



Spuds in Tubs

bcaitc.ca



**A Step-by-Step Guide to
Growing Potatoes with your Class**



Introduction

Welcome to the *BC Agriculture in the Classroom Foundation Spuds in Tubs* Program.

Spuds in Tubs was created in response to teachers who wanted to know what the Foundation did in support of school gardens. We understood that not all had access to school gardens and that many teachers wanted to give their students a chance to grow, harvest and eat a fruit or vegetable as part of their school experience. We also understood that teachers and students had difficulty caring for fruits and vegetables over the summer months when school is not in session.

So we thought why not make a garden in tubs that could produce a crop for students before the end of June? Working with our partners we found just the right potato – the variety called Warba – that would produce a small nugget potato in just 70 -75 days. We then found just the right compost, the right plant food and the right containers. Now students and teachers from many grades and subject areas can enjoy their crop of early nugget potatoes as part of their school experience.

Contact information:

BC Agriculture in the Classroom Foundation
202-2313 West Railway Street, Abbotsford BC V2S 2E3
Email: info@aitc.ca Phone: 1-866-517-6225

Program Partners:

W & A Farms

BC Potato and Vegetable Growers'
Association

Benjamin Moore

Buckerfield's Limited

Buy BC

Canadian Western Bank

Cargill

CY Grower Supplies Ltd

Dykhof Nurseries Ltd

Hunters Garden Center – Surrey, Vancouver

Gardenworks Burnaby/Lougheed,
Mandeville

Grow and Gather (Trice Farms Ltd)

Minter Country Garden

MNP - Leslie McConnell

Phoenix Perennials & Specialty Plants

Sea Soil

Sticks 'N Stones Nursery

TerraLink Horticulture Incorporated

Vandeven Financial Solutions Ltd.

/The Co-operators

Spuds in Tubs Program Across BC's New Curriculum

Elementary Core Competencies/Content <https://curriculum.gov.bc.ca/curriculum>

Grade 3 Science

- Biodiversity in the local environment

Grade 3 Physical and Health Education

- Explore and describe strategies for making healthy eating choices in a variety of settings

Grade 4 Physical and Health Education

- Explain the relationship of healthy eating to overall health and well-being
- Identify and describe factors that influence healthy choices

Grades 4-5 English Language Arts

- Use a variety of comprehension strategies (Grades 4, 5) may include activating prior knowledge, making predictions, setting a purpose, making connections, asking questions, previewing written text, making inferences, drawing conclusions, and using context clues

Grade 5 Science

- Investigate the nature of sustainable practices around BC's resources
- How can we act as stewards of our environment?
- How can you observe the concept of interconnectedness within ecosystems in your local area?

Grade 5 Physical Education and Health

- Food choices to support active lifestyles and overall health including local and seasonal foods, and whole/natural foods versus processed foods

Grades 6-9 English Language Arts

- Apply appropriate strategies to comprehend written, oral, and visual texts, guide inquiry, and extend thinking

Grade 6 Physical and Health Education

- Explore and plan food choices to support personal health and well-being
- Influences on food choices access to locally grown food; access to seasonal foods;

Grade 6/7 Food Studies

- Basic food handling and simple preparation techniques and equipment
- Factors in ingredient use, including balanced eating/nutrition, function, and dietary restrictions
- Grade 6 factors that influence food choices, including cost, availability, and family and cultural influences

Grade 7 Physical and Health Education

- Factors that influence personal eating choices influences could include food options at home, personal preference, cultural heritage, and food allergies

Grade 7 Science

- Evolution by natural selection provides an explanation for the diversity and survival of living things
- Sample questions to support inquiry with students:
 - Why do living things change over time?
 - How do these changes affect biodiversity?

Secondary Core Competencies/Content <https://curriculum.gov.bc.ca/curriculum/10-12>

Grade 8 Science

- Characteristics of life: living things respire, grow, take in nutrients, produce waste, respond to stimuli, and reproduce
- Photosynthesis and cellular respiration
- The relationship of micro-organisms
- Prokaryotic and eukaryotic cells

Grade 8 Food Studies

- Local food systems: growing, harvesting, processing, packaging, transporting, marketing, consumption, and disposal of food and food-related items

Grade 9 Food Studies

- Components of food preparation, including use and adaptations of ingredients, techniques, and equipment

Grade 9 Social Studies

- Global demographic shifts, including patterns of migration and population growth disease, poverty, famine, and the search for land
- Historical reasons for the immigration of specific cultural groups to Canada (Irish potato famine)

Grade 9 Science

- Asexual Reproduction Mitosis Elaborations: different forms of asexual reproduction: fission, budding, cloning, spores, grafting
- Matter cycles within biotic and abiotic components of ecosystems e.g., water, nitrogen, carbon, phosphorous, etc.
- Human impacts on sources and sinks (e.g., climate change, deforestation, agriculture, etc.)
- Sustainability of system: a systems approach to sustainability sees all matter and energy as interconnected and existing in dynamic equilibrium (e.g., carbon as a key factor in climate change, greenhouse effect, water cycle, etc.)

