

Spuds in Tubs

Potato Tub Gardens for Elementary Schools

Welcome to ***Spuds in Tubs***, an experiential learning initiative brought to you by the BC Agriculture in the Classroom Foundation (BCAITC).

Partners in this program include:

- BC Potato and Vegetable Growers Association
- W&A Farms of Richmond
- Transform Plant Products - Abbotsford
- Cinnabar Valley Farms - Nanaimo
- Buckerfield's - Duncan, Nanaimo, Salmon Arm
- Noel Roddick Ltd. - Fertilizers
- Garden Works at Mandeville
- City of Abbotsford, Parks and Recreation
- Vancouver Island Health Authority
- Okanagan Science Centre - Vernon
- The Kipp Centre - Chilliwack
- CY Growers of Abbotsford
- Benjamin Moore - Colour Café - Abbotsford
- BC Agriculture in the Classroom Foundation

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We have provided you with some suggested activities with the hopes that each of you will choose what works for you. If you do come up with your own activities and curriculum links we hope that you will share them with others.

We would like very much to keep in touch with you via email or phone as to the progress of your potatoes.

Spuds in Tubs

Links to the British Columbia Science Curriculum Learning Outcomes for Grades K - 6

"All Canadian students. . . should have opportunities to develop scientific literacy. Scientific literacy is an evolving combination of the science-related attitudes; skills and knowledge students need to:

- Develop inquiry, problem solving, and decision-making abilities as citizens
- Become lifelong learners
- Maintain a sense of wonder about the world around them".

(From the Science K to 7 Integrated Resource Package 2005, BC Ministry of Education, page 11)

Kindergarten

- describe features of local plants (e.g., colour, shape, size, texture)
- compare local plants
- demonstrate the ability to observe their surroundings
- describe features of their immediate environment
- use the five senses to make observations
- share with others information obtained by observing

Grade 1

- classify living and non-living things
- describe the basic needs of local plants (e.g., food, water, light)
- describe how the basic needs of plants are met in their environment
- describe changes that occur in daily and seasonal cycles and their effect on living things
- communicate their observations, experiences, and thinking in a variety of ways (e.g., verbally, pictorially, graphically)

Grade 2

- describe physical properties of air, water, and soil
- distinguish ways in which air, water, and soil interact
- explain why air, water, and soil are important for living things
- use their senses to interpret observations
- infer the probable outcome of an event or behaviour based on observations

Grade 3

- compare familiar plants according to similarities and differences in appearance and life cycles
- ask questions that foster investigations and explorations relevant to the content
- measure objects and events

Grade 4

- compare the structures of local plants in different habitats
- analyse impacts of weather on living things
- make predictions, supported by reasons and relevant to the content
- use data from investigations to recognize patterns and relationships and reach conclusions

Grade 5

- analyse how BC's living resources are used
- identify methods of harvesting and processing BC's resources
- describe potential environmental impacts of using BC's living resources
- identify variables that can be changed in an experiment
- evaluate the fairness of a given experiment
- describe the steps in designing an experiment

Grade 6

- demonstrate the appropriate use of tools to examine living things that cannot be seen with the naked eye
- analyse how different organisms adapt to their environments
- manipulate and control a number of variables in an experiment
- apply solutions to a technical problem (e.g., malfunctioning electrical circuit)

Additional Information and Resources

www.potato2008.org

Spuds in Tubs

Objective

As part of science, social studies and now healthy living it has been brought to our attention that many schools would like to grow food at the school but find it difficult to work with inground school gardens. As a solution BCAITC has developed potato tub gardens that will allow students to grow and eat nugget potatoes within the confines of the school calendar.

Materials provided with *Spuds in Tubs*:

6 large black nursery tubs
15 20 litre bags of special potato growing compost
25 plus *Warba* seed potatoes
12 packages of *Spuds in Tubs* Potato Plant Food - organic based
One plastic drop sheet
1 AITC ruler
Grow BC map
CD - Close to Home
Related BC Ag in the Classroom Unit Plan

Procedure:

Late February to early March:

Leave seed potatoes in their special bag to encourage sprouting in your warm classroom.

