Garden to Table: A Head Start Adventure

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Introduction

Every summer I work solo in my position as a chef supervisor for the Northland Head Start. Classes are reduced from ten rooms and a maximum of 170 students to two rooms and a maximum of 34 students. Head Start is a program that prepares children ranging from infant to pre-school age to enter school, and specifically serves low-income families. The Northland Head Start is host to children that are three to five years old.

Upon returning from several months of a shut-down in March 2020, due to Covid, classes were able to safely resume in July of 2020. Class sizes were limited, and social distancing was enforced. I began to brainstorm how I could help brighten the days of these kids who were experiencing a whole new norm. Additionally, I saw the need for healthy eating education. These were the days of produce boxes being placed into trunks as the world tried to figure out how to help mass amounts of people who were unemployed or struggling to feed their families.

I remembered a small bag-style garden on folding legs that the teachers had tried to use a few years before. I dug it out of storage and utilized my neighborhood social media platform to ask for donations of soil. I set it up in the playground and used seeds I had on hand as well as those donated from fellow staff members. We were quickly rewarded with lettuce and basil that were used in school lunches, and later a few rainbow carrots that were passed around for exploration.

I witnessed the pure eagerness of the children seeing the tiny plants emerge from the soil and then trying the end product. That is when I knew I had to do something bigger. I began to research raised garden beds that would be suitable for our playground, along with a source for soil and water.

My goal for this project was to see if I could increase vegetable consumption in the classroom during meals. I also wanted to increase awareness of the garden system and to see if it could serve as a learning medium.

Implementation of Project

The plan for this project was to grow vegetables in a raised garden bed that the children had daily access to. The hope was that this would entice them to try the food group that is the hardest to convince kids to eat, combining interactive learning with healthy eating. Upon starting my research into the types of raised beds, I used my own knowledge of the interlocking style of beds made of rot resistant cedar. I sourced soil through a local company with an emphasis on sustainability and organics, as well as a local nursery to buy seeds and plants nearby. Last, I found a source of water. It was time to get building!

On a hot Saturday in the beginning of June, my husband and I arrived at the school to an early dirt delivery. We had packed the garden bed, a measuring tape, shovels, and any other tools we thought we might need, along with the excitement of beginning this project. While I assembled the panels needed to make up the whole bed, my husband measured out the area and marked them off with orange traffic cones found inside the playground. Soon we had the bed built and we were only left to shovel dirt in. We used a borrowed wheelbarrow and packed in a little less than two cubic feet.

One important aspect of this project was the necessity for the kids to see what was being grown from seed to plate. My future goal was to have each group grow plants in their classroom in early spring that could go outside when the time came. Fortunately, the teachers of each room had been doing this with some donated seeds each year. They either sent the small seedlings home or they ended up withering before being planted with nowhere to go, so the garden bed was the perfect opportunity.

I was lucky that between both rooms, they had grown two cucumber seedlings, a yellow squash, and three lima bean plants. That following Monday, I arranged for the kids to carry out their little plants that they had lovingly watched grow each day inside. The size and height of the bed is perfect for everyone to group around with ample visibility. I explained what we were planting and where, making sure to talk about how deep to dig and how much space to keep in between the plants. The children were proud to see the plants go into the ground as we labeled each one, to keep a close eye on them.

I purchased additional seeds and starter plants from a local nursery to get our bed off to a good start. Before planting, I called and spoke to a professional gardener about the types of plants that would grow well in our region and the timeline for each one. I bought two different types of tomatoes and a green bell pepper seedling, as well as herb seeds of basil and dill. My goal was not only to provide a garden for the two rooms that we serve each summer, but to also sustain it well into fall with plants that would thrive in our region.

The next step in keeping our new plants alive was to provide water. My initial plan was to purchase a rain barrel with a satellite-type attachment to catch the water. Before committing to this idea, I used the existing water spigot in the wall of the building. Being that our bed was close to 200 feet from the water source, I used two hoses to connect and carry the water from the building to the garden. Before purchasing a hose, I used recycled milk jugs from the kitchen to hand water the plants in the early morning before the heat would set in.

Before we were able to see any produce grow, I wanted to teach the children about what to look out for as each plant began to flower and produce tiny versions of themselves. As the chef of our facility, I have access to ordering and was able to obtain bell peppers, cucumbers, tomatoes, and yellow squash. I

organized a class that would take place during the planned outside time and would not interfere with their normal schedules. I prepared each vegetable by cutting one in half while leaving another one whole. The teachers helped collaborate by bringing paper and crayons outside as part of the learning process and as a final way to reinforce what they had seen.

