

Basics of Fruits & Vegetables

Presentation (30 Minutes)

Start: Can anyone tell me the difference between a fruit and a vegetable?

A **fruit** develops from a flower and contains seeds. A **vegetable** is technically any other plant part (stem, leaf, root). From a consumer's standpoint fruits are generally sweeter, and are a dessert /snack. Vegetables are frequently main courses & savory.

- Can someone give me an example of a fruit? *Remember, it usually has seeds inside!*
Avocado, bean, cucumber, grain, peppers, pumpkin, squash, sunflower, tomatoes, peas, apples, bananas...
- Can someone give me an example of a vegetable? *Think of leaves, stems and roots!*
Celery (stem), lettuce (leaves), cauliflower/broccoli (buds), beets, carrots potatoes (roots)...

Pick an example food, and ask if someone can explain what it is & why. If no volunteers, pick one yourself and give a good example and a bad example. How does this (example) grow? Where are it's seeds?

Beans as seeds example: Who here has eaten a bean? What is your favorite kind of bean?

Green bean casserole, beans & rice, baked beans, bean tacos....

ALL of those beans you're eating- they're seeds!

To explain: Can anyone tell me some animals that lay eggs? How do the babies come out of the shell? That's just like a Radicle. It's how the plant first starts growing out of it's "shell." When you think of seeds emerging from their shells, think of eggs and baby chicks!

Diagram of bean germination. Does anyone know what other seeds we eat? *Sunflower seeds, peanuts, rice, oats, peas...*

Assess: see if the students have a grasp on it. Ask for a volunteer to explain the difference between a fruit & vegetable again. To provide further explanation ask students, if I had a sandwich and threw the lettuce out my window, and it landed in the yard. Would it grow? How? What if I didn't like that slice of tomato either? What about the cheese?

Eating fruits & Vegetables: Nutrition for kids 13 and under daily requirements: 1-1/2 Cups of BOTH daily. What you can eat to meet this requirement (1/2 C= 1 pack applesauce, 16 grapes). Would you want this daily, or a variety? Rainbow: favorite colors.

<http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/expert-blog/fruit-vegetable-difference/bgp-20056141/>

<https://www.choosemyplate.gov/>

Plant Parts We Eat

A

Color the vegetables. Make them look good enough to eat.

You eat our roots.



beets



carrots



radishes

You eat my stems.



asparagus

You eat our leaves.



cabbage

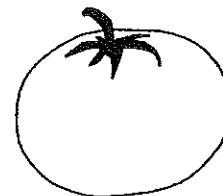


lettuce

You eat our fruit.

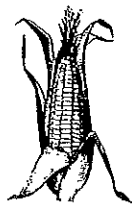


pepper



tomato

You eat our seeds.



corn



peas

You eat my flowers.



cauliflower



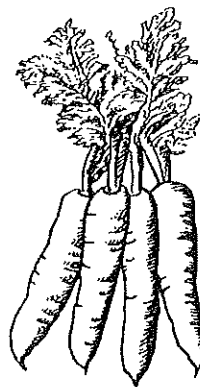
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Plant Parts We Eat

B

Match the plants to the parts we eat.



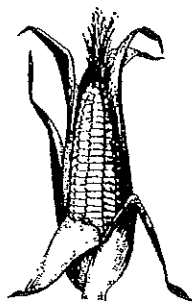
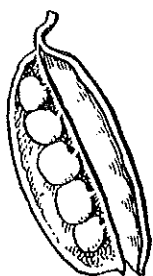
roots

stems

leaves

seeds

flowers



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Hunger in the U.S. (OH) (1.0—1.5 Hour)

Overview

Hunger is not only experienced in other countries. According to Feeding America (2015), 1 in 4 Ohio households experience food insecurity. Briefly explain food insecurity/access to students. Begin activity (below).

National nutrition requirements will be briefly discussed based off USDA's MyPlate program.

Topics / Skills Learned

- Hunger awareness
- Importance of nutrition
- Needs of certain populations (youth, elderly)

Discussion & Questions

- How did this activity make you feel?
- Do you think that everyone wants yummy, healthy food all the time? Why?
- What were some of the reasons families can or can't get food?
- Would you prefer to have the most access, some access or no access?
- Do you know someone who helps share food (teacher, church?)

