Windowsill "Growcery"

Nova Scotia Agricultural Awareness

Windowsill “GROWcery”:
a first step in exploring food gardening in your school

This simple to use kit is designed for use with Grade 3 curriculum and is intended to spark interest in food and agriculture as topics in the classroom while providing an opportunity to engage students in active learning. Learning about food production can help children develop a healthy attitude toward food and an appreciation for food production. The Windowsill “GROWcery” provides students and teachers with a multi-disciplinary, hands-on and minds-on approach to their curriculum.

With this container garden students can:

* experience the satisfaction of food gardening
* make the food and agriculture connection
* learn about agriculture in Nova Scotia and connections with local community
* foster responsibility by caring for living things
* develop an interest in healthy foods
* develop environmental awareness

Teachers can use the kit as provided, or they can increase the project size and complexity by adding additional lights and containers. Teachers may want to take the next step to an outdoor school garden. We have also developed a School Garden Resource Guide as an introductory guide to starting an outdoor school garden. This guide provides links and information on resources available to schools in Nova Scotia and will be available from the web page below.

The Agricultural Education Office of the Nova Scotia Department of Agriculture has many other resources on agriculture in our province.

Visit www.gov.ns.ca/agri or contact:

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Acknowledgements

Thank you to Ilze Firminger for her work in creating this container garden resource. Her background in both agriculture and education, combined with vast personal experience as a gardener, made her well suited to the task.

Thanks to Cheryl Kienzle for her advice and her graphics work in assembling this container garden resource.

Appendices (pages 18, 20, 21, 22, 24 and 26) were adapted from Agriculture in the Classroom Saskatchewan- “Little Green Thumbs Student Journal 3rd Edition”.

Appendix “Does your Breakfast Need a Passport” adapted from the Nova Scotia Federation of Agriculture Food Miles Project

Thanks to Home Hardware for donating potting soil and mechanical timers and Nova Scotia Power for the compact florescent light bulbs included with the kits.

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Windowsill “GROWcery”:

a first step in exploring food gardening in your school

Kit contents:

Windowsill “GROWcery” Manual and log book

- clip-on gooseneck lamp
- 23 watt cool white compact fluorescent light (CFL)
- planting bag
- growing medium-potting soil gift certificate*
- fertilizer
- seeds
- mechanical timer
- drainage tray (shipping container)**
- soil samples
- School Garden Resource Guide

*You can pick up the growing medium at the nearest Home Hardware with the certificate provided.
**Gravel or other drainage material will be required for the drainage tray.

What else you will require.....

- a bright windowsill or well lit area for the container garden
- something to attach the gooseneck lamp which will allow it to be repositioned as the crop grows
- watering can

Where to begin?

Place 1-2 centimetres of gravel or pebbles in the drainage tray and place the planting bag inside it. Fill the planting bag with at least 20 cm of growing medium (it will settle slightly). If the growing medium is dry, pour about 1 litre of water over it and stir. It takes a bit of time for the water to be absorbed, so let it rest for an hour or so before deciding whether you need to add more water. It should be moist, but not soggy. Roll the top of the planting bag down to a few centimetres above the growing medium.

Now the planting!

How far apart? The seed package usually has planting information. However, when growing in a container you can generally plant things a little closer, and remove some plants if they are too close together.

The kit has been supplied with a small variety of seeds which have been re-packaged therefore consider the following instructions. The Windowsill "GROWcery" is slightly larger than a square foot so it may be able to accommodate a larger numbers of plants. The basic principal is that for each square foot, the number of seeds planted is dictated by the size of the plant:

Large plants (broccoli, bush beans and peas, tomato, etc) = 1 per square foot
Medium large plants (head lettuce, beets, parsley, celery, etc) = 4 per square foot
Medium - small plants (spinach, spring cabbage, etc) = 9 per square foot
Small plants (various greens, carrots, turnip, onions, etc) = 16 plants per square foot

Specific planting instructions can always be found on the seed packet. However, as a general rule if it says:

- sow 12 inches apart then plant 1 plant in each square foot;
- sow 6 inches apart then plant 4 per square foot;
- sow 4 inches apart then you can plant 9 plants per square foot; and
- sow 3 inches apart then you can plant 16 plants in a square foot plot.

How deep? A good rule of thumb is that seeds should be planted to a depth of about 4 times the thickness of the seed. You can use the edge of a ruler (or other straight edge) to make shallow grooves in the soil. Put the seeds in the groove, and then carefully pull some growing medium from the sides of the grooves in to cover the seeds. To ensure that there is contact between the seeds and the growing medium, pat the soil very gently...do not pack it hard! Cover with the lid of the shipping container or a piece of clear plastic. This will keep the surface damp until the plants emerge. When you see plants sprouting, remove the cover.

You can grow climbing plants in your container garden. They will require vertical support, which can be fixed above the container garden. As well, some types of herbs tend to do particularly well when grown in a container.

Germination

The viability or ability of seed to germinate is not always 100%. Seeds do have an expiry date so as they get older their ability to sprout and grow is reduced. If you have purchased new seeds this should not be a concern. If you are using older seeds you should do a sprout test to indicate how many seeds you should place for each plant space to ensure that you do get something to grow. Always plant at least 2 seeds for each plant space, but in the case of carrots and parsnips, 3-4 seeds may be required to ensure at least one will germinate. If more than one seedling appears, they need to be thinned. Pulling may damage the roots of the preferred plant so cutting off plants to be thinned out will cause the least disturbance.

Light, light, light!

This is the Windowsill “GROWcery”, and since the plants will be growing indoors, try to find the sunniest window possible. Although not a replacement for sunlight, one 23 watt cool white CFL (100 watt replacement) is enough to supplement sunlight for your Windowsill “GROWcery” and keep plants from getting spindly. Keep the light as close as possible to the plants, within a few centimetres, but not touching. The light should be kept on for at least 16 hours per day. There is no benefit to keeping the light on more than 16 hours, however it will use more electricity. A mechanical timer has been provided to ensure adequate light is available and that electricity is not wasted.

The heat is on!

Most plants grow well with daytime temperatures between 20-30 ^{o}C and night time temperatures between 15-20 ^{o}C. If your room is cooler, it will take longer for the seeds to germinate, and they will grow more slowly. Lettuce will grow well under cooler conditions as compared to other plants. If your container is in a window, good air circulation will keep your plants from getting too hot, especially with the sun shining on the plants.

Watering

Plants get thirsty, so you will need to water them regularly. When the seedlings are small, a misting bottle works well, or pour water between the planting bag and the drainage tray so you don’t accidentally wash the plants out of the growing medium. Once they have established a good root system, water them with a watering can, or a cup with a spout to direct the water. Excessive watering can cause seedlings to rot, so watch that the growing medium doesn’t get soggy. Extra water will drain into the drainage tray, so check to see if water is accumulating in the tray and if it is, drain and cut back on the watering.

Watering is an activity which can be monitored and assigned to various students. In some cases, such as long weekends, your Windowsill “GROWcery” may be unattended for extended periods. Try to make arrangements to accommodate watering in these cases. Otherwise some additional water can be added between the planting bag and the drainage tray, 1-2 cm above the top of the gravel.

Garden Journal/Log Book

Master sheets have been provided in the appendices to record any activities, observations and the progression of your Windowsill “GROWcery”. Information you record may include written descriptions, data, drawings, photographs, etc which describe how the plants in the Windowsill “GROWcery” are progressing. The master pages can be photocopied and used as a class journal, or individual students can keep log books on the progression of the garden.

