



WASATCH COMMUNITY GARDENS

SCHOOL GARDEN CURRICULUM

VOLUME 1

Introduction

Throughout the years, one of the most common refrains that Wasatch Community Gardens hears from school gardens is that teachers just don't know what to do out in the garden. After digging a bit deeper into that statement, we have found that the root of the issue lies in trying to fit the garden year to the school year.

Most casual gardeners are avid tomato and cucumber growers, but those are summer crops! They need almost constant care and attention during exactly the months that no one is at school and they give off their harvest in small amounts, which is hard to design a lesson plan around.

This curriculum introduces teachers to crops that grow during the school year and produce all at once, so they are easy to when trying to feed a whole class.

This curriculum has lesson plans for the nine growing months of the year that include planting plans and worksheets. Everything you need to get started with growing and eating food with your class out in the garden is included here. If you have any other questions, head to www.wasatchgardens.org for resources, workshops, and more support.

Let's get growing!



All of the vegetables for this curriculum are easy to grow from seed!

In the spring you will need:

Carrots (try to find a quick-growing variety like Mokum), beets, peas, lettuce (a light flavored one like Buttercrunch works best), spinach, and radish seeds

In the summer you will need:

beets, kale, pumpkin (a good 'eating pumpkin' like Sugar Pie), and flower seeds

February - Seed Catalogue Parts of the Plant

Materials

Seed catalogues, plastic sheet (and extra-large black hefty outdoor trash bag or a clear drop cloth from the hardware store are both great options), construction paper, scissors, glue, crayons

Preparation

Get seed catalogues, write a few adorable garden Valentine puns ("Would it be corny if I asked you to be my Valentine?")

Activity

Intro - 5 minutes

It is time to start thinking about the garden again! Today, we're going to be heading out to the garden to see what it looks like. Try to pay close attention to what is going on out there. See if you can spot any early signs of spring!

Out in the garden - 10 minutes

Go out to the garden and clear your bed of snow. Use tools if they're available or just mittened hands. Spend some time making observations that could mean that spring is right around the corner. Are there any birds singing? Are there any green sprigs on the trees or around the garden?

Valentines - 25 minutes

Tell the students that because you love the garden so much, the class is going to be making garden themed valentines! Explain that you are going to use the seed catalogues to come up with a few Valentine's Day puns (which are a kind of joke). Give a few examples to your students. Puns are a very complex language concept! If your students are able to grasp the concept, encourage them to try to come up with a few of their own. If not, write a few puns on the board and have students copy them down. Talk through the vegetable with them and then challenge them to find the vegetable in the seed catalogue. For example: Have students copy down "Being your Valentine couldn't be BEET" and then ask them to find a picture of a beet in the catalogue! Whether students are learning to write their own puns or are working to identify different vegetables, they usually get the general silliness of the activity.



March - Planting a Rainbow

Materials

Spring seeds (lettuce, spinach, radishes, carrots, beets, peas), construction paper, scissors, glue, poster board

Preparation

Buy seeds, cut example vegetables out of colored paper (lettuce, spinach, pea, carrot, radish, beet)

Activity - 45 minutes

Intro - 15 minutes

Today, we're going to plant the spring garden and making spring garden posters! Make a list on the board of all the seeds that you are going to be planting. Have the class help decide what colors they are and what nutrient that color might indicate: spinach - dark green - iron, baby beets/beet greens - purple - iron, butter crunch lettuce - light green - Vitamin C, carrots - orange - Vitamin A, radish - white/pink - fiber.

After you've told your class what you are going to be planting, explain how to plant them. Divide the students up into groups and give each group a different seed to plant. Using the planting plan, explain that the peas will be planted in the middle of the box (in small holes, with 3 seeds/hole), then carrots and beets will be planted in rows right outside of the peas, spinach and lettuce will be planted in rows after the carrots and beets, and the radishes will be planted in rows along the end caps.

Planting - 10 minutes

Out in the garden, hand out seeds to the students, and have them patiently take turns as you re-explain how to plant the bed. Peas first, followed by carrots and beets, followed by lettuce and spinach, and radishes finishing it up.