When the seed potatoes have shoots that are about 2cm in length it is time to plant the potatoes. **The potatoes must be planted before Spring Break.** If your spuds have not sprouted, plant them anyway. If you have a seed potato with so many sprouts that it seems "hairy", do not plant that seed potato.

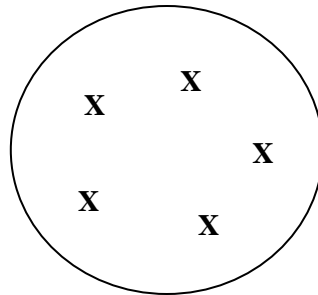
Planting

Since the tubs are portable, potatoes can be planted in their tubs either in the classroom or some other place inside the school.

Remember: If you are planting inside then be sure to protect the floor with the drop sheet provided as the tubs do have drainage holes.

Empty one bag of compost into each of the 6 tubs provided. Sprinkle one bag of Potato Plant Food evenly over the compost and gently work it into the compost.

Place 5 seed potatoes evenly around the outside of the tub, sprouts up and about 10 cm from the outside edge. Cover the potatoes with compost.



Hilling:

Potatoes are produced on the stems of the potato plant. The more stem that comes in contact with the compost, the more potatoes they will produce.

As the leaves of the new plants push up through the compost it is important to keep the stems covered with compost. As the plants keep growing add additional compost at regular intervals until the tub is filled to the top and the leaves are over the top of the pot. Always leave at least a few leaves showing.

When the new plants are about 15 cm high it will be time to place them outside in a **sunny well-protected** area of the school grounds. Try to find a south facing wall that will help absorb the heat and light from the sun. The spuds should not be exposed to the wind, so the area should also be in a protected location. If such a place is not available, perhaps a neighbor will keep them on their property. It is always good to get out for a walk to see the spuds!

Watering

Your potatoes will require occasional watering. You can tell if the tubs are dry by either feeling the compost with your fingers or noting if the compost is pulling away from the side of the tub. Wilted potatoes will slow down production.

Feeding

You have been provided with 2 packages of **Spuds in Tubs Potato Plant Food** for each tub. Carefully and thoroughly mix one package of plant food in the tub with the compost at the time of planting. Save the second package for later on after you have completely hilled your potatoes and they are safely outside. At this time, sprinkle the remaining plant food on the top of the compost and gently scratch the surface to work the fertilizer into the compost. Water well.

The potato plants will grow tall and green and will fill out to cover the tubs.

Harvest

In early June the plants will die back and it will be time to harvest the potatoes. Have students carefully dig up their potato plants trying to keep their potatoes attached (the nugget potatoes are actually a modified stem).

See if students can find their original seed potato. What does it look like now? Have students count the number of nugget potatoes from each of their plants and compare to other tubs. If possible weigh the total harvest. Imagine what can be grown in an entire field!

Once the potatoes are harvested the growing compost can be added to existing shrub beds around the school and the tubs washed and put away until next spring.

Eating

Wash carefully and then steam or boil your potatoes in the school kitchen. Add a little fresh butter and serve them to your students, parents or other teachers. Enjoy the feeling of growing your own food and enjoy the taste of really fresh potatoes! Keep the potatoes warm in a crock pot if you need to delay eating. Invite your student's parents!

Activities - Before Planting

- Record number and colour of seed potatoes
- Record total weight of seed potatoes
- Record number of days to full 2 cm sprouts
- Record number and colour of sprouts per potato/overall for the class
- Observe and record any changes in the seed potato skin as the sprout grows
- Cut and make observations of extra seed potatoes or any that do not sprout
- Have students distinguish between a seed, corm, bulb and tuber

Compost

- 1) From the empty compost bag provided make up a list of 10 vocabulary words and find definitions ie: nutrients, compost, pH, organic etc.
- 2) Open one bag of compost. Record observations about the colour, texture, and smell of the compost.
What is the volume of material found in the compost bag?
How many bags will it take to fill one tub?