Frequently Asked Questions

When will the seeds sprout?
Some seeds take longer than others to sprout. Lettuce mixtures could start sprouting within 3 days and continue sprouting up to 10 days. Radishes will germinate in 3-5 days. Carrots generally take longer at 10 days or more. Check the expected germination time on the seed packet.

I waited 2 weeks, still no plants! Why?
There are several possibilities which prevent germination... conditions are too cold, too hot, too wet, too dry, the seeds were not viable or the seed may have been planted too deep. You can run a check on the seed viability by placing some seeds inside a folded damp paper towel and seal in a plastic bag. This can be done at the time of planting and if they sprout in a few days, you can eliminate viability as the problem. Students will enjoy seeing the sprouting process and you can discuss the various parts of the sprouting seedlings.

The plants came up well, but died shortly afterwards. Why?
It is possible they became infected with “damping off”, which is a fungal disease. Disinfect the growing containers with a 10% solution of Javex, get new growing medium, and start again, easing up on the watering and/or watering from below. New seedlings are fragile, and could be “burned” by the sun as well. Hot sunshine on wet leaves may form dead spots.

Can garden soil be used instead of the growing medium?
Garden soil could be used, but it can be extremely variable and it may not work as well as growing medium that is specifically made for starting plants. Commercial growing medium is consistent, holds the moisture better, and is free from insects and diseases.

Do the plants need fertilizer (plant food)?
Yes, after they have been growing for a week or so, start putting some soluble fertilizer in the water, using the instructions on the package. Compost tea can also be used to supply nutrients to the plants or other organic sources of nutrients can be used if available.

Is the fertilizer poisonous, or dangerous to handle?
No, but it might sting in a cut.

Why do my plants lean toward the window?
The plants want more of that sunlight! Turn your tray occasionally so all sides get a chance to be closer to the window and make sure the light is as close as possible to the growing plants.

There appear to be different plants in the Mesclun mix!
The mix can be made up of seeds from several different types of plants which may include leaf lettuces, cabbage, arugula, spinach and endive to name a few. The seed leaves (first leaves) of the cabbage family look heart shaped, while those of lettuce plants have elongated oval leaves. Some are made from seeds of different types of lettuce, which will differ in colour and shape. Have students try and distinguish them.

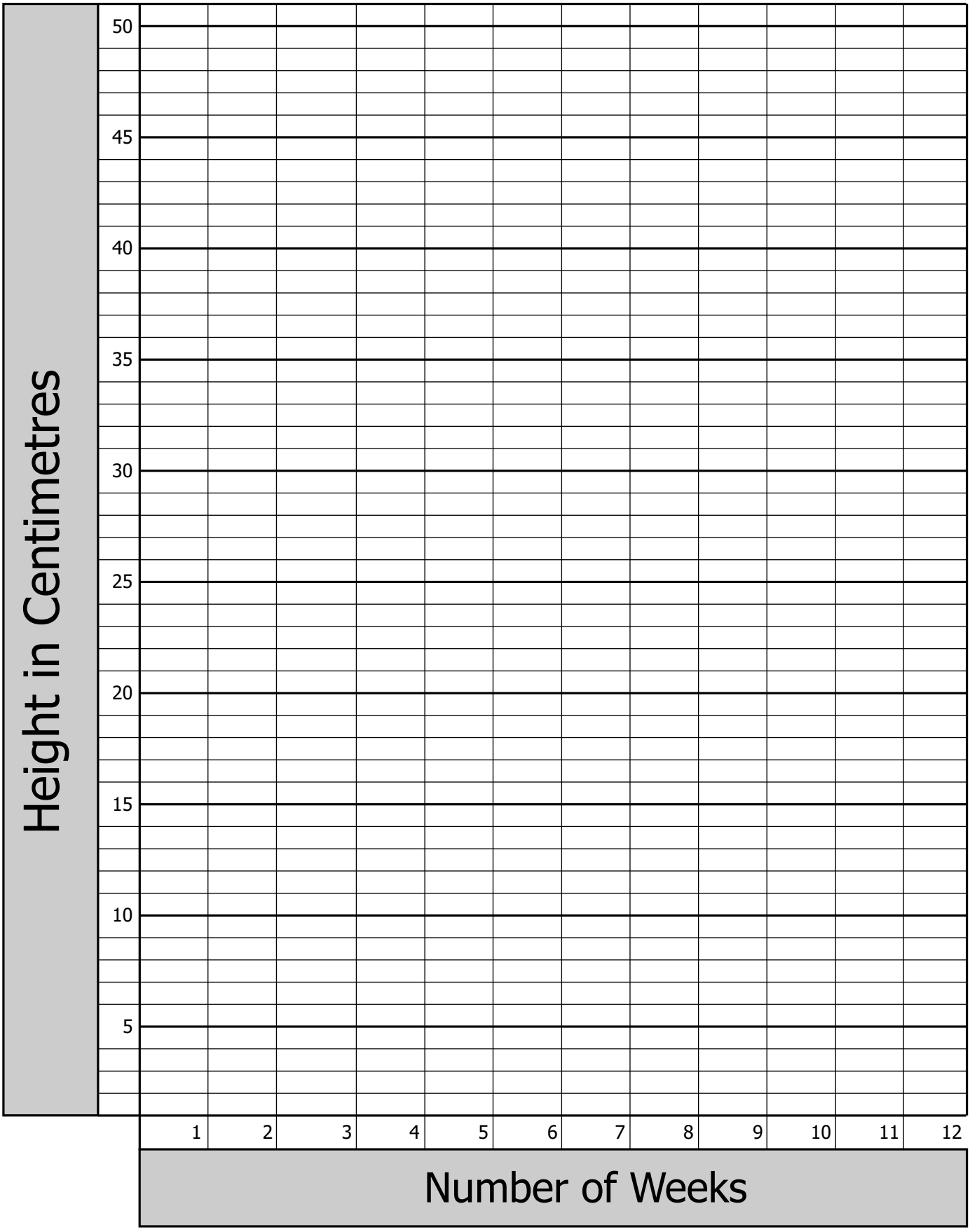
Do the plants need to be supported?
Small to medium size plants will not require support. Some larger bush or vine plants like beans or peas will require something to climb. Peas will climb on a rolled up piece of chicken-wire while for beans you can insert a stake about 50 cm tall, and loosely tie the plants to it.

When can I harvest the produce? (How long before we can eat something?)
Lettuce and Mesclun Mix can be harvested once the leaves are about 10 cm long. Cut off the taller leaves, and the plants will re-grow. You can harvest from the plants several times, so be careful not to damage the young growing leaves.

Your lettuce should be ready to eat in 4 weeks, while carrots, beans, and peas need about 8 weeks. Cucumber takes much longer.