I met the classes outside at the beginning of August where I began by asking them if they knew what each vegetable was. We went over where we could find the "grown" version in the garden, but we had to wait until each one got to the appropriate size before we could pick it. At this time, the cherry tomato was producing a small amount of fruit, while the other plants had bright flowers on them. I asked the kids if they knew what insect helped the flowers become a vegetable and they were quick to exclaim, "bees!" I introduced them to the concept of static electricity, much like how the pollen from the flowers sticks to the bees' bodies, by using the example of a balloon that might stick to our hair after being rubbed by it. We talked about the different insects we might find, as well the worms that lived deep in the soil to help make the plants healthy.

We passed around the whole vegetables before passing around its halved counterpart. We talked about the seeds inside and how each of these seeds could grow an entire plant, like what we had in our garden. Having this hands-on approach to seeing what each plant would grow into was an important element to get the kids excited about the vegetables. The group then sat at the outdoor tables and drew what they had seen. I was even gifted one drawing.

Using the purchased yellow squash, I roasted it for lunch that day to connect the taste to what they had seen. I also cut up cucumbers for a snack and served a combination of purchased and grown cherry tomatoes with a salad for another days' lunch. I felt this combination of active and hands-on participation, before tasting the food, would help engage the kids in trying something they might otherwise not be interested in.

Watering the garden was a challenge to involve the children with, as their outside time often coincided with a time of day that was not ideal for the garden. I noticed that a few children would come before 8:00 a.m. and I was able to have them help in watering by bringing them out to hold the hose. We talked about why we needed to avoid watering the leaves so they would not burn later in the hot sun.

About a month after planting, I purchased some additional seeds of beets, carrots, green beans, and kale, as well as two sweet potato plants. Because of cooler weather, I was able to go out during the planned outside time and engage the kids in what I was doing. As the summer drew to an end, we began to see cooler temperatures and an ample amount of rain. Not even two and half months after planting, we began to see an abundance of cucumbers and yellow squash growing from our garden. In mid-August, we reached a milestone, as enough cucumbers were grown to feed every child for a snack. Before serving any of the food we had grown, I included a note on each dish that told them where it came from.

Analysis of Project

While this project was highly successful and well received by all involved, it did not come without challenges and setbacks. When I began planning how to fill the garden bed, I had used previous knowledge from raised beds at my own home. I had done some research and saw that lining the bottom with cardboard could be a beneficial filler and way to start. I began to collect boxes from deliveries to our kitchen and I had done this method with my own bed but, quickly after, discovered issues with it. In my conversation with the garden professional from our local nursery, I was informed that lining a bed with cardboard could trap the water in the bed and cause an issue with drainage, inhibiting the growth of the plants. I quickly adjusted the plan and was relieved for the knowledge I had gained to start our school garden off right.

The biggest hurdle I had to overcome was access to water. Initially, I planned to install a rain barrel next to the garden. Thinking this would be the best option in the long run, I held off until I could do more research on what type and how it would work. The building came equipped with a water valve that was in the playground, but nearly 200 feet away from the garden. I purchased a hose but quickly found I was short about 50 feet. I attached my longer hose to a borrowed hose reel in the storage shed and was able to run water a little easier.

Before purchasing a hose, I used recycled one gallon milk jugs in the short-term. While utilizing this method I noticed blossom-end-rot on several cherry tomatoes that had developed early. Upon researching the reason, I found that shallow, frequent watering can cause this issue. This led to my purchase of an actual hose before implementing the rain barrel. As I began to research the use of a rain barrel, I realized that the amount of water needed was so large, that it would not be feasible as the primary watering method. Because of the height of the bed, gaining pressure for the needed water flow would cause a safety hazard. I quickly realized that a rain barrel would be a good option for watering during outdoor play time as a learning method, but not as a primary source. I then purchased a large hose reel and adequate hoses, which made watering much easier.

Shortly after this purchase, the water valve on the building broke. I contacted our building manager, and he was able to organize a complete re-build of the valve. In the meantime, however, I was back to watering with the jugs. I realized the importance of proximity to water and what it can mean to the success of your garden. Fortunately, after a dry spell, rain was abundant and hand-watering was a task far and few between as fall was approaching.

