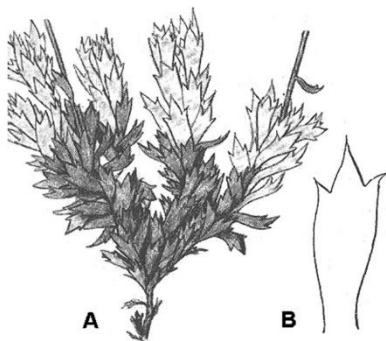
1. Stolon: <http://www.sci.sdsu.edu/plants/plantsystematics/morph/vegetative/stolon.html>
2. Plantwatch North: [www.naturewatch.ca/plantwatch/northwest-territories](http://www.naturewatch.ca/plantwatch/northwest-territories).  
Contact your local representative for Plantwatch North Guidebooks
3. NBES common plants: [http://nbes.ca/wp-content/uploads/2014/03/CommonPlants\\_Oct12-1.pdf](http://nbes.ca/wp-content/uploads/2014/03/CommonPlants_Oct12-1.pdf)
4. Wild and Wacky Plants of the NWT:  
[http://nwtarts.com/sites/default/files/wild\\_and\\_wacky\\_plants\\_of\\_the\\_nwt.pdf](http://nwtarts.com/sites/default/files/wild_and_wacky_plants_of_the_nwt.pdf)
5. Images:



Bearberry (from: <http://3.bp.blogspot.com/-xDm9D-s2AhY/ToXZKSR1I/AAAAAAAAA0s/0rMwihVmDek/s640/M1320075.jpg>)



Mountain Avens (From: <http://www.flora.dempstercountry.org/V.B.14.Rosaceae/Dryas.integ/Dryas.integ.drawing.jpg>)



Prickly saxifrage (From: <http://nature.ca/aaf flora/images/sxtrd1a.jpg>)

**Extension:**

1. Discuss niche Planting – Which plants might grow well together and which might compete? Why? Observe a local plant community and see if you can verify your answers.
2. Discuss how the technology of cloning animals is similar to this? Different? What are the ethical implications?