Plant Growth Chart

Name:_____
Vegetable:_____
Variety:_____
Date Planted:_____



Plant Development Chart

Name: _____
Vegetable: _____
Variety: _____
Date Planted: _____

	Height	# of Leaves, Flowers or Fruit	Colour	Other Notes
Week 1				
Week 2				
Week 3				
Week 4				
Week 5				
Week 6				
Week 7				
Week 8				
Week 9				
Week 10				
Week 11				
Week 12				
Week 13				
Week 14				
Week 15				
Week 16				
Week 17				
Week 18				
Week 19				
Week 20				
Week 21				
Week 22				
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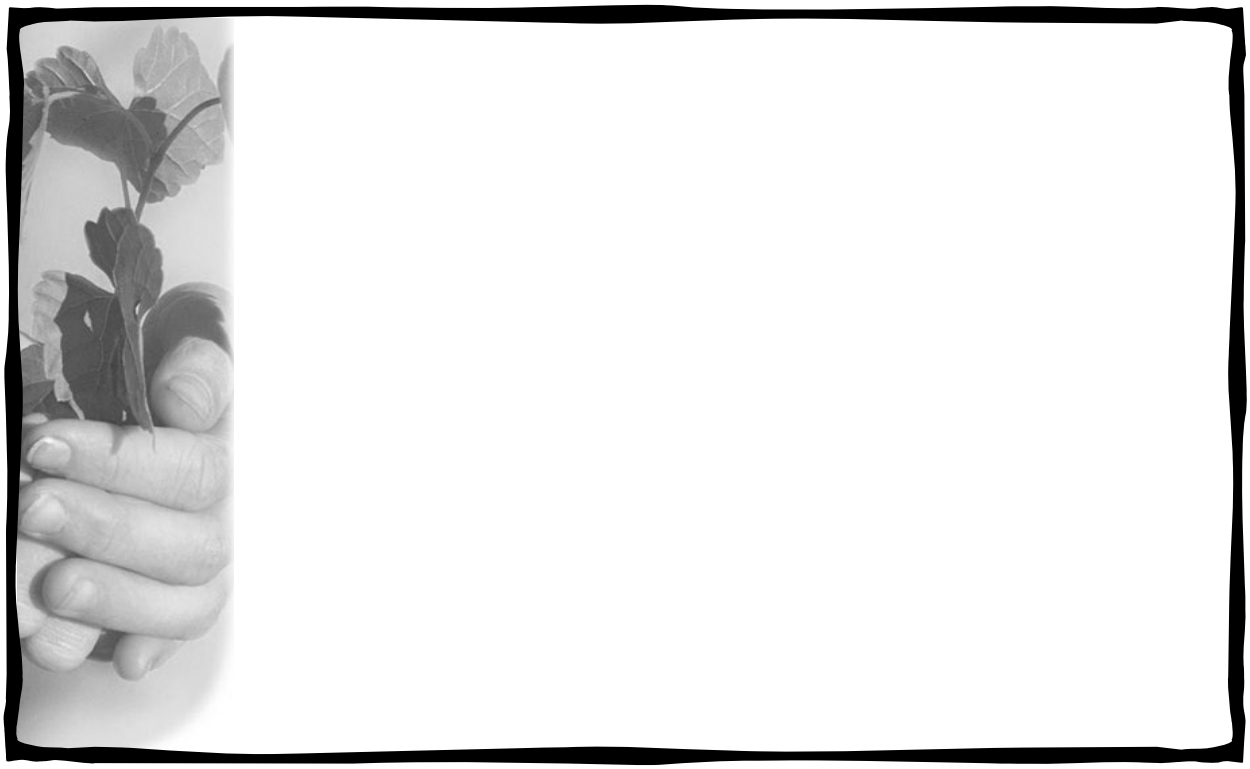
Week 24				
Week 25				
Week 26				
Week 27				
Week 28				
Week 29				

Garden Journal

Our plants look like this today, _____



ACTIVITY #1
Soil Parts and Particles

Grade 3 Science Outcomes addressed:

- explore, describe, investigate and record observations on a variety of soils, their components, similarities, and differences using appropriate tools (100-36, 100-37, 101-3, 201-5)
- ask questions and make predictions that lead to exploration and investigation about the composition of soil (200-1, 200-3)
- communicate procedures and results of investigations related to water absorption of soils using drawings, demonstrations, bar graphs, and/or written and oral descriptions (203-3)

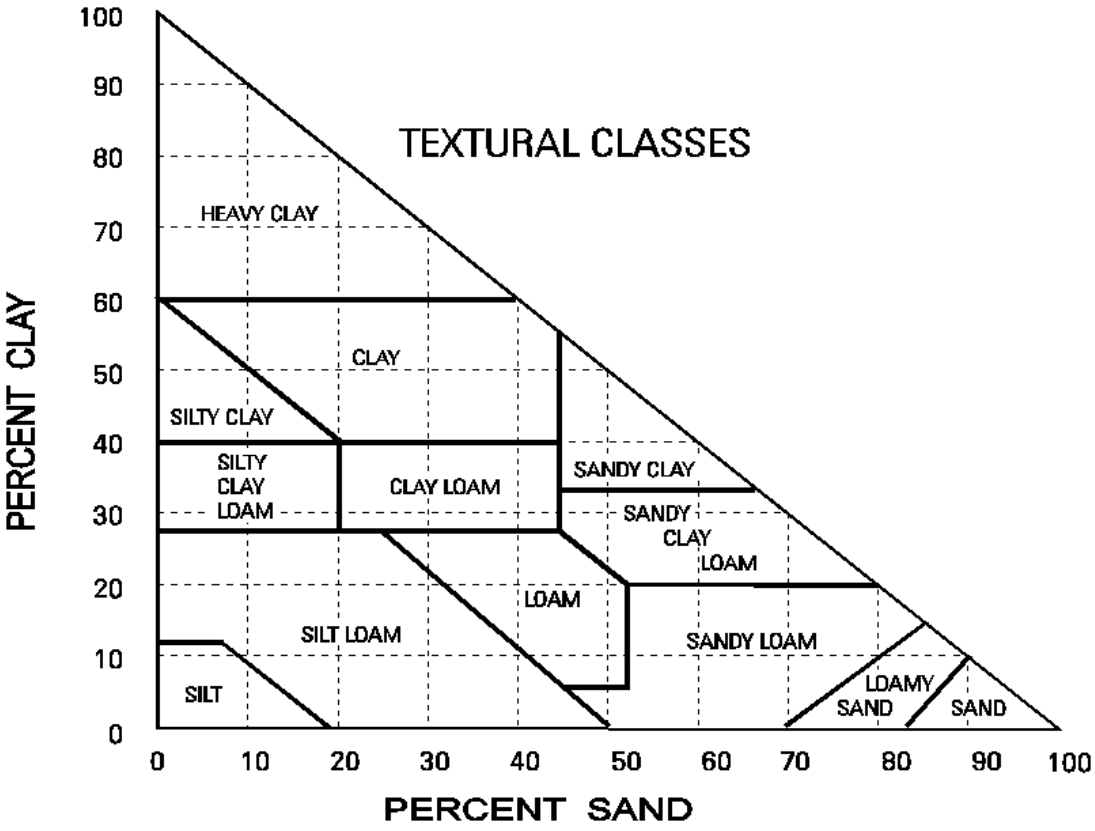
Background

Students will explore the components of soil (sand, silt, clay, organic matter) through an analysis of the texture and water holding capacity.

There are four main components of soil — classified according to their texture (feeling) or particle size. These components are sand, silt, clay and organic matter.