As with any garden, I learned about different pests and diseases that could plague our vegetables. Towards the end of the growing season, I noticed powdery mildew on the leaves of our yellow squash as well as the blossom-end-rot that I caught early on and was able to correct. Black worms were spotted near the tomatoes and the lima beans were victim to a hole-causing insect. These natural occurrences all led to research about the cause and ways to prevent them in the future growing seasons. To cut back on water loss and having to water the garden less frequently, I plan to cover the bed with a layer of straw in the next garden season.

As a group, we explored composting. This raised bed is equipped with a key-hole structure. This is an area within the bed where you do not plant crops, but instead use for material that can be composted. I saved scraps from vegetables used in the kitchen, such as celery, bell peppers, and onions. I taught the

children to mix in the vegetable scraps with the existing dirt and afterwards to water it. This would encourage the breakdown of nutrients into the soil and feed our existing plants.

A big factor in involving the children, was to go outdoors while they were already out there. If they saw me near the garden, they became intrigued and asked what I was doing. I might have been checking on a growing cucumber or planting a new seed. During one outing with new children in the fall class, I asked if one would be willing to help me carry a squash. Soon, other children began to crowd around to see what we were doing. I tasked them with carrying the new harvest to show their teachers. They quickly associated the food that was growing in the garden with the food that was appearing on their plates each day. Before long, they were notifying a teacher when they saw something that appeared to be ready to pick. I would then receive freshly picked vegetables in my kitchen. This was an important discovery that showed the children that they could check on the garden whenever they were outside and knew what to look for when something was ripe.

One important aspect of this project was to encourage more children to try a vegetable they otherwise would not. With everyday access to the garden, they were able to see what was growing and when it was ready. Within a week of picking the produce, I was able to serve the vegetables to the rooms. I gathered feedback the next day from the teachers. Once they were told what they were eating and where it came from, they were eager to try it because they had watched it grow. The excitement to try something new and different is the first step in eating other foods, as it can take multiple tries of eating a certain food to gain a preference for it. One example was using the cherry tomatoes we had grown, in a salad. Because we had grown the tomatoes, the kids were more willing to try the salad than they had been in the past. This, in turn, allows the children to become familiar with fresh vegetables and remember the names of them. This can translate into the home environment where they talk to their families about what they have seen and tried, with the hope of encouraging them to try these items at home.

Now that school is back in session and all the students have returned for the fall, the teachers and I are able to engage the new students in the garden. Fall crops of carrots, beets, radish, peas, and spinach have been planted, with the hope of extending the growing season and involving more children in gardening. Wanting to involve the students in the concept of garden-to-table year-round, I have investigated indoor garden set-ups for each classroom. This would enhance their efforts of growing seeds from plastic cups on the windowsill, to a higher quality vessel with better yield. The next step in involving the children and their families, is to implement take-home garden kits. This allows the children to take what they are learning at school and apply it at home as well. Having a way to incorporate gardening all year, whether from activities through provided resources or actively gardening indoors, will enhance learning and increase the likelihood of healthy eating.

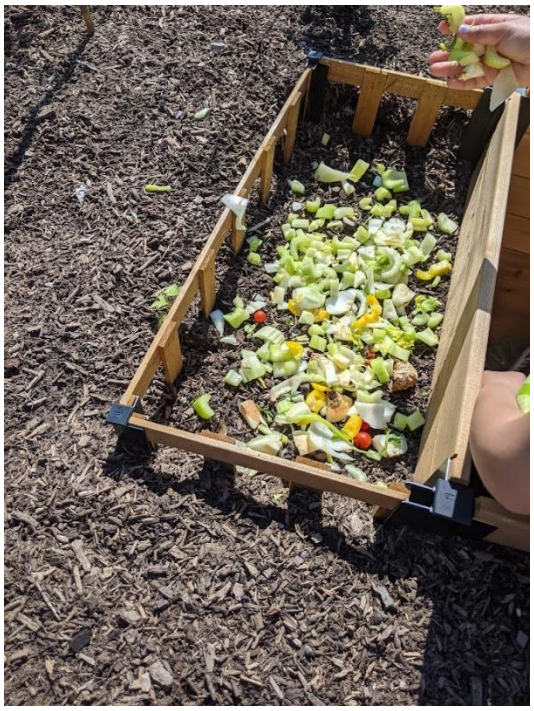
Conclusion

I learned from this project that having an active garden, which is accessible daily to the kids, can enhance memory of different vegetables and improve consumption. After spending the summer with the garden, I surveyed each room on their memory of what was in it. The teachers wrote down what the children remembered seeing and had them draw it as well. The results were consistent with what was in the garden, in addition to what they ate from it. The highest results were cucumber and squash, both of which they tried multiple times in meals. This correlates with the fact that both seeing them grow and eating them, enhances the memory of the types of vegetables. I have attached the survey that I took from each room.