Garden Poster - 20 minutes

Back inside the classroom, let the students know that the seeds are going to take a loooooooooooooong time to grow. For a few weeks, it won't seem like anything is happening out there, then very tiny plants will start coming up and growing. In order to remember what was planted, the class needs to make a poster of the garden.

Ask the students if they remember what they planted and as they call out the different plants, show them the example vegetable that you created, discussing the colors and shapes that you used. For example: when the students call out "spinach!" show them the example spinach patch you made. Show them that it was just tear-drop leaves with rectangle stems all glued together into a spinach patch. Explain that because there is only one shade of green, that you used a combination of blue and green to indicate that spinach is dark green.

Divide the students up and let them work in groups making their vegetables. Assign a few students the task of creating the base of the poster - the soil, worms, sun, weather elements, etc. After 10-15 minutes, have the students bring their vegetables to the base poster, and glue them on. It is easiest for the teacher to do the actual gluing so that all the vegetables fit in their proper place. When the poster is done, hang up the poster in the garden corner of the classroom and re-explain that the plants will NOT be ready for at least eight weeks!

April - Watching the Garden Grow

Materials

Ruler, pencil, paper, clipboard, poster board, envelope, construction paper

Preparation

Draw the x and y axis of the bar graph on the poster board. Cut rectangles that represent 1 cm out of construction paper and put into the envelope. Affix the envelope to the poster board.

Activity - 20-30 minutes/week

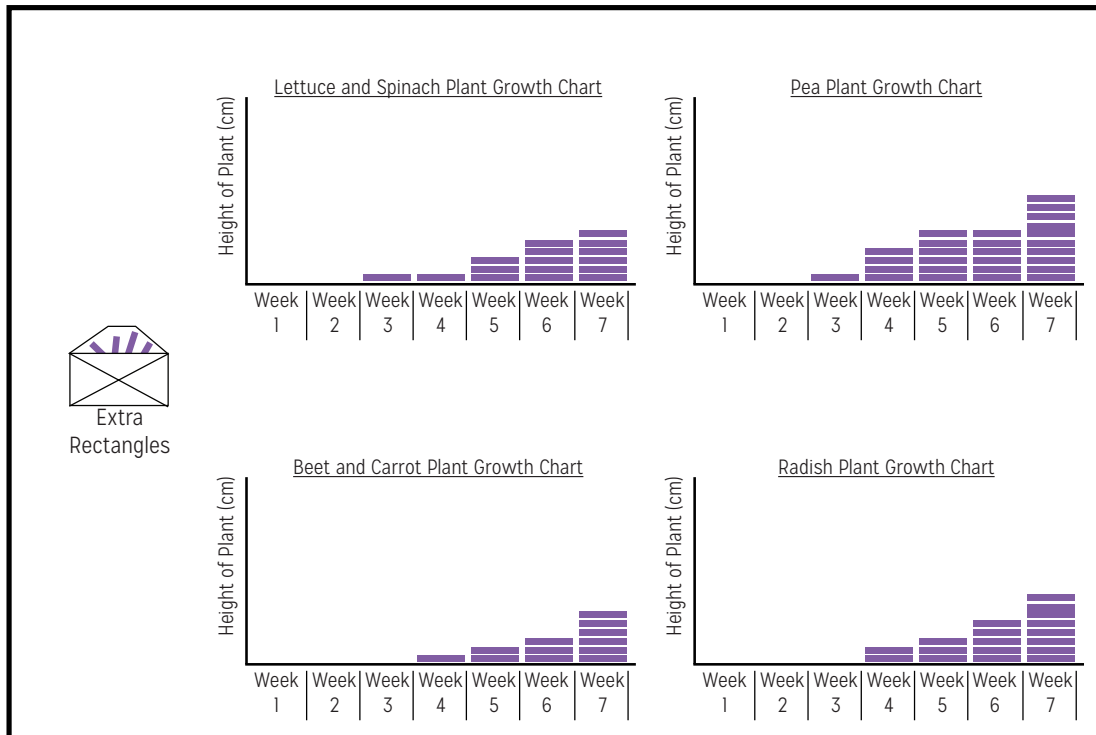
Intro - 5 minutes

Explain that the class is going to be tracking the growth of the seedlings out in the garden. Every week, they are going to go outside to measure the growth of the seedlings and graphing it inside on the poster board.

