Beans, Bush:
Plant: 4/21-6/1 (start at last frost date, 2-3 week successions)
Harvest: 6/15-8/15

Bush beans are one of the first warm weather crops to start producing in the garden. There is often a lull in production between cool season and warm season crops, and bush beans are a good crop to get you through until tomatoes and cucumbers start producing. Bush beans are a determinate crop, meaning that the plant produces only one round of beans and the harvest only lasts two weeks or so (unlike pole beans). Succession planting every 2-3 weeks will guarantee an extended harvest. Bush beans can be planted again in June for September harvest, if space in the garden permits.

We have had trouble with beans here in Kansas due to hot summers, which can burn the blossom, leaving beautiful plants with no fruit. Bean beetles can be problematic too. Try using a hot pepper spray to deter them from eating the foliage. Getting seeds planted early can help with both these problems, but don't plant seed too early, as poor germination can result. Provider is a good variety to sow early, as it germinates better in cooler conditions. Also, make sure that the soil is allowed to dry in between watering so that the seeds do not rot.

Beets:
Plant: 3/15-4/15 (start 3-4 weeks before last frost, 2-3 week successions)
For fall crop sow 8/1-8/15
Harvest: 5/5-7/15 & 9/25-10/20

Since beets probably won't make it into the cafeteria it is important to make sure that there is a market for this crop. Beets have become increasingly popular at farmers markets, but you may have to educate the consumer as to how to prepare beets.

As with any root crop, kids love to grow, and especially harvest, beets. Getting kids (and adults) to eat their beets may be a different story. Try growing Chioggia Beets, also known as Candy Cane Beets for their beautiful pink and white bulls-eye pattern. These beets have less on an "earthy" flavor, and are actually quite sweet. Many people who dislike beets might enjoy Chioggias. Another fun variety is Golden Beet. For red varieties try the tried and true Ace, Detroit Dark Red, and Bull's Blood.

Beet 'seeds' are actually the dried fruit which contain several seeds. This makes thinning the beets important. The initial 'thinnings' can be eaten as a micro-green on top of salads. Make sure to space the beets 1-3" apart, depending on how big you want the final harvest size to be. If spaced at 1" baby beets can be harvested, leaving the remaining beets 2-3", and extending the harvest window.

Carrots:
Plant: 3/15-4/1 & 8/1-8/15
Harvest: 6/15-7/1 & 10/15-11/1

Carrots are a wonderful crop to introduce to the cafeteria. It is not hard to get kids to eat carrots, especially if they are small and sweet, and even have the tops still on!

For the best tasting carrots it is essential that the crop be exposed to below freezing temperatures. This increases the sugar content in carrots significantly. This makes summer planting for fall harvest ideal. Timing it out so that the carrots are harvested a few weeks after the first frost is important. This means a mid to late August sowing. A good variety for spring is Nelson, which grows quickly and stays sweet.

Be sure to keep the carrot beds consistently moist until germination occurs, and well watered after that. Competition with weeds is a concern, so be sure to stay on top of weeding. Thinning is very time consuming, but important. When thinning and weeding make sure that none of the root-tops are exposed, as they will turn the carrots green and bitter.

Carrots prefer sandy soil, making it hard for those of us with clay soil. Work the soil deeply to get good 'tilth', as carrots will turn out twisted and contorted otherwise, although it is very fun for kids to dig up carrots that are entwined with each other, with multiple tap roots heading in different directions. This is a good lesson for someone who has only ever seen perfectly straight, long carrots from the supermarket. On the other hand the cafeteria staff probably appreciate uniformity while chopping produce. Look for varieties that that grow well in heavy soils (Danvers 1/2-long & Hercules).

Considering all of these requirements carrots are not the easiest crop to grow, but they are well worth the effort.

Cucumbers:
Plant: 5/1-6/1
Harvest: 7/1-10/15

Cucumbers are a great addition to the school cafeteria salad bar, available when students return from summer vacation.

Growing cucumbers can offer some challenges that aren't difficult to overcome. Trellising keeps the fruit elevated, making it much easier to find and harvest. Cucumbers need to be harvested daily (or every other day) to avoid oversized fruit, which are less palatable and decreases production of future fruit.

Cucumber plants decrease in production after three or four weeks and also succumb to pest (cucumber beetle) and disease (bacterial wilt and powdery mildew). Row cover and succession planting can ensure a long harvest window. Put row cover over young seedlings and remove once they flower. When the row cover is removed plant more seed and put the row cover over them. Three successions of cucumbers should get you through the season.

Cucumber foliage wilts in extreme heat. The instinct is to water every time this happens. Although cucumbers are a thirsty crop, inconsistent watering causes deformed fruit that are bitter. Have a watering schedule and stick to it. 2 inches of water a week during the summer is sufficient.