Component	Particle Size	Appearance	Feel	Comments
SAND	Large	individual grains can be seen	grains can be felt	does not hold water or nutrients well
SILT	Medium	individual grains cannot be seen without a magnifier	feels like powder or flour	holds water (minimally)
CLAY	Small	individual grains cannot be seen	grains cannot be felt; feels sticky when wet	holds water and nutrients well; is hard when dry
ORGANIC MATERIAL			sticky when wet	holds water and nutrients well; should be mixed with other soil components for effective plant growth; rich in nutrients

Canadian Soil Texture Triangle



Soil textural classes showing percentages of clay and sand in the main textural classes of soils; the remainder of each class is silt. Taken from Canadian Soil Information System (http://sis.agr.gc.ca/cansis/glossary/texture,_soil.html)

In nature, most soils contain a combination of these types. Soils with a mixture of sand, silt and clay are called loam. Loam is often referred to as the “ideal soil” as it is found to be the best for growing many plants. It contains a range of particle sizes —small particles for holding water and larger particles to allow air movement. Loam holds nutrients well. However, we can classify soils by the component that is most predominant. For example, a soil that has mostly sand (large particles) is called sandy soil (coarse texture), a soil that has mostly clay (smaller particles) is called clay soil (fine texture), and a soil with a combination of these is called loam soil (medium texture). Organic matter is part of every soil; when organic matter is the main ingredient of the soil, it can be called an organic soil or “muck”.

Activity station set up:

Students in groups will rotate through four stations. Depending on class size and dynamics the teacher may wish to double the number of stations. Allow 10-15 minutes per station.

Investigate the properties of each component of soil describing predominant characteristics of the samples. Each activity station should feature one soil sample from the kit.

At each station divide each soil sample into three parts - one for dry and wet “feel” tests and another for the water holding test. Set up the water holding test by placing a small amount of the soil type into a coffee filter inside a funnel. Place the funnel over a jar or beaker. Pour a small amount of water into the funnel to dampen the soil sample. Since the samples included in the kit will be needed again for further activities it is important to save the soil samples.

Procedure:

Have students rotate through the four soil station: sand, silt, clay and organic matter and record their observations as listed in the Activity Sheet.

a) For the “feel” test, provide open containers for each sample so students can handle the soil.
b) For the “ribbon” test, have students pick up a clump of the damp soil and form a ball. Try and create a “ribbon” of soil by squeezing the ball, pushing soil out between the thumb and forefinger. Record the length of the ribbon formed. Soils with high clay content will form long ribbons while those with high in sand content will not.
c) For the water holding test, have students add a small amount of water to the damp soil sample in the filter funnel. Have them observe and record how much water runs through the filter (eg. Provide a ¼ cup measuring cup and a container of water to use).
d) Discuss the advantages of “loam” type soil and the soil components which make it up.

ACTIVITY SHEET

Soil Parts and Particles

Name:_____

Observations	**Sand**	**Silt**	**Clay**	**Organic Matter**
The dry soil feels... (powdery, grainy, hard)				
The colour is				
I can see each grain	yes no	yes no	yes no	yes no
Feel Test: the wet soil feels ...(soapy, gritty, sticky)				
Ribbon Test*: I can make a ribbon this long	**more than 2 cm** **about 2 cm** **less than 2 cm**	**more than 2 cm** **about 2 cm** **less than 2 cm**	**more than 2 cm** **about 2 cm** **less than 2 cm**	**more than 2 cm** **about 2 cm** **less than 2 cm**
Water goes through the sample.....	very well not very well	very well not very well	very well not very well	very well not very well
I think this would be good for growing plants	yes no	yes no	yes no	yes no

*The longer the ribbon produced the more clay content in the soil sample.

ACTIVITY #2
Plant Life Cycles

Grade 3 Science Outcomes addressed:

- make predictions about which conditions will be best for plant growth (200-3)
- draw inferences that identify and investigate life needs of plants and describe how plants are affected by the conditions in which they grow (100-29)
- identify and describe parts of plants and their general function (100-28, 203-2)
- observe and describe changes, using written language, pictures, and charts, that occur through the life cycle of a flowering plant (100-30, 201-5)
- describe ways in which plants are important to living things and the environment (102-12)
- identify parts of different plants that provide humans with useful products, and describe the preparation that is required to obtain these products and how our supply of useful plants is replenished (102-13)
- respond to the ideas and actions of others and acknowledge their ideas about the uses and replenishing of plants (203-5)

Background

A plant's life cycle describes how long it takes to grow to maturity or how long it takes to grow, flower and set seed. Plants have a few lifecycle strategies and can be described as being annual (completes its lifecycle in one growing season), biennial (requires two growing seasons), and perennial (plants which live for three or more years). New plants can grow from seed, or from vegetative parts of the original plant.

Students will explore various plant parts and investigate their function and use. Plants have many means of reproducing from various structures such as roots, stems, leaves and flowers.

Plant part	**Function**
Roots	Anchors and supports plant; takes up water and nutrients; stores food; some can produce new plants.
Stems	Supports the leaves ; transfers water and nutrients; some store liquids and food; some can produce new plants.
Leaves	Uses sunlight and chlorophyll to convert CO2 and water to sugar; gives off water to regulate temperature; gives off O2; some can produce new plants.
Flowers	Produces seed; attracts and feeds certain birds, insects and other pollinators.
Fruit	Protects seed; helps seed disperse.
Seeds	Produces new plant; protects young plant from natural forces; provides food for young plant.

Flower Part	Reproductive status	Description
Petal	Non fertile	Surrounds fertile parts usually brightly coloured
Sepal	Non fertile	Surrounds the fertile parts usually green in colour
Stamen	Male reproductive parts	Made up of anther (where pollen grains are produced) and filament (supports the anther)
Pistil	Female reproductive parts	Made up of the stigma (receptacle for pollen), style (tube leading to ovary), ovary (contains ovules which develop into seeds following fertilization)

Procedure:

Have students complete each of the activity sheets.

a) For the Plant Parts Chart have students think about specialized parts of plants used for food. Then have them match the foods in the list to which plant part they come from using the list of plant parts and the activity sheet.