Materials

Presentation

- Demo Plate & Foods
 - Access Cards

Activity

- Demo Plate & Foods
 - Access Cards
 - Letter writing / Drawing Materials

Snacks (*Optional*)

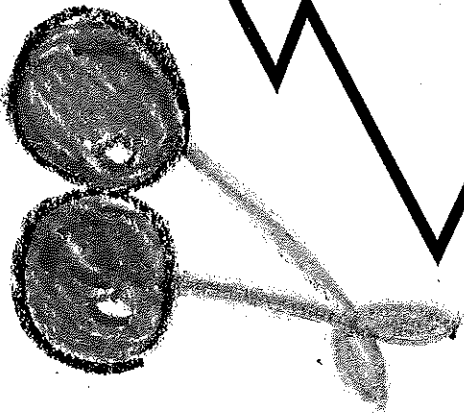
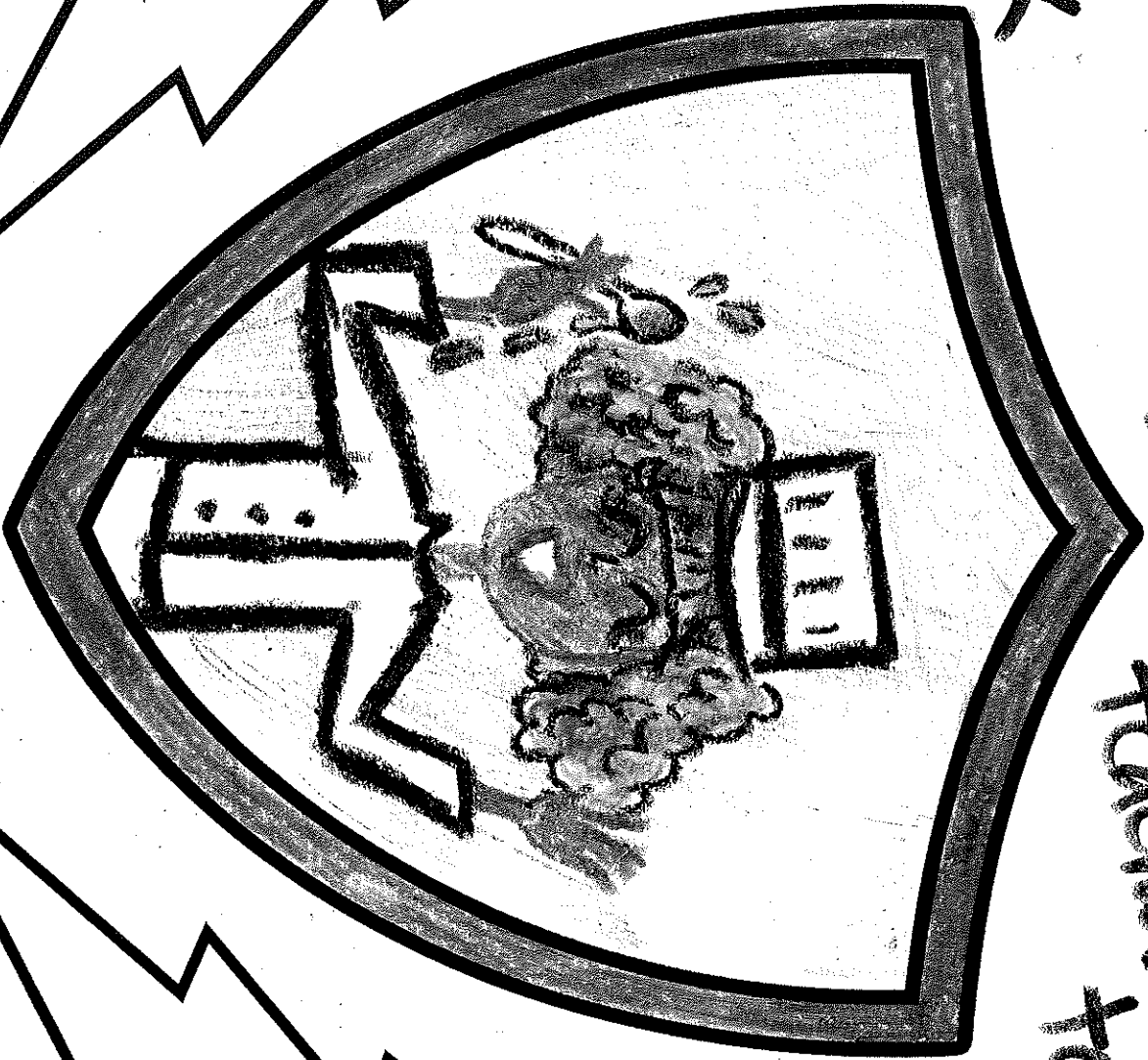
- TBD (Any)
- Plates/bowls
 - Napkins