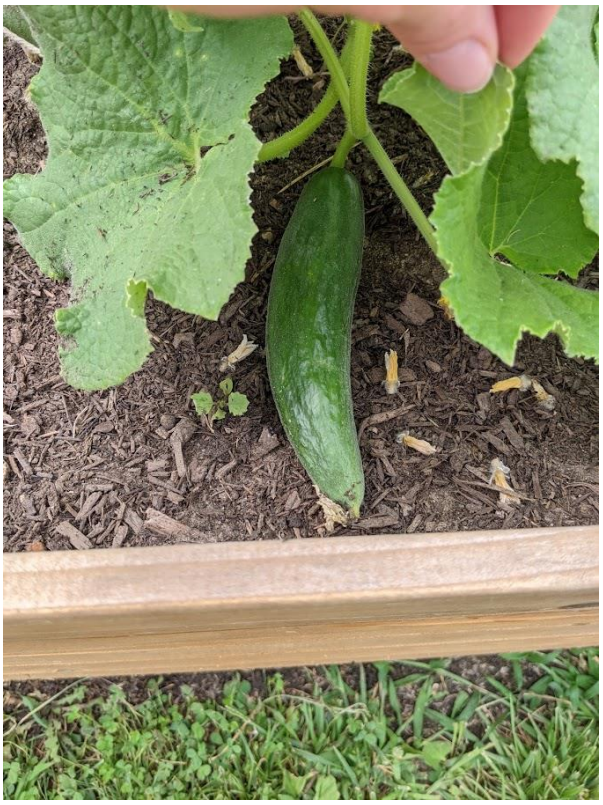
I also gathered feedback from each room after they were told they would be eating one of the vegetables from the garden as a lunch item or for a snack. Teachers reported that the kids were excited because they had watched it grow and were more eager to try it in comparison to having that vegetable offered with no relationship to the garden. Trying a vegetable multiple times can increase the likelihood of eating and enjoying it in the future. From my survey I also gathered what the kids most wanted to grow, which I can then implement into future growing seasons. I have learned that when the children have a sense of ownership and involvement, it increases the learning experience.

Overall, the outcomes of this project aligned well with my goals. I am hopeful that future growing seasons will be more abundant with what we have learned and that we can incorporate more ways to learn about the importance of vegetables, increasing awareness and consumption.