In the Garden - 10 minutes

Once a week for 6-8 weeks, head out to the garden to measure seedlings. Divide the students up into groups to measure all the different plants (a few students will measure the peas, others will measure the spinach, etc). Have students work in pairs to measure and record how tall the seedlings are. Caution the students to be VERY CAREFUL not to disturb the growing plants as they measure! Have students take turns measuring and recording so that each student gets a chance to read the rulers.

Graph It - 10 minutes



Back in the classroom, write down all the recorded numbers on the board and (either as a class or individually) come up with an average for each plant. Affix the correct number of rectangles to the graph to represent the total height of the plant for that week.

Watch your plants grow!

May - Salad Party

Materials

Salad plants (carrots, spinach, lettuce, radishes, pea shoots, beet greens), salad dressing in a jar (made of 1 TB olive oil, 2 TB honey, and 1/4 cup lemon juice), bowls, forks, harvest salad bowls, 3 buckets for 3-tier sink, dish soap, sponge, bleach, poster board, colored stars, summer seeds (pumpkin seeds, flower seeds, kale seeds, beet seeds)

Preparation

Mix salad dressing, gather supplies, print stars, set up 3-tier sink

Activity - 45 minutes

Intro - 10 minutes

Today the class is going to go outside and harvest the salad!

Before the day gets going, read *The 2-Bite Club* book (found at <https://www.fns.usda.gov/tn/two-bite-club>) and talk about the importance of tasting everything that is out in the garden. Most students will have tried salad before in their life, and will know that they 'don't like it without ranch'. Encourage them to try and take at least two bites of the salad out in the garden. If they taste all the different salad elements, they will get to hang a star up and become a part of the 2-Bite club!

Make Salad - 20 minutes

Head outside and pass out bowls. Have students harvest some lettuce, spinach, and beet greens to create the base of their salads. The peas won't be mature, but you can eat the pea sprigs (the curly part of the pea). Have students try to find a curly sprig to put in their bowl. Harvest the carrots and radishes and slice them up and put a couple in each students' bowl. Top with a small drizzle of salad dressing and enjoy!

After students are done eating, have them wash, rinse, and sanitize their bowls. Place them upside-down on the table to dry.

While students are finishing their salads, other students can be out in the garden, observing signs of summer and enjoying the sunny weather. When all the students are done eating and washing up, have them all gather around the class bed.

Clear the class bed of all the spring plants being sure to remove the roots. Have students rake the bed smooth with their fingers. Using the planting plan, plant pumpkin seeds in the middle of the bed, then rows of beets, kale along the edge of the bed, and flowers on the end caps. If there are watering cans, water the seeds.

Fill Out Stars - 10 minutes

Head back inside and let students cut out a star. Have them write their name on the star. Help them think through ALL the foods that they ate out of the garden over the year (pumpkins, kale, beets, spinach, lettuce, radishes, pea shoots, carrots) and have them write their favorite one on their star. When they are done, they can affix their star to the poster board. Hang the poster board in the garden corner, and reflect on the amazing work your class did out in the garden!

HONEY LEMON SALAD DRESSING

Ingredients:

- 1 Tablespoon honey
- 1/3 cup lemon juice
- 1 Tablespoon olive oil

Blend together in a jar and drizzle over garden fresh salads!

June - Take a Break

Materials & Preparation

None

Activity

In Utah, June is a quiet month in the garden. The water should be on automatic at the garden and the weeds shouldn't be too crazy yet. You should be able to walk away from the garden for the full month of June. Take a rest. Spend some time rejuvenating. Enjoy the month of calm.



July - Plan a Work Party

Materials

Gloves, water bottle, garbage bags, snacks

Preparation

Gather a crew of helpers!

Activity

Head out to the garden to see how it's doing. Gather a few helpers or spend some time working alone in the garden weeding beds and pathways. The heat of July often jumpstarts weeds, so at least one work session in the middle of the summer is necessary to keep things in check.