Grade 10 Science

- Genes and chromosomes
- Simple patterns of inheritance
- How does DNA result in biodiversity?
- How is the structure of DNA related to the function of DNA?

Grade 10 Food Studies

- Components of food preparation, including use and adaptations of ingredients, techniques, and equipment

Grade 10 Culinary Arts

- Food products available locally from agriculture, fishing, and foraging
- Components of food cooking methodology

Grade 11 Food Studies

- Components of recipe development and modification, including ingredients,

functions, proportions, temperatures, and preparation methods issues involved with food security

- Factors involved in the creation of national/ regional food guides, including indigenous food guides
- Roles, responsibilities, and regulations of Canadian government agencies and food companies for food labelling
- Food promotion and marketing practices, and their impact on specific groups of individuals

Grade 11 Culinary Arts

- Identification and selection of suitable culinary ingredients
- Ethnic and multicultural ingredients and their cooking methodology

Grade 12 Food Studies

- Components of multi-course meal development
- Preparation, including timing, proportions, originality,
- Temperatures, ingredients, equipment, and methods
- Food justice in the local and global community

Grade 12 Culinary Arts

- Characteristics and properties of culinary ingredients
- Ethnic and multicultural ingredients and their cooking methodology
- Social, economic, and environmental effects of food procurement decisions
- Substitutions to facilitate dietary restrictions and food allergies

Spuds in Tubs

Stage 1.

Spuds in Tubs

Things you should know and do BEFORE SPRING BREAK

BEFORE PLANTING SEED POTATOES

1. Attend the workshop in your area.
2. Pick up materials for YOUR classroom:
 - 5 large black nursery tubs
 - 8 - 30 litre bags of soil
 - 25 Warba seed potatoes in special bag
 - 1 bag of potato plant food with a scoop inside
 - 1 Step by Step guidebook
 - 1 plastic drop sheet
 - Related BC Agriculture in the Classroom resources
3. Leave seed potatoes in their bag in your warm classroom to encourage sprouting.
4. Measure the sprouts. When they are 2 cm long (or longer), proceed to stage 2. Remove the biggest and most dominant sprout so the others will grow and give you more potatoes.



measuring up the sprouts on the potatoes

Stage 2.

Spuds in Tubs

Things you should know and do BEFORE SPRING BREAK

PLANTING SEED POTATOES IN TUBS

1. When planting in tubs indoors, lay the plastic drop sheet on the floor to protect the floor.
2. Empty 1/3 bag of soil into each tub.
3. Mix 2 scoops (8 tablespoons) of potato plant food thoroughly into the soil for each tub.
4. Dig five small wells in the soil of each tub evenly in a circle around the tub, about 10 cm from the outside edge.
5. Place five seed potatoes into the small wells from step 8, sprouts facing UPWARDS.
6. Cover the potatoes with more soil from the tub.
7. Choose a cool, safe INDOOR location for the tubs.
8. Give your tubs a good drink of water; approximately 4 cups of water per tub.



place potatoes in tub like this



Stage 3.

Spuds in Tubs

Things you should know and do AFTER SPRING BREAK

GROWING & HILLING (Keeping the potato sprouts covered with soil)

Your students will be surprised to see how much their spuds have grown.

1. As the potato sprouts grow, add soil to cover most of the stem, leaving a few leaves from each sprout stretching above the soil.
2. Watch the potato sprouts daily. As they grow, add more soil around the stem.
3. Repeat steps 1 and 2 until the tubs are filled to the top with soil.
4. Covering the smaller plants with soil is fine. It may be difficult to "hill" without covering the smaller plants.



watching the potatoes sprouts grow

Things you should know and do AFTER SPRING BREAK

READY TO MOVE TUBS OUTSIDE

1. Measure plants. When the largest plant reaches 15 cm above the rim of the tub and weather permitting, proceed to step 2. Note: if there is still frost in your area, please wait on moving them outside.
2. Sprinkle another scoop of potato plant food on the top of the soil.
3. Gently scratch the surface to work it into the soil.
4. Move the tubs to a safe OUTDOOR location that includes:
 - a. A south-facing wall that will absorb heat and light from the sun
 - b. Protection from the wind
 - c. If a. and b. are impossible, perhaps a neighbor will keep them on their property in similar conditions
5. For the first week, loosely drape the drop sheet provided over the tender potato plants for the night to protect them from cold weather. Be sure to remove the sheet during the day to avoid burning the plants from direct sunlight.



measuring the potato plants

22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

Stage 5.

Spuds in Tubs

Things you should know and do AFTER SPRING BREAK

SPUDS IN TUBS LIVING OUTSIDE - When to water?