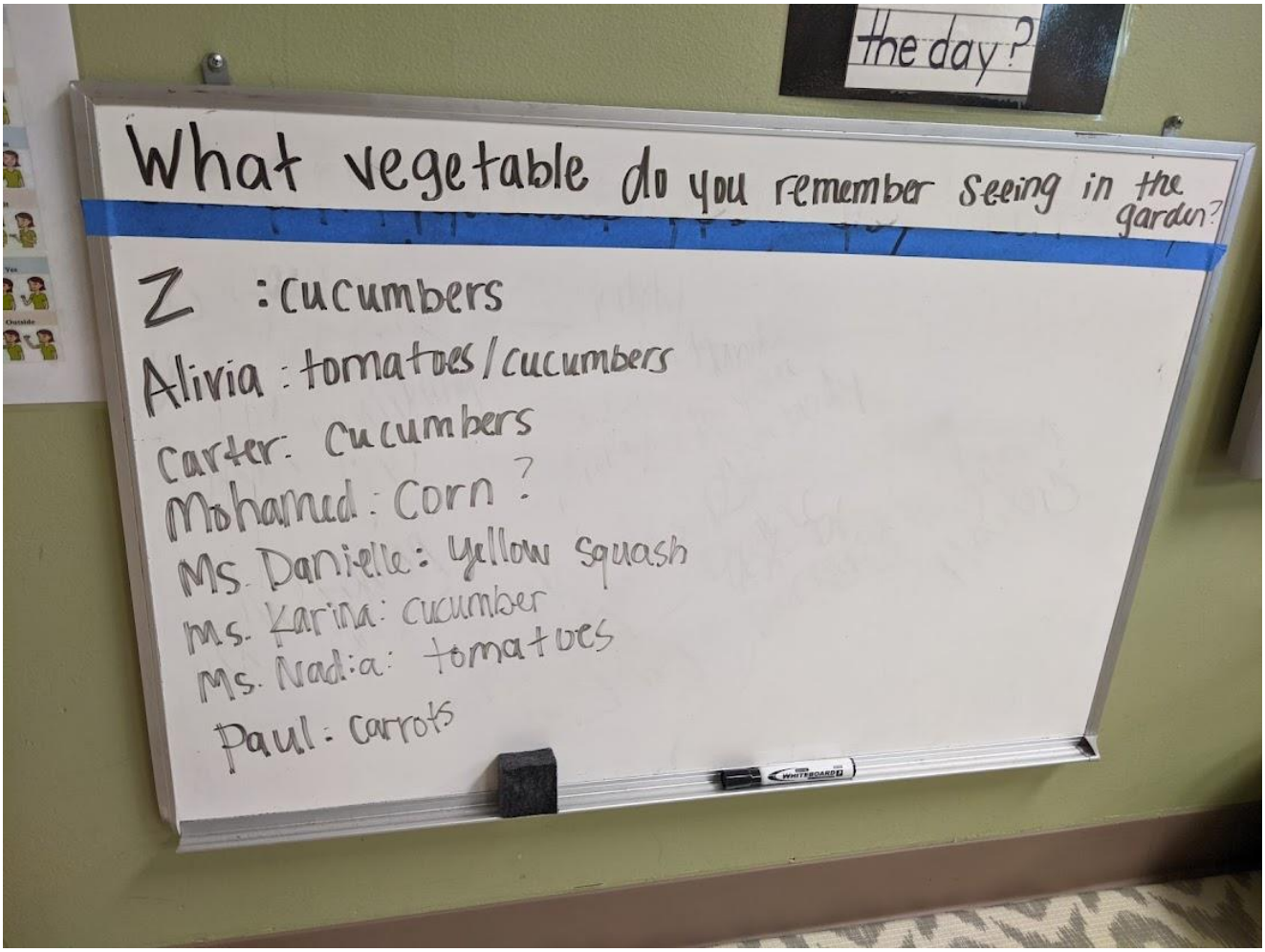
Photos of Project




Cucumber



Classroom Surveys



Class Survey

What vegetable do you remember seeing in the garden?

PT - Tomatoes, cucumbers, strawberries, squash
AL - cucumbers, squash,
KH - no answer
KW - strawberries
LM - no answer
ES - cucumbers
MJ - peppers

What bug visits the garden the most?

PT - butterfly, ladybugs or bees.
AL - bees
KH - no answer
KW - grasshopper
LM - bees
ES - bees
MJ - ants

What do the plants need to grow?

PT - water, dirt, seeds, sun
AL - water dirt, seeds, sun
KH - no answer
KW - water, seeds, dirt
LM - water, dert
ES - water, dirt
MJ - water, dirt

If you could grow one vegetable, what would it be?

PT - strawberries/whipped cream, cucumbers
AL - pepper or cucumber
KH - strawberry or cucumber
KW - strawberry
LM - flower
ES - pepper
MJ - cucumber