August - Back to School

Materials

Poster board, worksheet

Preparation

Dedicate an area on your walls to the garden. By following this curriculum, your class will be creating four posters, and it's nice if they're all grouped together into one "Garden Corner". The Garden Rules poster is the only one that needs to be created before the lesson begins.

Activity - 30-45 minutes

Garden Rules - 5 minutes

Let your class know that they will be working out in the garden this year! Working out in the garden can be super fun, but there are a few rules that need to be followed.

Point out the Garden Rules poster on the wall and discuss the rules with the class.

Wasatch Community Gardens uses the following rules, but feel free to come up with your own!

- 1. Be respectful and always listen carefully in the garden*
- 2. Keep your feet on the pathways*
- 3. Pick and eat only what you are invited to pick and eat*
- 4. Don't kill any bugs, insects, or animals in the garden*

Garden Tour - 10 minutes

Go out to the garden to observe what is growing. Explain that the students in your last class planted the plants that are in the garden bed, but that this class gets to eat them! You are going to 'pay it forward' in the spring when you will plant the beds for next years' students. Practice the garden rules by trying to find bugs (but not kill them!), keeping feet on pathways as you walk through the garden, and pulling weeds NOT plants. Explain that the plants that are in the bed are not quite ready to eat, but next month we will be harvesting them.

Worksheet - 10 minutes

Now that we've seen the garden, let's discuss nutrients. Write the words nutrition and nutrients on the board. Have the class discuss what they are. (Nutrition is understanding that what we eat affects our health. Nutrients are the foods we eat: the vitamins, minerals, carbohydrates, proteins, fats, and water that keep our bodies functioning.)

One way to be healthy is to get plenty of nutrients. Discussion: Ask the class if they know how to get a variety of nutrients. You get them by eating a wide variety of foods! Can the class name all the different categories of foods and an example from each one? Do they know some key nutrients from each food group, i.e. calcium from dairy, Vitamin C from fruits, iron from proteins, carbohydrates from grains, etc. It is helpful to have a MyPlate poster on the wall to help students visualize the food groups.

Throughout the year, we are going to be learning about the different nutrients that we get from the vegetable food group. This is because vegetables are what we are going to grow out in the garden! The way to get a wide variety of nutrients from a single food group is to eat lots of different colors of vegetables (which we will be doing!) Discussion: Can the class come up with different colored vegetables, i.e. red - radish, orange - carrot, yellow - squash, green - spinach, purple - beets, etc.

September - Eating Pumpkins

Materials

Pumpkins, microwave, knife, cutting board, worksheet, napkins, poster board, construction paper, scissors, glue, trash bags, animal crackers, cinnamon, hand blender

Preparation

Grow or purchase pumpkins, microwave pumpkins before class, print pumpkin life cycle prompts

Activity - 45 minutes

Review Nutrition - 5 minutes

The very first thing the class is going to eat out of the garden are pumpkins! Because we introduced nutrition last time, we are going to talk about the nutrients that are in pumpkins. Ask your students what they know about pumpkins - what color are they? What shape are they? See if anyone knows what they taste like - outside of pumpkin pie or pumpkin cookies, has anyone eaten just plain pumpkin?

Pumpkins are orange which means that they are full of Vitamin A. Vitamin A is important for your whole body: it strengthens eyesight, helps keep your memory strong, and is essential for the growth and repair of body tissues. Vitamin A is found in yellow and orange foods - ask your class if they can name any foods (other than pumpkins) that could be full of Vitamin A.

Harvest Pumpkins - 10 minutes

Head out to the garden and harvest all the ripe pumpkins. Set them aside, and clear the remainder of the garden. Pull the pumpkin vines out and throw them in the trash. Be careful not to disturb the kale and beets that are still growing.

Prepare Pumpkin Snack - 10 minutes

Back inside the classroom, cut pumpkins into quarters and clean out the pulp, saving a few seeds. Cut one of the quarters into 3 or 4 pieces and microwave them until tender (about 7 minutes). Cut the flesh into chunks and blend the pumpkin in a hand blender with some cinnamon. Serve scoops of the applesauce-like consistency pumpkin puree on animal crackers.

After students have tried the pumpkin sauce, have them write down their reflections. Did they think it was sweet? Did they like it?