In regions where summers get hot it is wise to search out varieties that are bitter-free and burpless, as they taste better throughout the summer. These varieties are also more mild tasting, have thinner skins, and generally are more appealing to younger tastes.

Greens-Kale,Collards, Swiss Chard:
Plant: 3/21-4/21
Harvest: 5/15-7/15

Greens such as kale, collards, and Swiss chard are gaining popularity amongst veggie lovers, but probably won't make it into the cafeteria. If growing these, make sure you have an outlet for them, as they need to be harvested weekly and are quite productive. These greens are primarily for cooking and many people are unfamiliar with preparation. Hand out recipes to potential customers to help sell these crops. Touting the nutritional information helps too.

These hardy greens can be planted 3-4 weeks before the last frost, either by direct sowing or transplanting. In cooler regions they can be harvested throughout the growing season, but they usually succumb to the heat of the Kansas summer. Collards are the most cold and heat tolerant.

Cabbage loopers flock to kale and collards and control is as simple as inspecting plants weekly and smooshing any guilty culprits, always a good activity for the non-squeamish children.

Garlic:
Plant: 10/15-11/15
Harvest: 7/15-8/1 (stores well)

Garlic is a fun and easy crop to grow. It is planted in the fall and harvested in the summer. 'Seed' can be easily saved, making it a good educational component.

If you plan to sell at a market, garlic is an important crop that most people are familiar with and use regularly. If there is a market for garlic it can a very profitable crop. Bulbs must be harvested in a timely manner, otherwise the heads will begin to open up and the taste will become too strong.

Lettuce:
Plant: 3/15-4/21
Harvest: 4/21-7/1

Lettuce is the perfect crop for the school garden. It is planted and harvested in the spring (before school gets out) and again in the fall (in time for the new school year). Lettuce is easy to grow, takes up little space, and only takes 50 days to grow from seed. It takes just 30 days if you are growing baby lettuce for salad mix, also known as 'cut and come again' because you can get multiple harvests from the same batch of plants. Lettuce has few pests and is less prone to the diseases that are common in the diversified garden.

What makes lettuce the perfect school garden crop is that the cafeteria has a salad bar every day of the school week. Many kids pass up the salad bar daily, but if they grow the lettuce on that salad bar they will likely fill their plates with the tasty greens. Signage indicating which vegetables are grown in the garden is an important educational connection to make, and helps encourage students to try new vegetables they may not normally choose.

Okra:
Plant: 5/7-6/1
Harvest: 7/7-10/1

Okra thrives in the heat. When every other summer vegetable looks stressed from the heat, okra keeps on producing, and providing a good morale boost. The plants get huge, filling with beautiful flowers that turn into bountiful amounts of okra. Keeping up with the harvest is the difficult part. Okra needs to be harvested daily (or every other day) when the fruits are still small (3-4" long). Larger pods are tough and slow down production of new okra. If people will not be in the garden daily or over the weekend okra may not be a good choice. Harvesting can be difficult too. The plants get up to 6 feet tall (sometimes taller) making it difficult for children to reach. The pods are difficult to see amongst the foliage, but the red varieties of okra make it much easier. The plants can be prickly, so search out a 'spineless' variety (Clemson Spineless).

Onions:
Plant: 3/21-4/21
Harvest: 7/15-9/15 (stores well)

Onions are a great market crop because they store well and are a kitchen staple. Onions are easy to grow and require little water.

'Curing' onions takes some know-how. Onions can be harvesting as green onions or fresh onions before harvesting for storage. When the onions are ready for harvest the foliage (green tops) will die back and flop over. Wait another 2 weeks after this happens. On a sunny day pull the onions and lay them in the sun. Leave them for a day or two. Bring the onions out of the sun and spread them out somewhere that is warm, with good air circulation, and out of direct sunlight. It will take a few weeks for the onions to dry, but they will store for months.

Peas:
Plant: 3/7-4/1
Harvest: 5/15-6/15

Garden fresh peas are a real treat, be sure to choose the edible pod variety. The challenge is growing enough peas for them to make it out of the garden and into the cafeteria. Kids will eat these like candy, right off the vine.

Growing peas in Kansas can be challenging due to the short spring. Peas take a while to mature, but don't do well in the heat. Make sure to plant peas in early spring, as soon as the soil can be worked. This should be the first crop to be planted in the spring.

Planting the seed is a fun activity for kids because the seed is so large it is easy to regulate how many plants will pop up few days later. And if the stand is too thick, the young pea greens are a delicacy in salads.

Trellising is a must for peas. Make sure the trellis is erected before seeds are put in the ground.