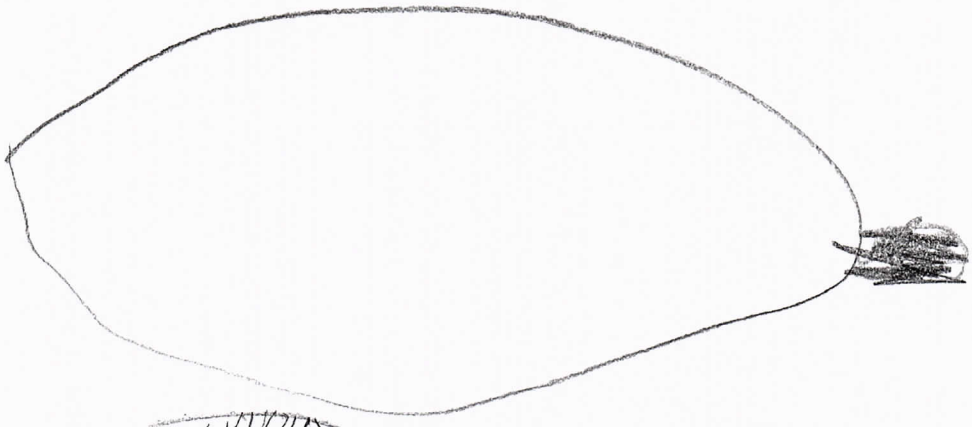
Draw your favorite vegetable

PT. - ✓
AL - ✓
KH -
KW - ✓
LM -
ES - ✓

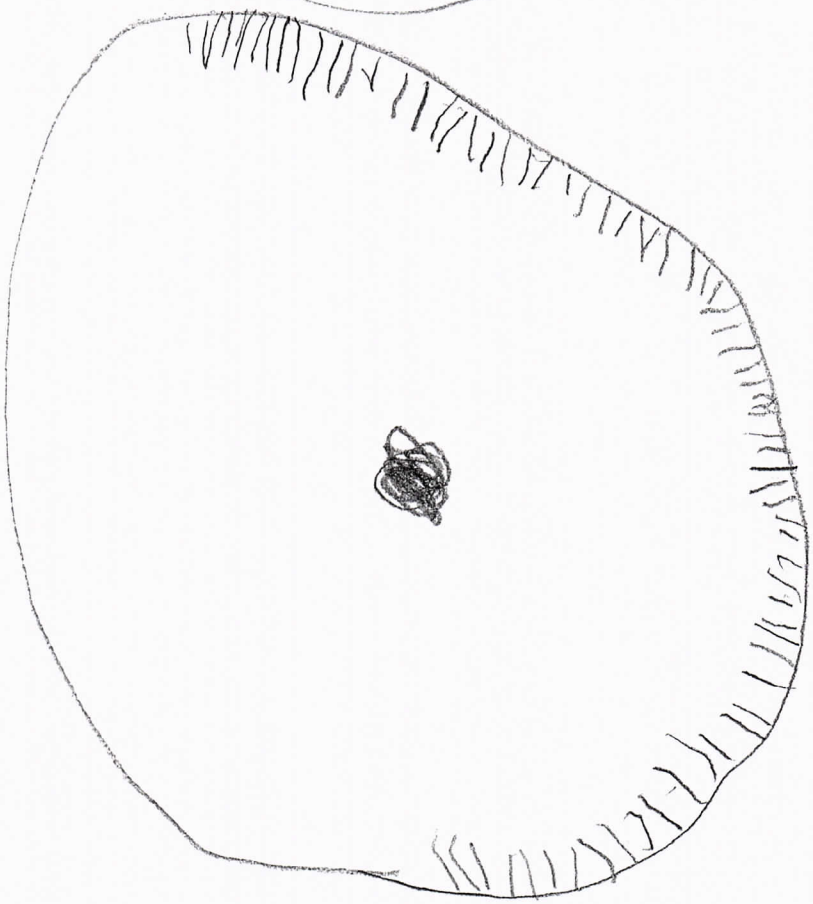
"tomatoes and carrots."

Zaynab
"cucumber"

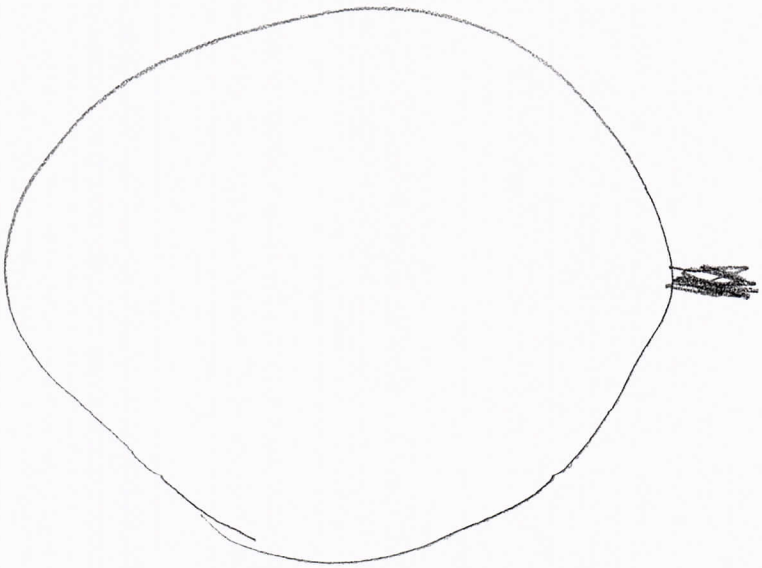
apple



carrot



tomatoe



Paul

9/17/21

Pt