Life Cycle of a Pumpkin Poster - 20 minutes

Because pumpkins do most of their growing over the summer, it is hard to observe their entire life cycle. In order to really get a sense of how pumpkins grow, the class is going to make a poster depicting the life cycle of a pumpkin.

Divide students into 5 groups and each group will make one of the garden poster elements - soil/seedlings, pumpkin vine/leaves, pumpkin flowers, green pumpkins, orange pumpkins. As a class discuss the basic shapes and colors that each group is going to need. Let students work on their garden elements in their groups. If students finish early, have them create supplementary elements - weather elements, bees, butterflies, worms, etc.

When students are finished, have student affix their garden elements to the poster in the correct order. When the poster is complete, affix the 'life stages of the pumpkin' prompts to the poster and hang it up in your garden corner!

October - Eating Kale

Materials

Kale, garlic clove, sliced almonds, salt, light olive oil, crackers, hand blender, knife, cutting board, colander, trash bag, dead leaves, hand sanitizer

Preparation

Grow kale, gather ingredients

Activity - 45 minutes

In the Garden - 15 minutes

Let students know that we are going to go out to the garden to harvest kale and put the garden to bed. Head out to the garden and have students pull the leaves off the kale and put them in the colander. Once the kale is harvested, pull out the stalks (throw them in the trash) and smooth out the soil (being careful not to disturb the beets).

Have students look through the school yard for a few handful of dead leaves. Bring the leaves back to the bed and crush them up very small. Have the students use their bare hands to lightly work the leaves into the soil. Go back inside and wash the kale. Have students wash their hands.

Make Kale Salad - 15 minutes

Once the kale is clean, put all the pieces in the hand blender and add the almonds, spinach, garlic, dash of salt, and a tiny bit of oil. Roughly chop or blend together and give each student a scoop of the salad on a cracker. You can also put the kale, spinach, almonds, and garlic on a cutting board and roughly chop them all together. Toss them with dash of salt and bit of oil. NOTE! Go light with the oil. You don't want the flavor of the salad to be dominated by the oil taste; the oil is just there to help the flavors blend. Choose and extra light olive oil and use sparingly.

Have students write their reflections down on their worksheets.

Nutrition - 15 minutes

On the worksheet, have students label the parts of the plant. Discuss what each part of the plant does, and have students write a small sentence explaining what each part of the plant is for. Discuss: Plants make their own food (during photosynthesis) and leaves are the food-making machines! Leaves are able to take the water from the stems and roots, the carbon dioxide from the air, and sunlight and turn them into a nutritious substance. This substance is called glucose. Glucose is the food used by most plants. Because leaves are the food making part of the plant, this is where most of the vitamins and minerals of the plant are located.

This is awesome for us because when we eat leaves (like the kale and spinach) we get all those vitamins and minerals. The darker the leaves, the more vitamins and minerals they contain. So, a nice dark green leaf like kale contains iron, Vitamin A, Vitamin D, Vitamin C, and calcium. Discuss: Of all the awesome nutrients that are in kale, iron is especially important for growing bodies. Iron keeps our blood strong and keeps our muscles growing. When we don't get enough iron, we have weak blood which makes us feel lethargic, tired, and makes our minds foggy. Not a good feeling at all!

Have students work on the remainder of the worksheet.

KALE SALAD

Ingredients:

1 bunch of kale
1/4 cup almonds
1/2 clove of garlic
Pinch of salt
Dash of oil

Chop everything together nice and small and drizzle with the oil. Enjoy on toast or crackers!

November - Sugar Beets

Materials

Mature sugar beets, soda water, tiny paper cups, lemon juice/limes (or other natural flavors), knife, cutting board, a can of soda, a bottle of sports drink, a can of juice, sugar cubes, worksheet

Preparation

Grow beets, gather supplies

Activity - 45 minutes

Intro and Worksheet - 15 minutes

This time of year, we are usually surrounded by sweet treats. Sugar becomes a way of life, so today we are going to talk about sugars - specifically added vs natural sugars. The class is going to try a naturally flavored sugar free soda and is going to go out to the garden to try some naturally sweet beets.