Peppers:
Plant: 5/7-6/1
Harvest: 7/15-10/15

Bell peppers go well in the cafeteria and are a must for any market stand. Green bell peppers are ready earlier in the season and are simply unripe red bell peppers (or yellow, or orange). Pick a small percentage of the green bells for your summer market and the rest will ripen in time for the new school year. The sweetness of the red bell peppers is bound to win the kids over. This is a good crop to sample in the classroom.

Potatoes:
Plant: 3/15-4/15
Harvest: 6/15-7/15 (stores well)

Potatoes are a must for any school garden. If getting produce into the cafeteria is your main goal you may have a hard time competing with the convenience of the frozen French fries. This would be a great crop to have a cooking demonstration with. They are such a versatile crop to cook with and

whether you bake, mash, hash, fry, roast, or scallop potatoes, most kids will enjoy them.

Like onions, potatoes are a staple and a must for any market. Both crops may not be the most profitable crop due to their dirt-cheap counterparts in the grocery store, but people demand them and will come back for more when they discover their superior quality. Also in their favor is the great keeping quality of potatoes. Long after the growing season is over it is still possible to sell homegrown potatoes.

It is not the final product that makes potatoes such a hot item in the school garden. It is that they are immensely fun to harvest. Getting kids on their hands and knees digging through the dirt in search of these gold nuggets is one of the annual highlights of any school garden. Washing the dirt off is also a favorite activity. Make sure to have your camera ready!

Radish:
Plant: 3/15-5/1 & 8/15-10/1
Harvest: 4/15-6/1 & 9/15-11/1

If you want instant gratification in the garden the radish is the closest thing you'll find. From the time you put the seed in the ground to the time you harvest is about a month. Radishes are very easy to grow, don't take much space, and are harvested early enough to be followed by a summer crop, allowing you to double the production in that space.

Like lettuce, radishes are the perfect crop for the cafeteria. They are ready before school gets out for summer, and they will be there again early the next school year. Radishes aren't something you would think of children enjoying much, but you'd be surprised how many love the taste of them when they are fresh out of the garden, sweet and mild, especially when they were the ones to grow them.

Make sure to thin the radishes to give them 2", as less space inhibits rapid growth and causes them to 'bolt'. Bolting is when a plant elongates its stem several feet into the air, flowers, and goes to seed. This is a great lesson in the life cycle of plants and it happens so quickly with radishes that they are the perfect crop to exemplify this.

Plant multiple successions of radishes to ensure an extended harvest period.

Spinach:
Plant: 3/15-4/15 & 8/15-9/15
Harvest: 5/1-6/15 & 10/1-

If you want fresh greens well into the winter spinach is the most cold-hardy crop you'll find. With a little protection you can harvest spinach throughout the winter and into the next growing season. Even without any protection the plants will survive the winter and start producing early in the spring, before any other crops are available.

The cold sweetens spinach up and kids will be astounded by the difference between fresh spinach and the spinach from the freezer (or the can, yuk!)

Squash, Summer:
Plant: 5/7-6/1
Harvest: 7/1-8/21

Summer squash is another one of the quintessential summer crops. Although it may not have a place in the cafeteria, market goers expect to see squash.

But squash isn't very easy to grow without spraying for squash bugs and squash vine borers. You may drive yourself crazy trying to outsmart them or squishing them by hand, as they multiply more quickly than you can destroy them. They are not as fun to squish as other bugs and even the bravest kids may be disgusted.

If you must have summer squash in the garden then plant them early, before the bugs arrive (some say plant them late after all the bugs have found a home in your neighbor's garden). Row cover is very helpful, but be sure to remove the cover when the plants start to flowers to ensure pollination. You will get a few weeks of harvest before the squash bugs get out of control. Succession planting with row cover will extend the harvest. And when the bug population gets too out of control, remove the plants and clean up the area well.

Squash, Winter:
Plant: 5/15-6/15
Harvest: 8/7-10/15 (stores well)

Winter squash are a good market vegetable because they aren't very perishable and many varieties will store all winter long.

For gardens with limited space winter squash is not a good choice, as the vines sprawl 10-12 feet. Even with ample space there are challenges to growing winter squash. As with summer squash, squash vine borers and squash bugs are problematic. The sprawling nature of winter squash helps outgrow these pests and some varieties are less prone to attack. Butternut squash are one of these varieties and are also one of the tastiest and easiest to use in the kitchen.

Although winter squash are considered a fall crop it is wise to plant them early and harvest them early before bug and sun damage is done. Store the squash at 50-60 degrees.

Sweet Potatoes:
Plant: 5/15-6/15
Harvest: 9/7-10/15 (stores well)

Like potatoes, sweet potatoes are one of the most fun crops to grow and harvest. Unlike potatoes they thrive in the Kansas heat, with luscious vines sprawling up to six feet in each direction. The foliage is gorgeous, a visual highlight of the garden. The greens are also edible, although they might be a hard sell. Sweet potatoes don't need any irrigation once they are established, and have few pests.