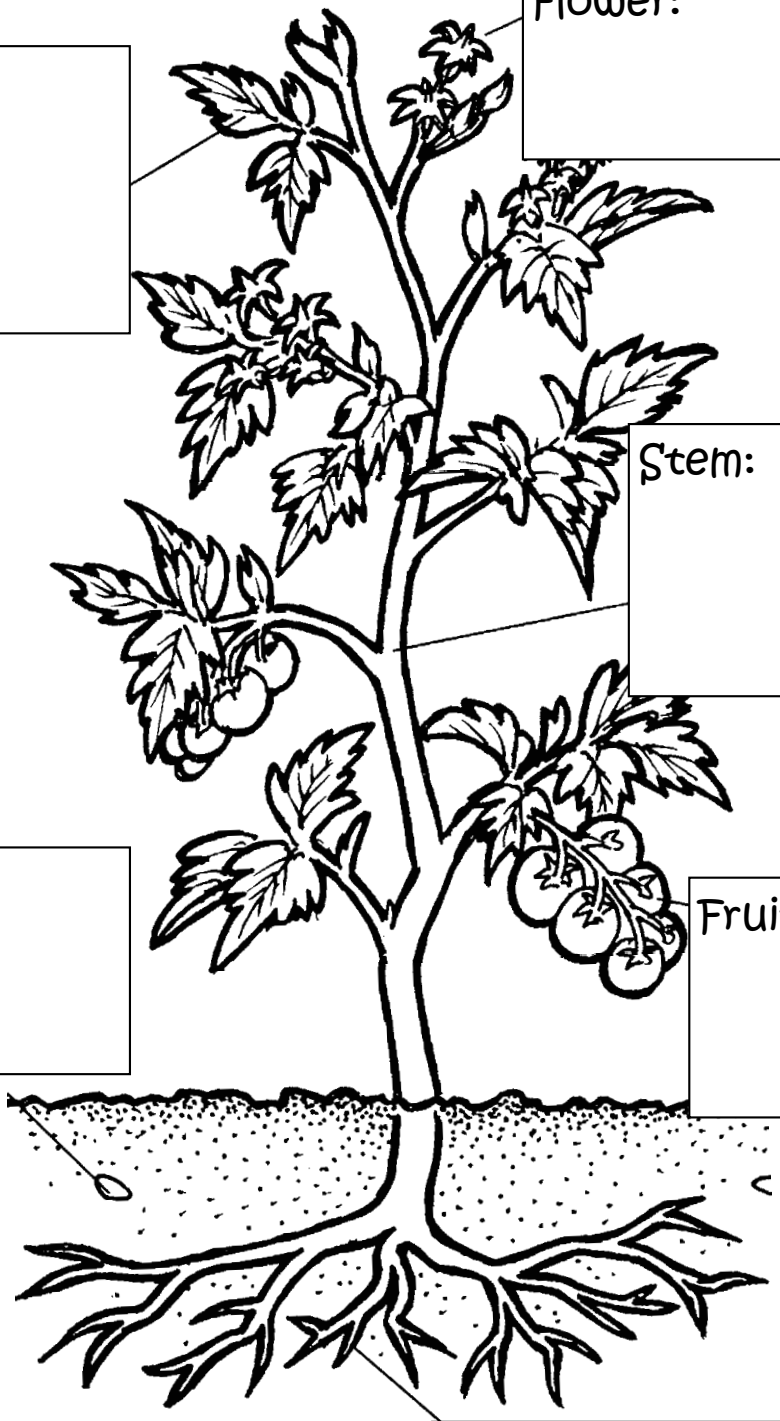
   This can also be done as a relay race. Set up a bag of food cards at the start and the six bags (each labeled with a plant part) at the end for each of two teams. Each student must pick a card from the bag at the start and go to the front and drop it in the appropriate plant part bag at the end. Continue until each student has gone through once, according to a time limit, or until all the cards are gone. Score 1 point for each food item in the correct bag.

b) For the “Parts of Flower” students can learn the various parts which make up a flower and their role in reproduction.
c) For the “What’s inside a Bean Seed?” activity have students identify what each of the names to each of the parts of the seed. **Answers:** 1. First Leaves, 2. Embryonic Root, 3. Seed Coat, 4. Cotyledon
d) For the “Fun with Photosynthesis” have students match the correct words in the equation from the bottom of the page to the shapes in diagram to learn how plants make their food.

Plant Parts Chart

Flower:

Leaf:



Stem:

Seed:

Fruit:

Root:

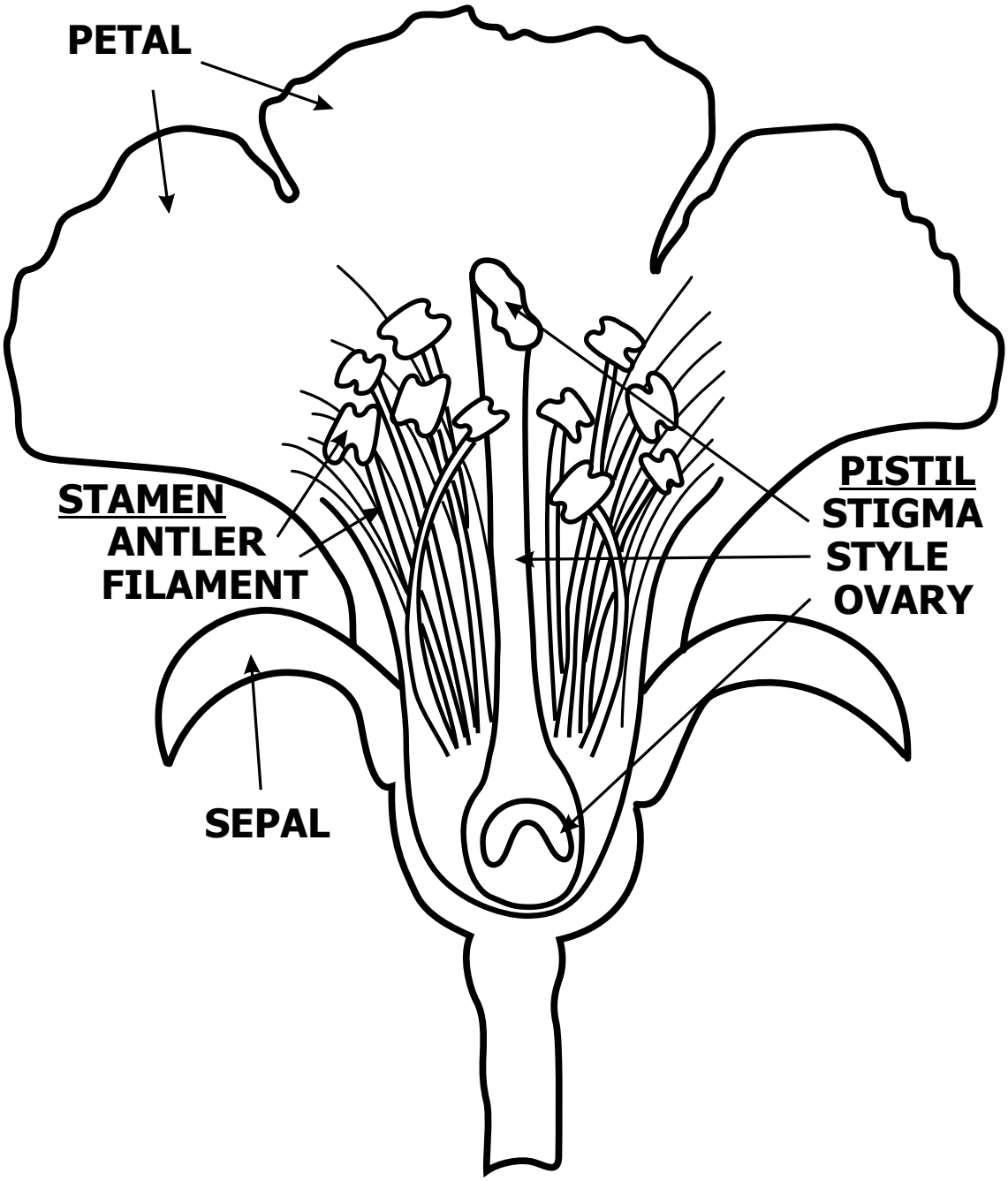
Match up each of the food items with the plant part it comes from. Write your answers in each box.