1. Check to see if the plants are dry by feeling the soil or observing if the soil is pulling away from the side of the tub.
 - Wilted potatoes will slow down production, so water well when the pots are dry.
 - If there is water running out of the drainage holes, the plants have enough water.
 - A fun way to check if the tubs need water is to have your students plunge a finger into the soil being careful not to harm the plants. If their finger comes out with soil stuck to it then the tub should not need water. If their fingers are clean then the soil is dry and it is time to water the tubs.
2. Have your students check to see what other creatures have made the tubs their home. e.g., under the tubs, on the plant etc.

Spuds in Tubs



ladybug



aphids



ant



earth worm



watering.....and other creatures

Stage 6.

Spuds in Tubs

Things you should know and do BEFORE SCHOOL ENDS

READY TO HARVEST (early to mid June)

1. You will know it is time to harvest because the plants will wilt and turn yellow.
2. If the plants do not wilt and turn yellow, you will still have to harvest them.



harvesting the potato plants

Stage 7.

Spuds in Tubs

Things you should know and do BEFORE SCHOOL ENDS

HARVESTING

1. Lay out the plastic drop sheet on the ground.
2. Tip the tubs onto the plastic sheet.
3. Count the number of spuds in your tubs!
4. See if the students can find their original seed potato.
5. The leftover soil can be added to existing shrub beds in a sunny location around the school in anticipation of the "Planting a Promise" Program.
6. Wash the tubs and put away to re-use next Spring.



harvesting the potatoes

Stage 8.

Spuds in Tubs

Things you should know and do BEFORE SCHOOL ENDS

ENJOYING THE HARVEST!

1. Wash the potatoes thoroughly, scrubbing off all the soil.
2. Steam or boil the potatoes until they pierce easily with a fork.
Keep warm in a crock pot if you need to delay eating.
3. Add butter. Serve and enjoy!



enjoying the harvest!

Spuds in Tubs

FAQ's

1. What should I do if the weather is still cold (has frost) in my area?

Protect your potato plants from extreme temperature fluctuations. Leave them inside a bit longer until the frost has passed and when you do move them outside, make sure they are covered at night, if there is still a possible risk of frost at night.

2. Why is hilling important?

Hilling is important to protect the potatoes from frost, sunlight and to increase your potatoes yield.

3. Do my plants need to produce flowers?

No. Your potato plants will still produce potatoes in the soil even without producing flowers on the plants.

As a result, potato plants do not require pollination in order to produce potatoes.

4. What should I do if my plants do not turn yellow (or senescence) by the end of the school year?

Even if your plants are still healthy and green, there will still be potatoes under the soil. If it has been 70-75 days the potatoes are ready to harvest.

5. What should I do if my plants turn yellow before we are ready to harvest?

The potato plants will be fine for a few weeks after senescence. If the potatoes stay in the soil longer it will toughen up their skins.

6. Why do my potatoes have 'cracks' in them?

This is a sign the tubers grew very fast when wet weather was followed by dry weather. They are perfectly fine to eat.

Spuds in Tubs

Spuds in Tubs Student Log Book



Name _____

Spuds in Tubs

Name: _____

What I know

What I want to know

What I've learned

Spuds in Tubs

Name: _____

Before Planting

Date: _____

My seed potato is _____ and _____ .