Before all of that though, we are going to have a nutrition discussion. Divide the class into three groups and give each group a drink. Tell them to look over the nutrition label on their drink and identify some key elements. Discussion: Does the class know what calories are? Calories are the way we measure how much energy is in our food. So, foods with more calories can give us more energy. Of course, not all calories are equal - sugary calories give us a quick hit of energy but it doesn't last, and will result in an energy 'crash'. Energy from proteins and whole grains will give us slower burning energy that won't make us spike or crash.

Make Natural Soda - 10 minutes

In the small cups put a lime wedge and a dash of lemon juice. Top it with sparkling water and the students drink it up! Don't make very much for each student, as most students won't like it.

Ask them what they thought. If they didn't like it, that's OK, it might not even be their fault! Discuss: There is SO MUCH sugar in our diets (it is in everything from ketchup to peanut butter to crackers) that our taste buds become accustomed to an un-natural level of sweetness. When we encounter something that is naturally sweet they might not taste sweet because our taste buds are so desensitized. We are killing our taste buds. The same thing goes for sour things. Because we are so used to artificially sour flavors being masked with sugar (commercial lemonade, sour gummy candies, etc) things that are naturally sour (like limes) taste EXTRA sour to us. By eating things without added sugars we can get our taste buds back to normal. (Interestingly enough, younger students usually have an easier time with the natural soda. As a society, we are more careful about how much sugar we give to small children and infants, but stop being as diligent with older kids.)

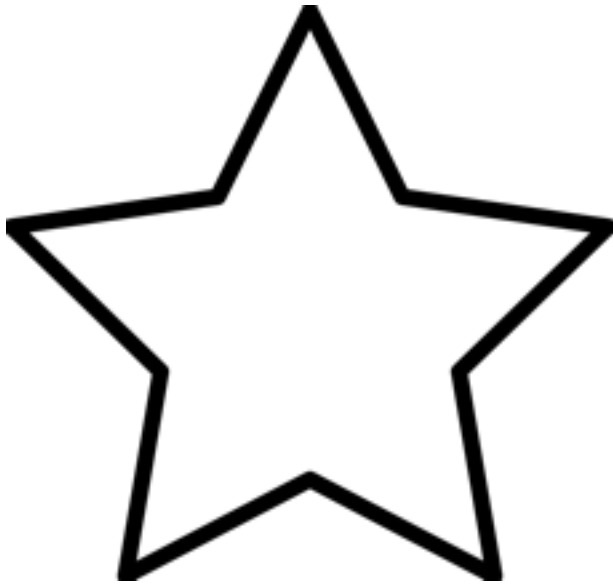
After the class has finished the worksheet and their sodas, head out to the garden.

Tasting Beets - 10 minutes

Out in the garden, point out that the beet tops are frozen, black, and dead. Explain that when the beet tops died, the plant transferred all the sugars and nutrients that were in the leaves down into the roots of the plant. The root of the beet is what we eat! This means that beets in the winter are so full of natural sugars, you can eat them raw just like carrots!

Pick beets and cut them into thin disks. Quarter the disks and have students eat the quarters down to the skin (the skin isn't sweet, don't eat that part). Yum!

WORKSHEETS



Name _____

Date _____

Write 3 sentences describing what you saw out in the garden:

What is nutrition?

What are nutrients?

Name three nutrients:

Can you name three different colored vegetables? Can you guess what *nutrients* they contain?

Name _____

Date _____

What nutrient is found in pumpkin?

Can you name four other foods where we could find Vitamin A?

Have you ever tried plain pumpkin before?

What did you think of the pumpkin sauce? Describe it using complete sentences:

A pumpkin
starts out as a
seed

It grows into a
seedling

The seedling
becomes a
vine

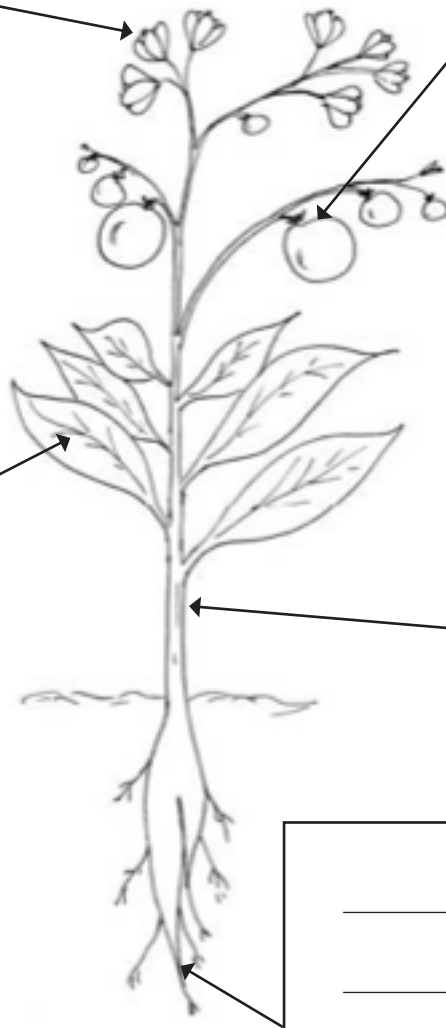
On the vine,
you'll see some
flowers

The flower
becomes a
green pumpkin

The green
pumpkin
matures into an
orange pumpkin

Name _____

Date _____



What nutrients are found in kale?

What did you think of the kale salad? Describe it using complete sentences:

Name _____

Date _____

What are calories?

How many servings were in the can of soda?

The bottle of sports drink?

How many calories were in each drink?

Soda	Sports Drink	Juice

Were there any vitamins in any of the drinks?

Soda	Sports Drink	Juice

How much sugar was in each drink?