Plant Parts List and Activity Answers

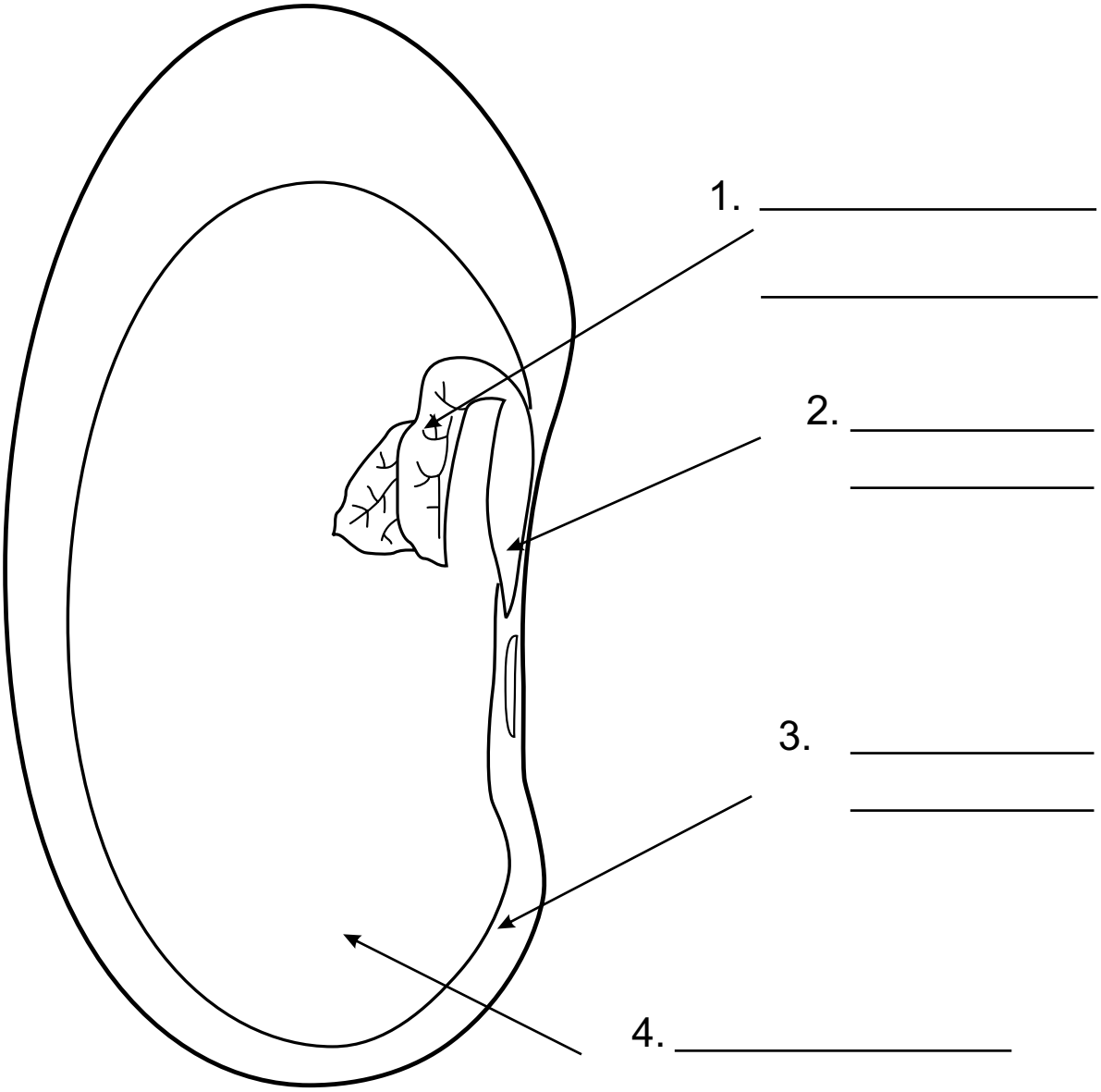
Food item	Part of plant	Grown in Nova Scotia?
Broccoli	Flower (buds)	Yes
Cauliflower	Flower (buds)	Yes
Cloves	Flower (buds)	No
Zucchini	Fruit	Yes
Cucumbers	Fruit	Yes
Tomatoes	Fruit	Yes
Bananas	Fruit	No
Apples	Fruit	Yes
Blueberries	Fruit	Yes
Oranges	Fruit	No
Spinach	Leaf	Yes
Cabbage	Leaf	Yes
Onions	Leaf (modified leaves)*	Yes
Brussels sprouts	Leaf (new leaves)	Yes
Lettuce	Leaf	Yes
Carrots	Root	Yes
Radishes	Root	Yes
Turnips	Root	Yes
Soybeans	Seed	Yes
Wheat	Seed	Yes
Lentils	Seed	Yes
Almonds	Seed	No
Peanuts	Seed	No
Corn	Seed	Yes
Peas	Seed	Yes
Asparagus	Stem	Yes
Celery	Stem	Yes
Potatoes	Stem (underground)**	Yes
Sugar cane	Stem	No

*An onion is a bulb which is a short stem surrounded by fleshy leaves or leaf sheaths.
**A potato is a tuber which is an enlarged portion of a stolon. A stolon is a stem which runs along the ground or slightly below the soil surface.

Parts of a Flower



What's inside a BEAN SEED?