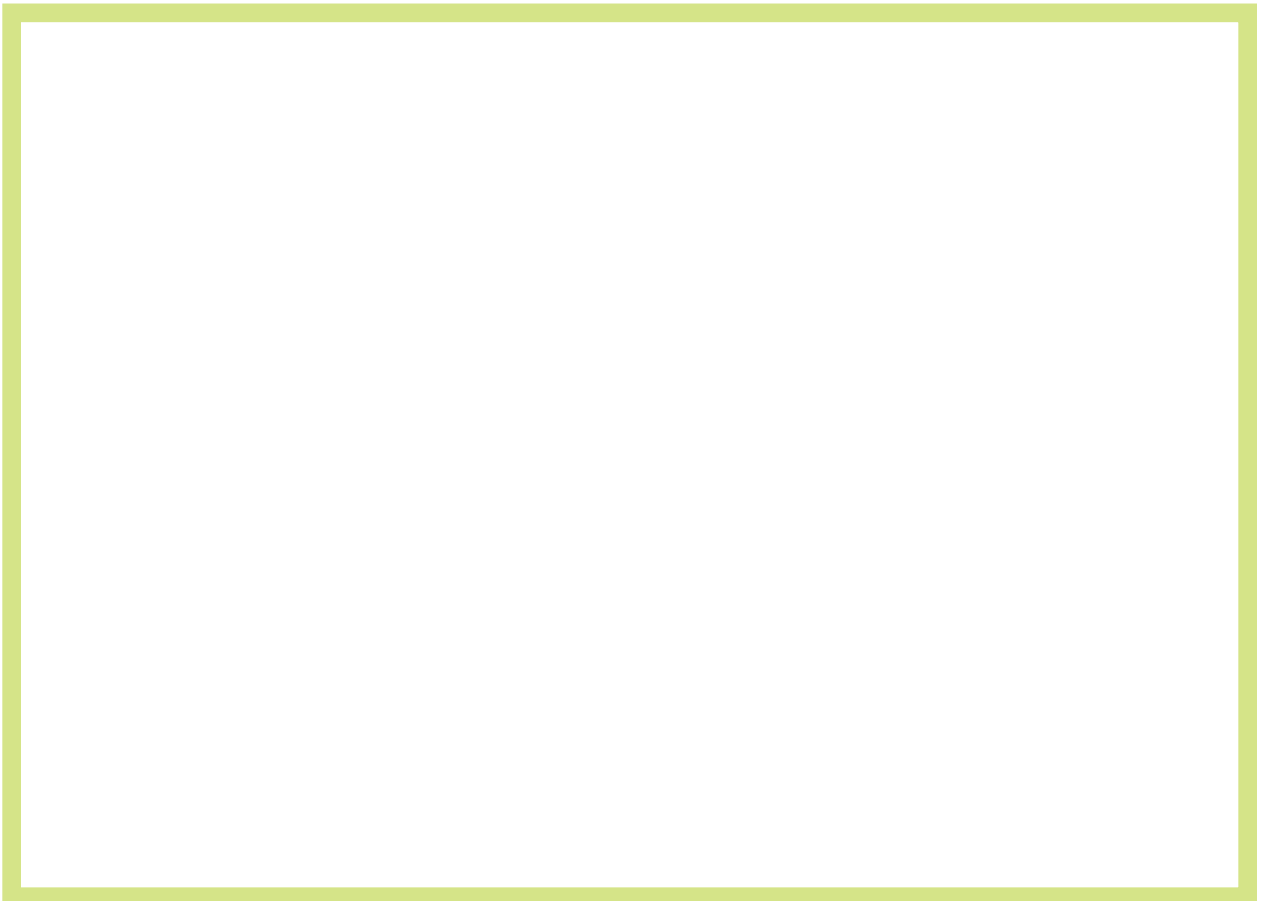
My seed potato is _____ cm long.

My seed potato has _____ sprouts. (How many?)

My seed potato has _____ eyes. (How many?)

I predict my seed potato will grow _____ more potatoes. (How many?)

Here is my seed potato: (Draw a picture)



Spuds in Tubs

Name: _____

Planting Our Potato Crop

Date: _____

We removed the biggest _____ on our seed potatoes.

We planted our seed potatoes in 5 large black _____.

We emptied a bag of _____ into each large black _____.

We mixed in two scoops of _____ to help our plants grow.

We placed the tubs on a drop sheet to protect the _____.

We planted _____ seed potatoes around the edge of each tub. The type of potato we planted is called _____.

We made sure the sprouts were facing _____.

We covered the seed potatoes with more _____.

We _____ the soil to settle the soil around the seed potatoes.

Growing Our Crop of Potatoes

Potatoes are made on the _____ of the potato plant.

As the potato plants grew we added more soil to the tubs. This is called _____.

Vocabulary

Five

Soil

Tub

Warba

Floor

Sprouts

Tubs

Watered

Hilling

Stems

Up

Potato
Plant Food

Spuds in Tubs

Name: _____

Measuring our Potato Plants

Date: _____

Height: _____ cm Weather Report:

Date: _____

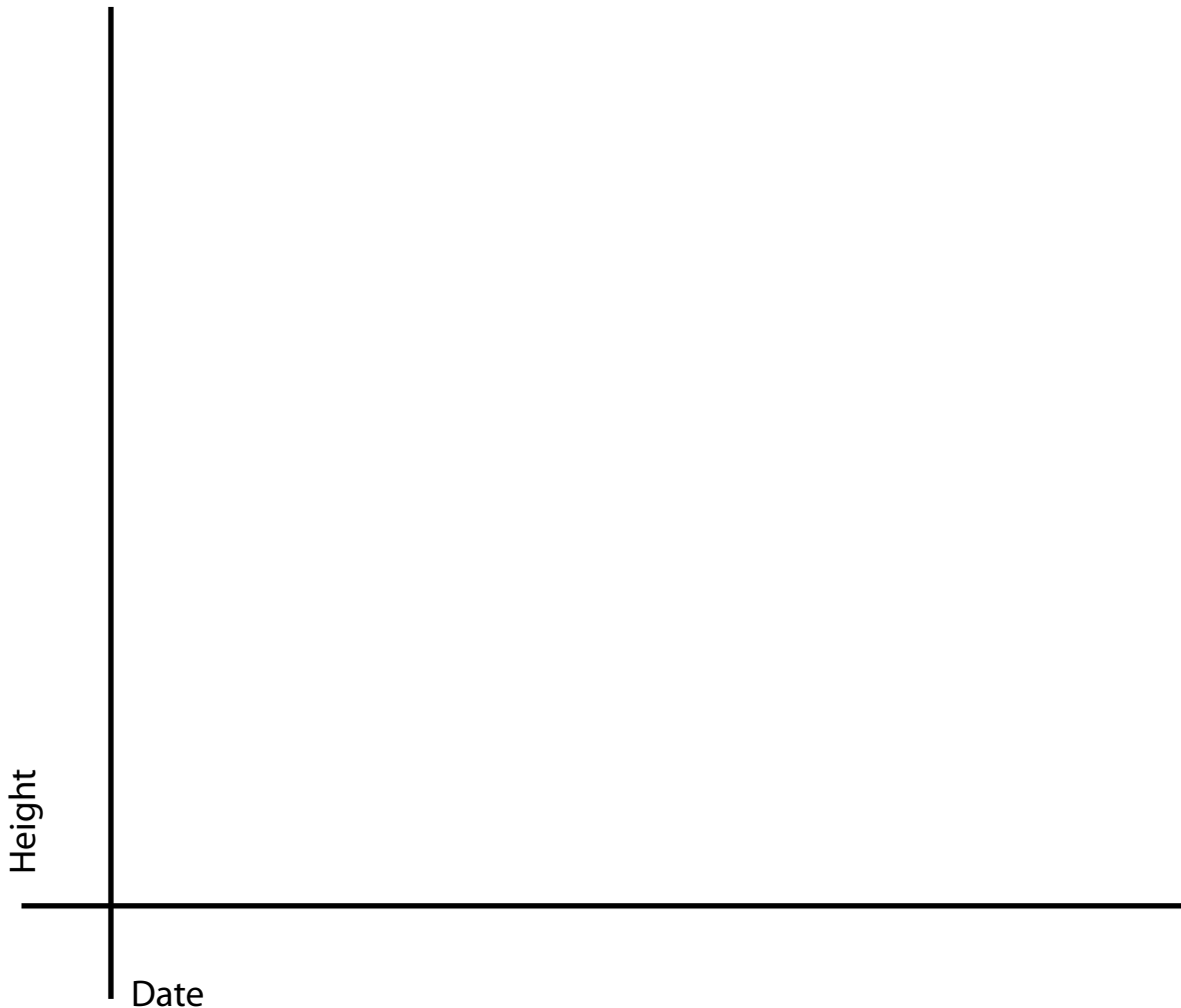
Height: _____ cm Weather Report:

Date: _____

Height: _____ cm Weather Report:

Date: _____

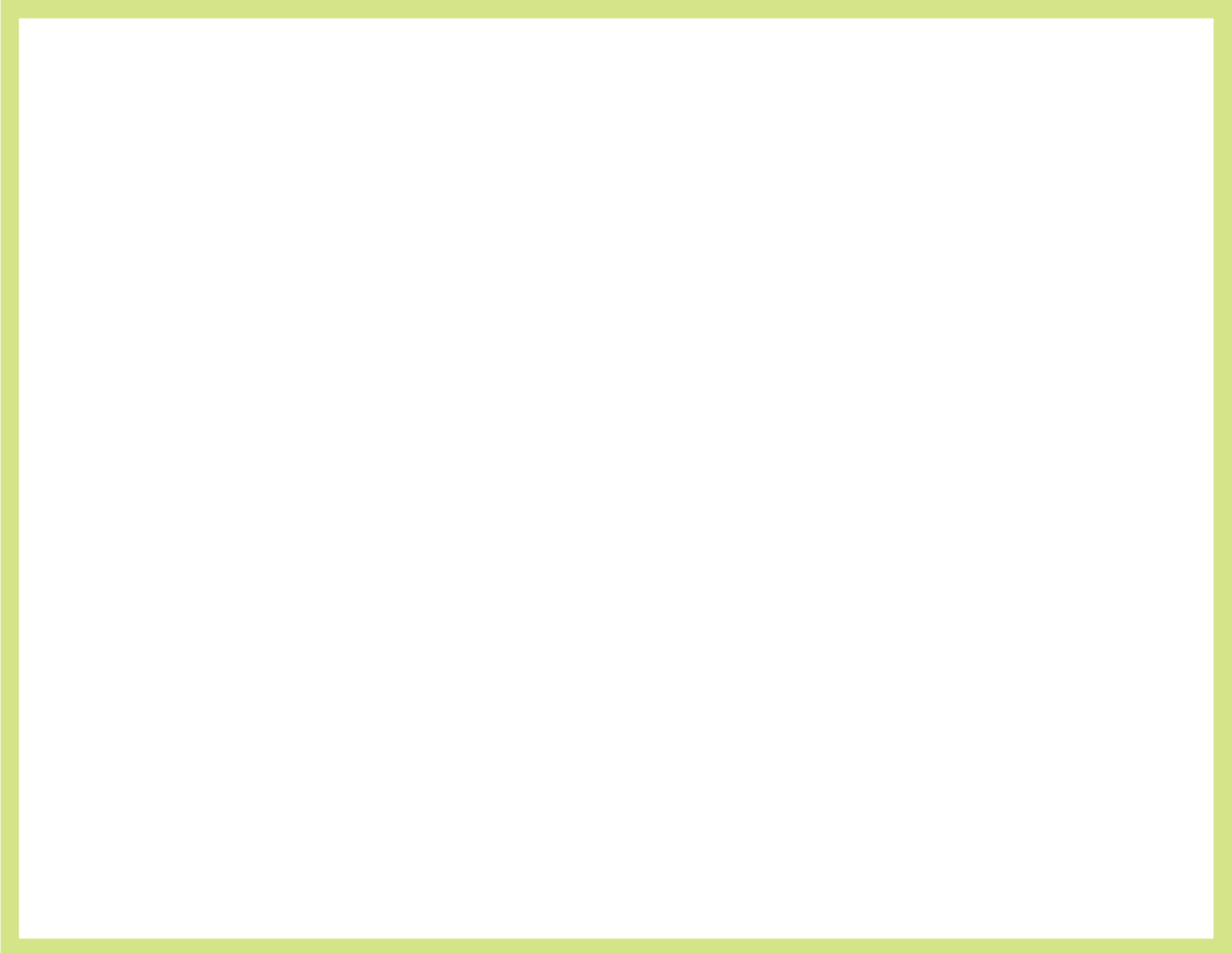
Height: _____ cm Weather Report:



Spuds in Tubs

Name: _____

Harvest Observations:



Spuds in Tubs

Name: _____

Spuds in Tubs Wordsearch

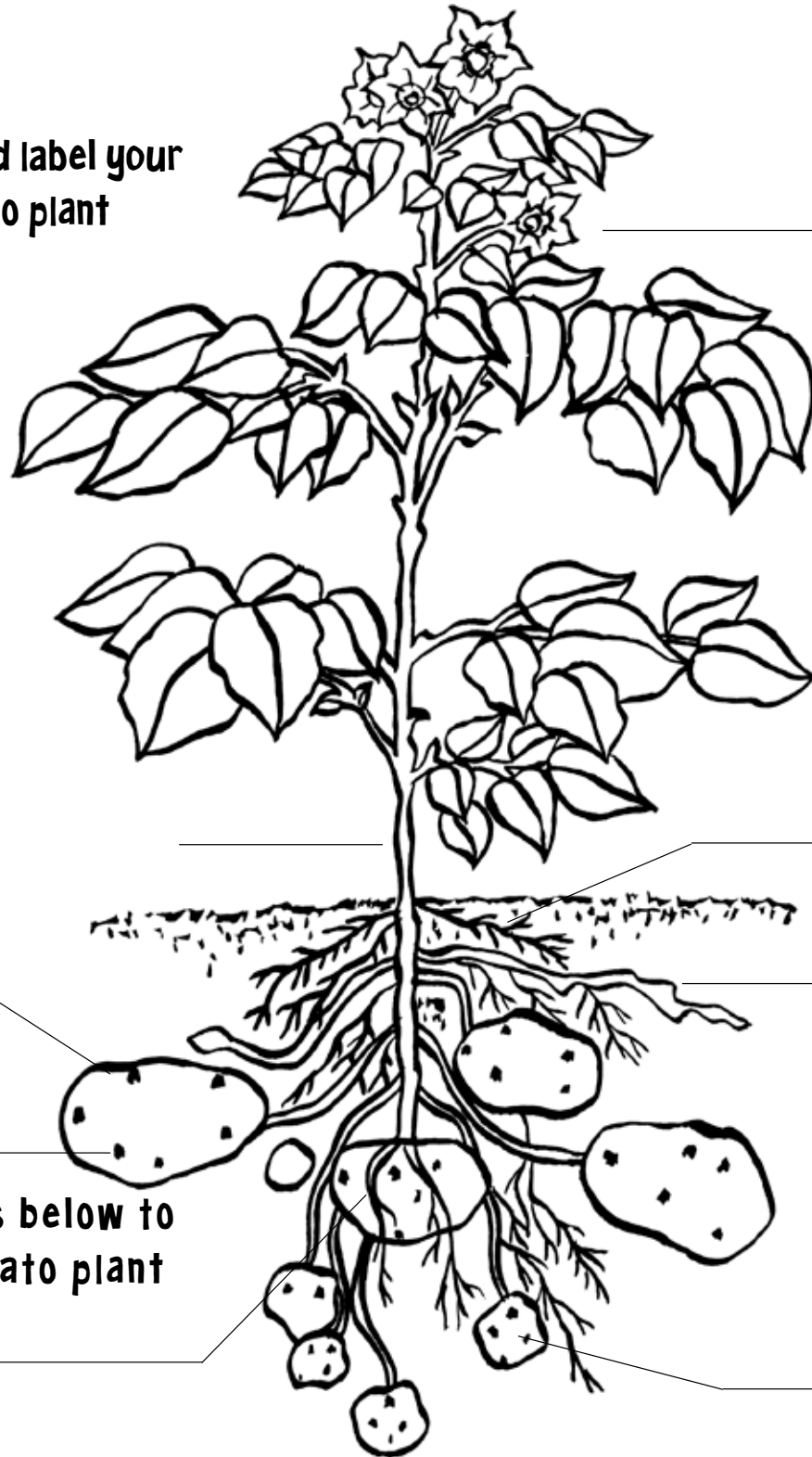
potato spuds tuber planting stem
compost growing edible soil nugget
sprouting agriculture crop warba nutrient
vegetable harvest eyes hilling organic