Soda	Sports Drink	Juice

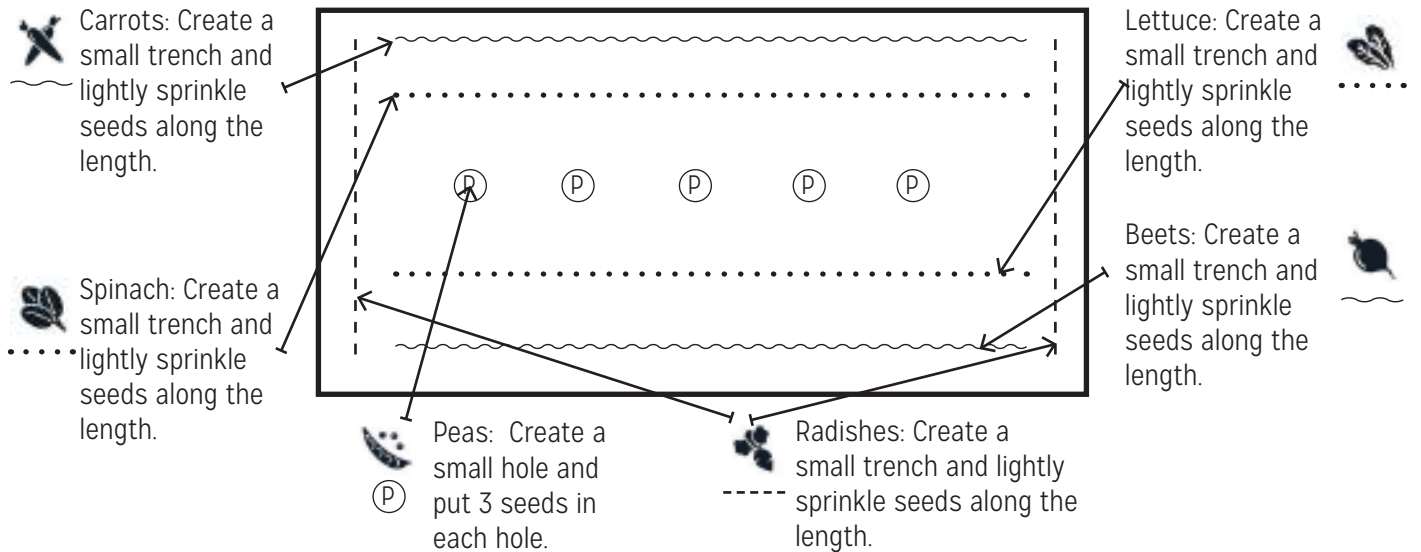
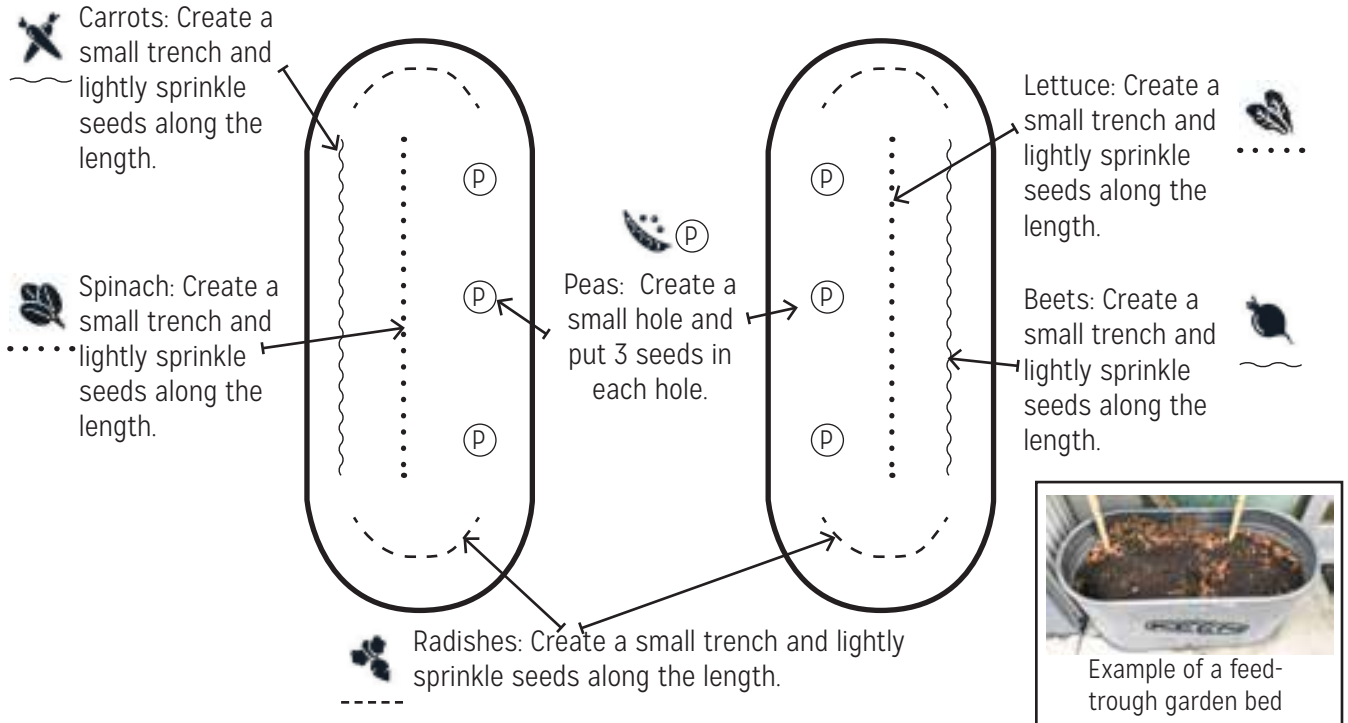
We will use natural instead of artificial sweetener in our soda. What part of the nutrition label do you think this will affect?

What did you think of the beets? Describe them using complete sentences:

PLANTING PLANS

Spring Planting Plan

Wasatch Community Gardens recommends feed-trough garden beds or raised boxes for school gardens. They are easy to maintain, hard to accidentally walk into, and have the potential to be relocated if needed. These planting plans are for either two 48-inch feed-trough beds or one 4'x 8' raised bed. Be sure to check the seed packets for detailed planting instructions (seed depth, etc). All these plants can be planted as soon as the soil is workable. For other questions, visit www.wasatchgardens.org



Summer Planting Plan

Wasatch Community Gardens recommends feed-trough garden beds or raised boxes for school gardens. They are easy to maintain, hard to accidentally walk into, and have the potential to be relocated if needed. These planting plans are for either two 48-inch feed-trough beds or one 4' x 8' raised bed. Be sure to check the seed packets for detailed planting instructions (seed depth, etc). For other questions, visit www.wasatchgardens.org