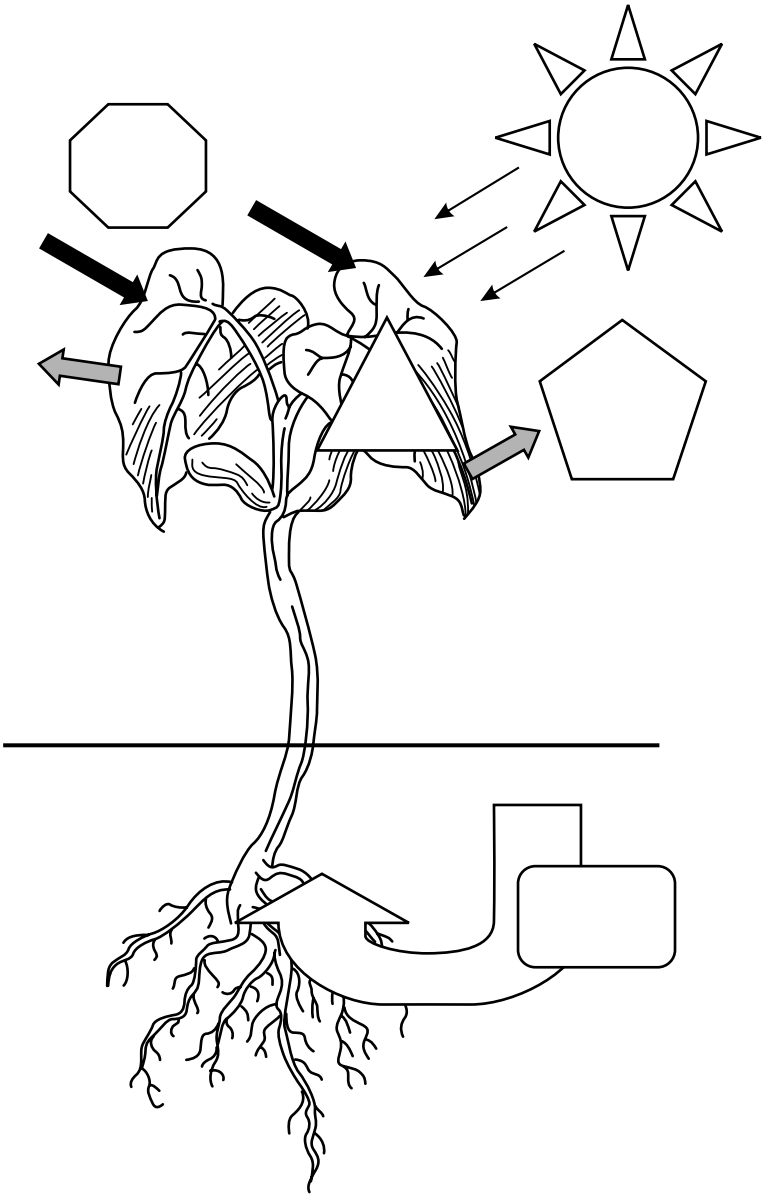


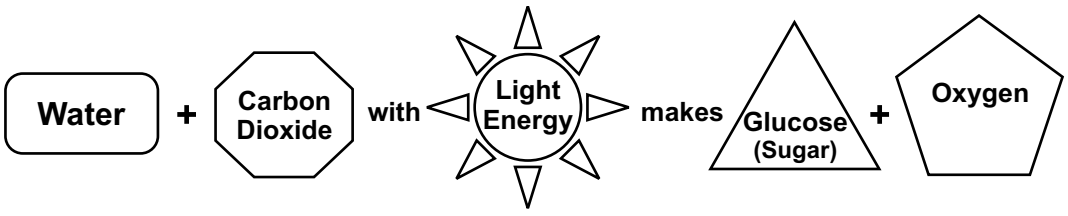
Name and match the different parts of the bean seed.

- Cotyledon
- Embryonic Root
- First Leaves
- Seed Coat

Fun with Photosynthesis!

Write the correct words in the matching shapes to learn how plants make food (glucose /sugar) and oxygen from water, carbon dioxide and light energy!





ACTIVITY #3
Food and Culture

Grade 3 Outcomes addressed:
Social Studies (*Draft outcomes as of June 2010, developed through CAMET)
3.1.1 Locate their province in the Atlantic region, Canada, North America and the world
3.2.1 Examine the origins of the diverse peoples in their province
3.2.2 Examine how diverse peoples in their province express their culture

Health Education
3.2 demonstrate an awareness that people living in their province have values, traditions, and beliefs that influence food choices

Background
Everyone has to eat and in every culture food is important in the way it is acquired, prepared, who eats it and where it is eaten. Depending on the community you live in, eating out, visiting the grocery store or local farm market may provide opportunities to access various foods more common to other cultures around the world. As well, for an ever increasing diversity in the cultural background of Nova Scotia there is an increasing demand for international or ethnical foods from a various sources.

Nova Scotia farmers produce a large variety of crops and livestock, however they do not grow all the food that is consumed here for a number of reasons, which may include: our climate; the food is imported more cheaply; or markets may be too small for farmers to produce some food items economically. Greenhouse production, modern processing and storage techniques are making more and more traditional foods available throughout the year. While Nova Scotia farmers do supply some foods entirely and export surpluses, much of the food consumed in Nova Scotia is supplied by other Canadian provinces or imported from various locations around the world.

Procedure
Have students complete each of the activity sheets.

a) For the “Culture and Our Foods” sheet have the students answer the questions on the sheets. The answers can be shared and discussed amongst the class.
b) Use the “Does Your Breakfast Need a Passport?” sheet to add up the distance the food must travel for the breakfast on the sheet and to consider what differences their food choices can make.
c) Teachers or students can read the “The Gift of Three Sisters” sheet and discuss the importance of food in culture and the practice of companion planting.

Culture and Our Foods

Answer the following questions in the space provided below.

1 What are some favorite foods you and your family might enjoy during special holiday meals?

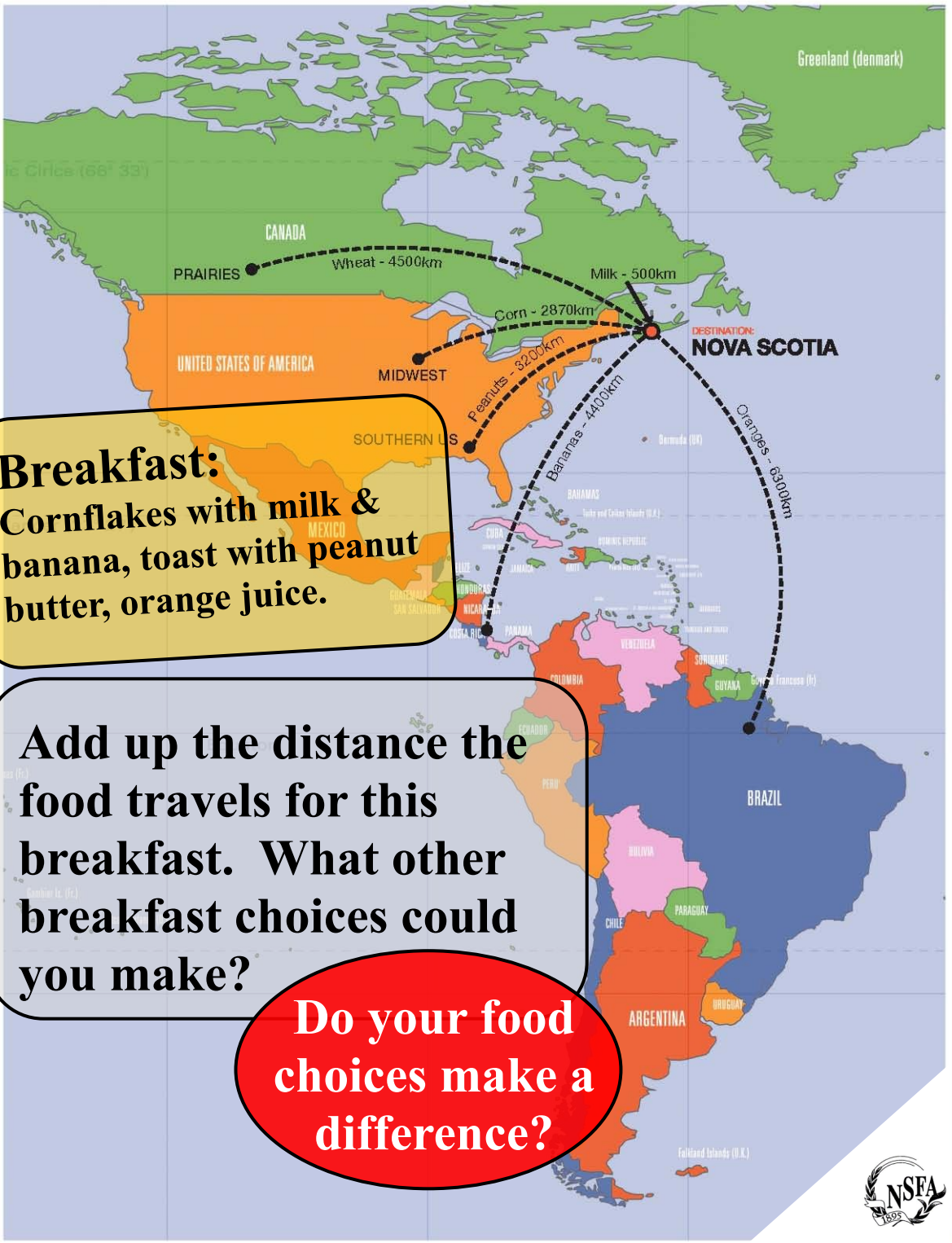
2 Are there foods that are special to your family or that may have come from a grandparent's recipe?