e	l	b	a	t	e	g	e	v	q	w	e	r	o	y
e	u	i	g	o	p	o	a	s	d	f	g	h	r	j
k	r	l	n	z	t	e	g	g	u	n	c	x	g	c
v	b	u	i	a	n	m	q	w	w	a	r	b	a	e
o	t	a	t	o	p	r	t	m	y	u	o	i	n	o
g	s	o	n	l	p	a	e	s	d	f	p	g	i	h
n	p	j	a	n	u	t	r	i	e	n	t	s	c	k
i	r	l	l	z	s	c	g	m	e	t	s	x	c	v
l	o	b	p	i	o	n	i	n	m	q	o	w	e	r
l	u	d	f	g	o	s	h	r	i	j	p	k	l	z
i	t	x	c	v	s	s	b	n	g	w	m	m	q	t
h	i	w	e	p	r	t	y	s	u	a	o	i	o	u
p	n	a	u	h	a	r	v	e	s	t	c	r	s	b
d	g	d	f	g	h	j	l	y	z	x	c	v	g	e
b	s	q	e	d	i	b	l	e	w	e	r	t	y	r

Spuds in Tubs

Name: _____

Colour and label your
potato plant



Use the words below to
label this potato plant

Flower
Stem
Rhizomes

Eye
Eyebrow
Roots

Old "seed" potato
Young tuber



Spuds in Tubs

bcaitc.ca

To be eligible for future participation every teacher participating in the Spuds in Tubs program must submit a summary report.

The summary report must be completed and submitted online before **June 30th** of each school year.

Please use this link to submit your report
<http://www.aitc.ca/bc/myschool/login>

