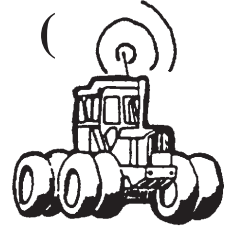
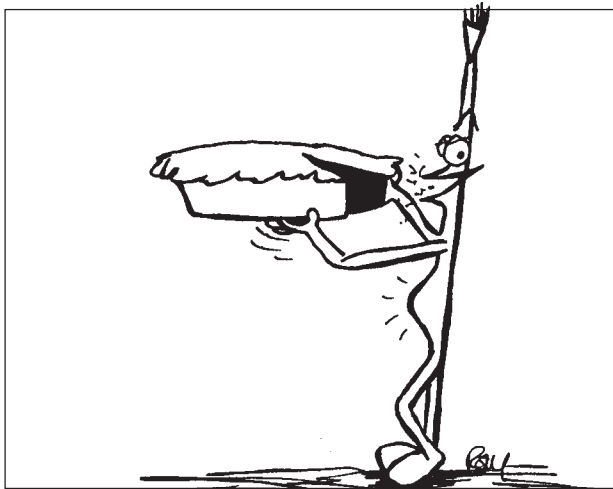


# Activity 9



## Saskatoon Pie

<b>Activity:</b>	Students will develop a strategy for domesticating a wild plant that produces edible fruit.
<b>Curriculum Fit:</b>	<b>Grade Eight - Science</b> <ul style="list-style-type: none"><li>• Topic 5: Growing Plants</li><li>• Plant propagation by vegetative reproduction</li><li>• Flowering and seeds</li><li>• Specialized varieties, plant breeding</li><li>• Awareness that agricultural plant varieties are usually the product of intensive breeding</li></ul>
<b>Agriculture Concepts:</b>	Diversity of the industry Technology and Capital Intensity
<b>Cognitive Level:</b>	Synthesis, Application
<b>Materials Required:</b>	- Information about saskatoons (included)
<b>Time Required:</b>	One 40 minute period



# Background — For the Teacher

Agricultural research covers a variety of topics, most of which aim at improving an existing crop, developing new uses for a crop or finding better ways to process a crop. Another important type of research is the search for completely new crops.

The saskatoon (*Amelanchier alnifolia*) or service-berry is a common wild plant throughout Alberta. Because its fruit is widely popular, it has become the subject of research aimed at developing it into a bush fruit orchard crop.

Early research focused on selective breeding from wild stock to develop domestic varieties with particular characteristics. Several varieties are now available.

A new stage of research, still in progress, is to use cloning and propagation techniques to develop bushes that are so similar genetically that an entire orchard could be expected to ripen at once. This short harvest season is essential to an economically sensible orchard.

In this lesson, your students are asked to design a scientific program to domesticate the saskatoon. Using selective breeding and cross-breeding techniques, or propagation techniques, they will recommend a strategy for attacking this problem.



## Procedure

### Introduction

1. Explain to the class how selective breeding can exaggerate certain characteristics.
2. Review the propagation techniques covered in Activity 8.

### The Activity

3. Divide the class into working groups of four or five.
4. Tell the groups that you have a wild fruit plant, the saskatoon, which you want to domesticate so that farmers can grow it in orchards.
5. Ask each group to list the steps they would take to:
  - a) produce dependable bushes from wild plants, and
  - b) develop cloned bushes for regular cropping.

### Conclusion

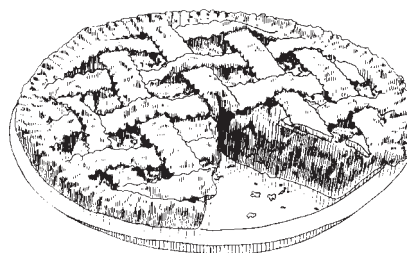
6. Each group is to present their research program to the rest of the class.

## Discussion Questions

1. Based on the information on the Saskatoon Berry Facts Sheet, how many years will your program take to complete?
2. Are there any ways we can speed up this process?
3. What are some ways to use saskatoons?
4. What are some other wild Alberta plants that could be domesticated to give new crops.

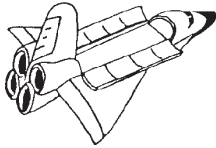
## Related Activities

1. Invite a speaker to describe modern plant breeding techniques.
2. Bring in wild plant products that could be used for new crops.





**Saskatoons - your product of the future.**



## Data Sheet One -- Saskatoon Berry Facts

A native shrub, 4-5 m tall.

Most successfully grown from seed. Seeds must be separated from the fruit, scratched with sandpaper and stored in damp peat moss at 2 - 7°C for 90 days to ensure germination.

Vegetative propagation has shown limited success by means of suckers, root cuttings and soft wood cuttings. These are all more difficult than growing from seed.

The shrub has a long juvenile phase: it takes 6 years to produce any fruit and 8 years to reach full production.

Orchard plants must be irrigated in case of drought and have well draining soil during wet years.