3 Does your family grow your own food in a garden, on a farm or in a greenhouse? Where does most of your food come from?

4 Are there specific manners, behaviours or rules around your family's table?

5 Describe in one sentence a food tradition your family has or that you want your family to start.

DOES YOUR BREAKFAST NEED A PASSPORT?



The Gift of Three Sisters: An Iroquois First Nations Legend

“Sisters who would never be apart from one another – Sisters who should be planted together, eaten together and celebrated together.”

"A long time ago there were three sisters who lived together in a field. These sisters were quite different from one another in their size and way of dressing. The little sister “Bean” was so young that she could only crawl at first, and she was dressed in green. The second sister “Squash” wore a bright yellow dress, and she had a way of running off by herself when the sun shone and the soft wind blew in her face. The third was the eldest sister “Maize”, standing always very straight and tall above the other sisters and trying to protect them. She wore a pale green shawl, and she had long, yellow hair that tossed about her head in the breeze. There was one way the sisters were all alike, though. They loved each other dearly, and they always stayed together. This made them very strong.”– Lois Thomas, in Indian legends of Eastern Canada, Toronto (Ontario, Canada), 1969

This Legend, and the practice of planting in a group, is known as a companion planting. While the Three Sisters are quite different, each benefits from aspects of the other. The maize (or corn) grows tall and provides something for the beans to climb on. The beans are a legume, and legumes fix nitrogen from the atmosphere in the soil. This provides nutrients for all three sisters. The squash grow low across the ground and have many leaves which help block the sunlight and prevent weed growth and help retain moisture in the soil.

Who am I?

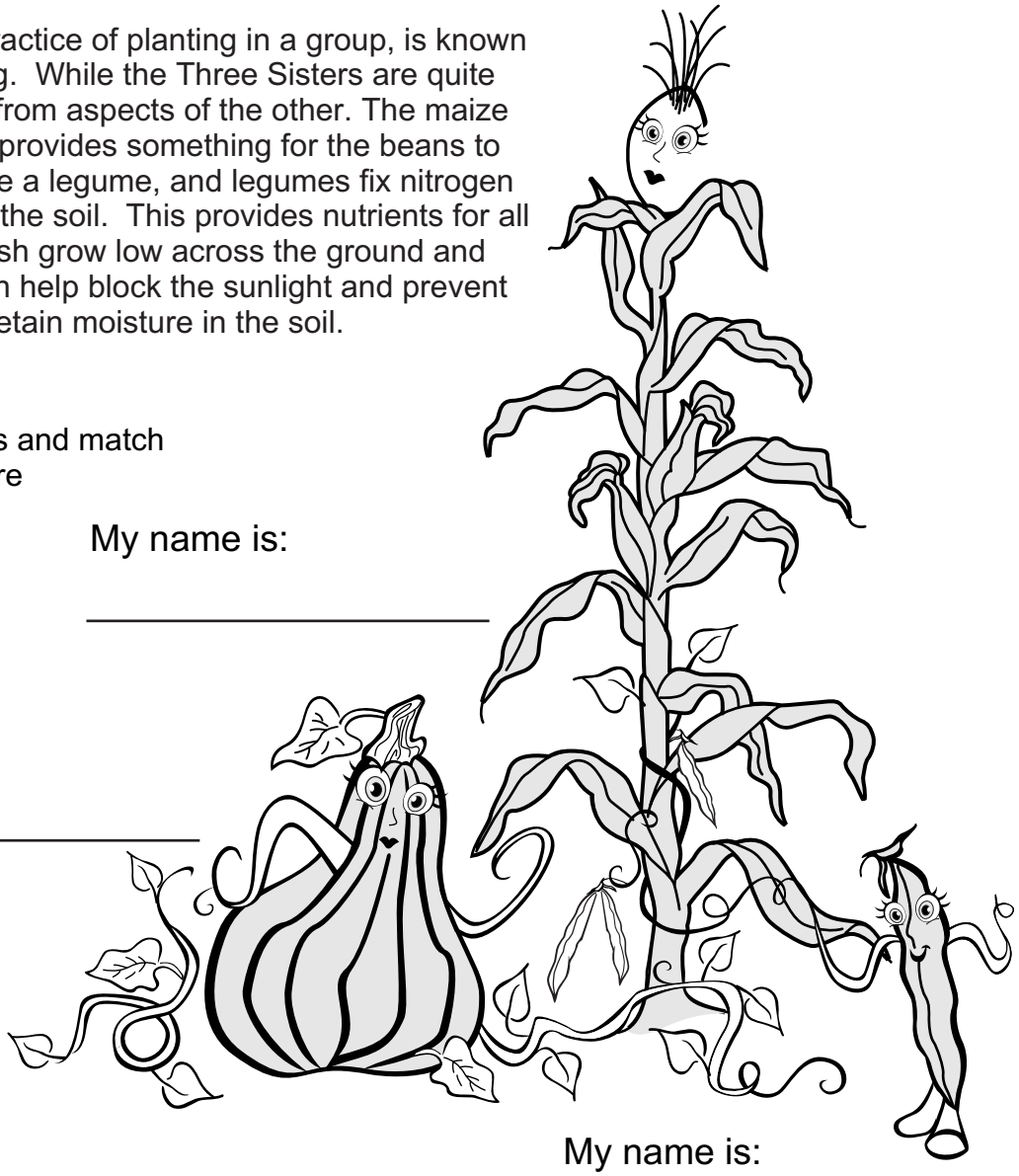
Colour the Three Sisters and match their names to the picture

My name is:

_____

My name is:

_____



My name is:

_____

Electricity Use with the Windowsill "GROWcery"
Your Windowsill "GROWcery" kit has been supplied with a 23 Watt Compact Fluorescent Light (CFL) cool white bulb compliments of Nova Scotia Power. This bulb will give the lighting equivalent of a 100 Watt incandescent bulb.

Compare the electricity consumption of the 23 Watt CFL vs the 100 Watt incandescent if each were used with the kit for a 1 year period.

Bulb type	**Compact Fluorescent Light (CFL)**	**Incandescent**
Watts/bulb	23 Watt	100 Watt
Hours/day	16 hr	16 hr
Days/year	365 days	365 days
Kilowatt hours/year	**134 KWh**	**584 KWh**
Cost to operate at $0.118/KWh	$15.85	$68.91

Electricity used (kWh) = hours of use each day x days used x wattage of bulb divided by 1000
Cost = electricity used (kWh) x electricity rate ($/KWh)

CFLs use 75% less energy than incandescent light bulbs.
Ways to reduce the amount of energy used for lighting:

- Turn off lights when you don't need them.
- Replace incandescent bulbs with efficient ENERGY STAR™ compact fluorescent lights – now available in a wide variety of sizes and styles.
- Make the most of natural daylight.
- Use a single more powerful light where you now have two or more. Lower wattage incandescent lights are less efficient. It takes two 60-watt bulbs to provide the same light as one 100-watt bulb.
- Save energy by reducing background lighting and focusing light where it's needed through task lighting.
- Switch to lower-wattage bulbs to avoid over-lit rooms.
- Control the intensity of light with dimmer switches.
- Switch your holiday lights to LED lights. LEDs use 90% less electricity and last 10 times longer than traditional glass holiday lights.

For more energy saving tips and programs visit http://www.nspower.ca/

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