Tina Evans - Program Coordinator
Phone: 1-866-517-6225
Email: Tina@aitc.ca

Spuds in Tubs

Answer Keys

Name: _____

Spuds in Tubs Wordsearch

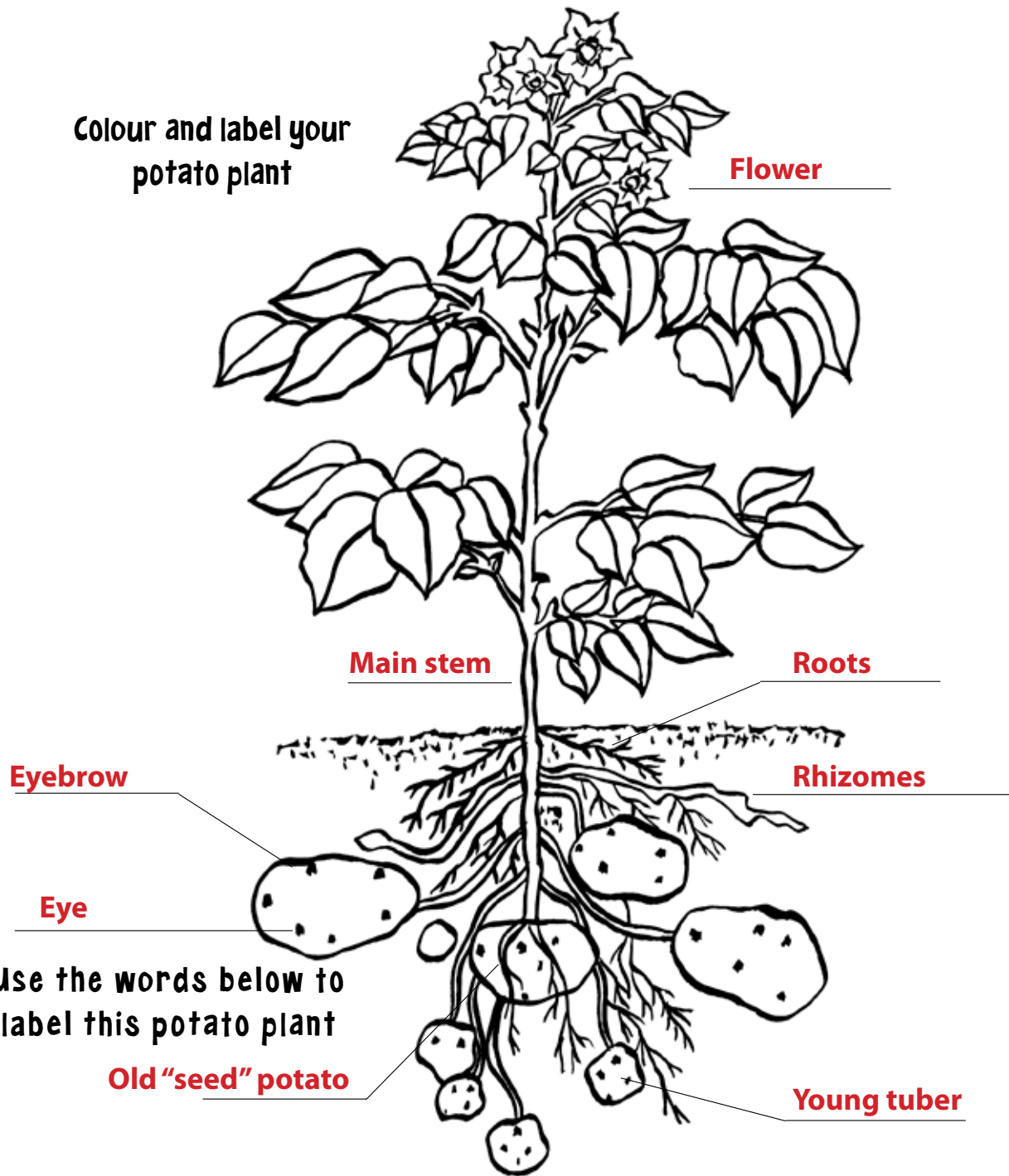
potato spuds tuber planting stem
compost growing edible soil nugget
sprouting agriculture crop warba nutrient
vegetable harvest eyes hilling organic

e	l	b	a	t	e	g	e	v	q	w	e	r	o	y
e	u	i	g	o	p	o	a	s	d	f	g	h	r	j
k	r	l	n	z	t	e	g	g	u	n	c	x	g	c
v	b	u	i	a	n	m	q	w	w	a	r	b	a	e
o	t	a	t	o	p	r	t	m	y	u	o	i	n	o
g	s	o	n	l	p	a	e	s	d	f	p	g	i	h
n	p	j	a	n	u	t	r	i	e	n	t	s	c	k
i	r	l	l	z	s	c	g	m	e	t	s	x	c	v
l	o	b	p	i	o	n	i	n	m	q	o	w	e	r
l	u	d	f	g	o	s	h	r	i	j	p	k	l	z
i	t	x	c	v	s	s	b	n	g	w	m	m	q	t
h	i	w	e	p	r	t	y	s	u	a	o	i	o	u
p	n	a	u	h	a	r	v	e	s	t	c	r	s	b
d	g	d	f	g	h	j	l	y	z	x	c	v	g	e
b	s	q	e	d	i	b	l	e	w	e	r	t	y	r

Spuds in Tubs

Name: _____

Colour and label your potato plant



Use the words below to label this potato plant

Flower
Stem
Rhizomes

Eye
Eyebrow
Roots

Old "seed" potato
Young tuber

Spuds in Tubs

Name: _____

Planting Our Potato Crop

Date: _____

We removed the biggest **sprouts** on our seed potatoes.

We planted our seed potatoes in 5 large black **tubs**.

We emptied a bag of **soil** into each large black **tub**.

We mixed in two scoops of **potato plant food** to help our plants grow.

We placed the tubs on a drop sheet to protect the **floor**.

We planted **five** seed potatoes around the edge of each tub. The type of potato we planted is called **Warba**.

We made sure the sprouts were facing **up**.

We covered the seed potatoes with more **soil**.

We **watered** the soil to settle the soil around the seed potatoes.

Growing Our Crop of Potatoes

Potatoes are made on the **stems** of the potato plant.

As the potato plants grew we added more soil to the tubs. This is called **hilling**.

Vocabulary

Five	Soil	Tub	Warba
Floor	Sprouts	Tubs	Watered
Hilling	Stems	Up	Potato Plant Food

BC Agriculture in the Classroom Foundation

For more programs and other teacher resources visit:

bcaitc.ca

BC Agriculture in the Classroom Foundation

202 - 2313 West Railway Street
Abbotsford, BC V2S 2E3

Tel: 1 866 517 6225