Sweet potatoes are planted from 'slips', which are green shoots grown from mature sweet potatoes. Contact your local garden center to see if they sell slips. Otherwise they can be ordered through the mail. K-State offers slips at a fraction of the price, but in larger quantities then may be practical for a school garden. See if other gardeners in your area or at school are willing to put together an order and split the cost.

Sweet potatoes are harvested in the fall (before first frost) and cured to convert the starches to sugar. To cure, store them at 80-85 degrees, with 80-90% humidity, for 10 days. Storing the roots at 55-60 degrees for another 6-8 weeks further develops the sugars, although they are quite tasty after the initial curing period.

Sample Garden Growing Calendar from West Junior High in Lawrence
Courtesy of the Community Mercantile

Tomatoes:
Plant: 5/7-6/1
Harvest: 7/15-10/15

If there were only space for one crop in the garden tomatoes would be the chosen one. More than any other crop, a garden fresh tomato is far superior to tomatoes shipped from far off places

Tomatoes are a common item in the cafeteria and cherry tomatoes will fly from the salad bar. Many kids believe they dislike tomatoes until they taste a garden fresh one, so doing a taste test can be a fun event.

Growing tomatoes can offer some challenges, but in a good year you will be rewarded with a bountiful harvest that is hard to keep up with. Tomatoes need to be staked or trellised and there are many different ways to go about this. Store-bought tomato cages are effective, but take up a lot of space in storage over the winter. Collapsible tomato cages solve the problem of winter storage, but they are quite costly. The 'stake and weave' method of trellising makes use of t-posts and twine for a low cost and easy to store solution.

Choosing which varieties to grow in the garden is the most difficult decision: determinate or indeterminate? heirloom or hybrid? cherry or slicer? For school gardens indeterminate varieties are best because they continue to produce until frost, while determinate varieties set all their fruit at once. As for the decision to go with heirlooms or hybrids; why not plant a few of each. Heirloom tomatoes are famous for their unique shapes and colors, and most importantly, their taste. It is hard to compete with Cherokee Purple when it comes to taste. Not that hybrids don't have incredible flavor too. Pink Beauty is a variety that won over a student gardener who didn't like any other variety grown in our garden. Cherry tomatoes have their place in every school garden too. We refer to Sungold cherry tomatoes as the "gateway vegetable". They are like candy and burst with a perfect balance of sugar and acidity, tasting like a tangerine.

There are numerous diseases that are of concern when growing tomatoes. Crop rotation is an important way to avoid these diseases. Ideally, tomatoes would not be planted in the same place for three years. To further complicate things, they should not be planted where another crop from the solanum family (potato, pepper, eggplant) has been in the past three years. For a small garden space this may be impossible. At the first sign of disease or infestation (usually discolored foliage or dead leaves) contact your local extension agent for help with

diagnosing and treating your tomatoes before the disease or pests get ahead of you. If caught early enough disease can be dealt with using fairly benign methods like soapy water spraying.

Tomato horn worms are tomatoes worst pest. They can devour a whole plant in a few days. The best pest management technique for a small plot is to scan daily for damage. Where the tops have been munched down there is usually a big, fat hornworm munching away. A few tricks for spotting these camouflaged culprits is to check early in the morning, as they tend to migrate to the tops of the plant overnight and are much easier to spot. Also, it is easier to see their droppings than it is to see them and they are not far from their droppings. The good news about hornworms is that they can be totally controlled by search and destroy techniques. You might just be surprised at some of the students who just LOVE this task!

Watermelons & Melons:
Plant: 5/1-5/21
Harvest: 7/15-10/1

Melons are the easiest fruit to grow in the garden as they are an annual, meaning they are planted and harvested in the same season, and must be replanted every year. Getting children to eat their veggies is way more challenging than getting them to eat their fruit. A garden fresh melon will attract flocks of kids and they're a must for any event highlighting the garden. They have a place in any cafeteria or market stand as well.

Melons are a vining crop and take up a lot of space in the garden. Melons planted in beds should be spaced 2' apart in rows 6' apart. Many gardeners plant melons in mounds (elevated hills of soil) spaced 4 to 6' apart, with 2-3 plants per mound.

Telling when a melon is ripe is an art. Every variety has different criteria. Many cantaloupes 'slip' from the vine, making it easy. Others aren't as easy and subtle hints, such as color and smell, must be relied upon. For watermelons there are three hints: 1) the tendril adjacent to the fruit is no longer green, 2) where the fruit sits on the ground there is a spot that has turned to a vibrant yellow, 3) the thump test – when the melon responds to thumping with a dull thud sound and vibrates the fruit, indicating ripeness, as opposed to a higher pitch that results from tapping on something solid. You should hear "punk", rather than "pink" or "pank". Fun for students and another teachable moment!