Growing

Observations

- Record and graph the height of the plants to the number of days
- Observe the leaves - colour, shape, veins etc. Do leaf rubbings.
- Record number of sunny days, sunrise and sunset, watch how the days are getting longer, average temperature, frost etc.
- Record the number of days that your plants are in the tubs.

Extension

- Find out more about Warba potatoes and other potato varieties.
- Research the history of the potato from ancient times.
- Find out how potatoes are grown and harvested in the field.
- Using the map of BC find out where potatoes are grown.
- Try to sprout nugget potatoes from the grocery store.
- Research the value of potatoes to a healthy diet.
- Share recipes.

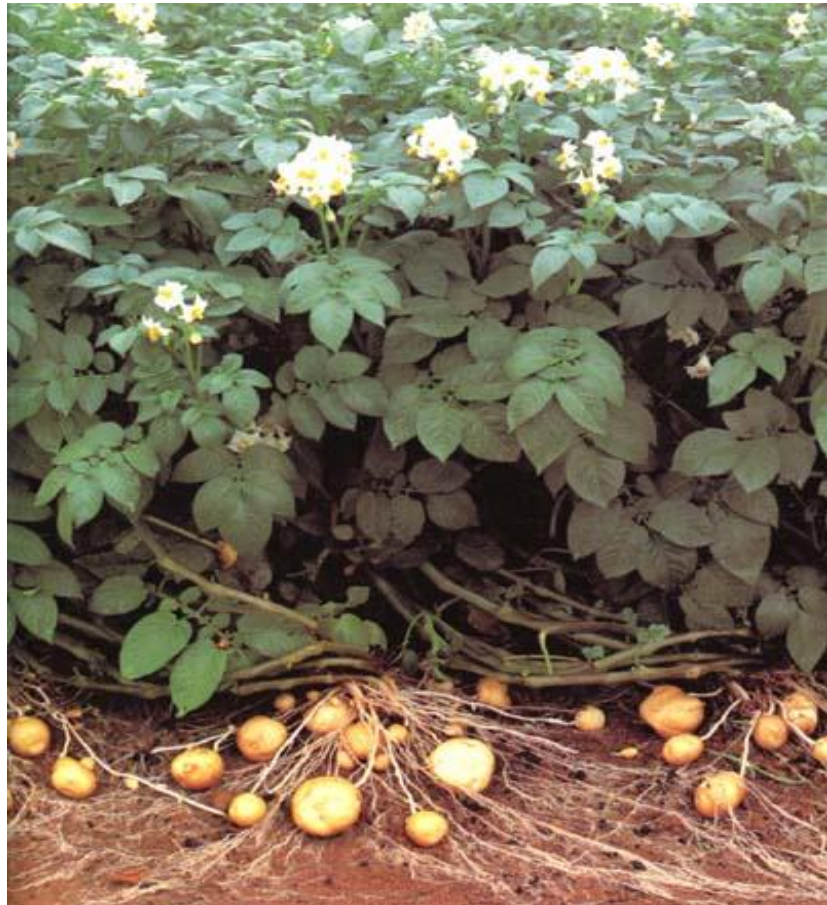
Why the Potato?

In the space of just 400 years, the potato has become a staple crop of many people around the world whose ancestors had subsisted perfectly well upon grain crops for anything up to 4000 years. The reason for this somewhat surprising development is that the potato is the best all-around bundle of nutrition known to mankind.

Its ratio of carbohydrate to protein is such that anyone eating enough potatoes to satisfy their energy requirements will automatically obtain most of the protein they require. Potatoes also contain significant amounts of essential vitamins (the British, in fact, used to derive 30% of their vitamin C intake from potatoes.)

Exceptional productivity is another virtue of the potato. A field of potatoes produces more energy per hectare per day than a field of any other crop. Potatoes grow well from sea level to 14,000 feet on a wider variety of soils, under a wider range of climatic conditions, than any other staple food. The potato matures in 90 to 120 days, and will provide small but edible tubers in just 60 days. All in all, the potato is about the world's most efficient means of converting plant, land, water and labour into a palatable and nutritious food.

John Reader, [*Man on Earth*](#), 1998



Potato Plants: In this picture the potato tubers have been exposed. Normally the tubers and roots would be underground.