Activity (30 Minutes)

The majority of this workshop will follow the 'Access Activity' on the Presentation page (next). If time allows have students draw a picture about sharing food, or how important it is that everyone has enough to eat (examples included in binder).

- **Hunger Heroes activity:** with teacher's permission have students write 'Thank You's' to Hunger Heroes in the community.
- **"If I were President" activity:** Ask students how they could help fight hunger if they were President.
- **To consider:** future projects like a **food drive** with this class, creating **backpack notes** to other children their age who may be experiencing hunger.

"MY HUNGER HERO"
IS CHEF BRENDAN
BY ALEX
because she
teaches us how
to cook.



Healthy Eating (1.0 – 1.5 hour)

Overview

National nutrition requirements for children under the age of 13 will be discussed based off USDA's MyPlate.gov program. Students will discuss why food is important to a healthy body, and identify the roles of each 5 food groups. Briefly discuss what necessary nutrients are, and what hunger feels like.

Topics / Skills Learned

- Basics of MyPlate nutrition
- Difference between a 'Sometimes Food' v an 'All the Time Food'
- Necessary nutrients for growing bodies

Discussion & Questions

- Why are fruits & vegetables important to eat?
- Ask students to describe their experiences eating fresh F/V
- What do they like/don't like and why. Ask students to talk about their favorite meals & memories.

Materials

Presentation

- Velcro Plate & Foods
- Posters / MyPlate

Activity

- Coloring pages
- Blank paper
- Crayons or colored pencils

Snacks (*Optional*)

- Any fresh fruits, vegetables, healthy snack mixes.

Activity (30 Minutes): Additional Activities on following page

Have students create an image / tell a story with pictures about their favorite fruits and vegetables. If ample time, ask students to share their image with the group. If students need example, create your own and present to the group.

Prompts:

- First time trying a F/V
- Special recipe involving F/V
- Memorable event with food (Special occasion, funny story— bobbing for apples)
- "Feeling hungry story"

Healthy Eating

Presentation (30 Minutes)

Start: Arrange posters, Velcro Plate, and Foods on the board for students to see.

Begin by engaging students in a conversation about their eating habits, age, level of physical activity, and what their last meal was. Allow ample time for children to respond and share their thoughts and prior knowledge to healthy eating.

Ask who thinks their the healthiest in the room. Why?

Next, ask students what food does for our bodies. Consider physical, mental, & emotional elements. Ask if students are able to identify any necessary nutrients for a healthy body. Use MyPlate poster to explain the 5 food groups. Ask students if they know **examples of foods that fit into these groups. Ask students if they know examples of foods that provide some of the nutrients for growing bodies.** Compare necessary nutrients and food group requirements. Examples: fiber, protein, antioxidants, iron, calcium etc.

Ask what happens when we don't get these nutrients everyday? What does it feel like to be hungry? Physical: head/stomach ache, lethargy. Mental: Sad, angry/frustrated.

Assess: Review the role of food in healthy bodies, and what is on Myplate?

Additional Activities:

1. MyPlate: Let students come to the board and select 1-2 food items, they can then decide sometimes foods v all the time foods. Ask them to explain why they think their decision is right.

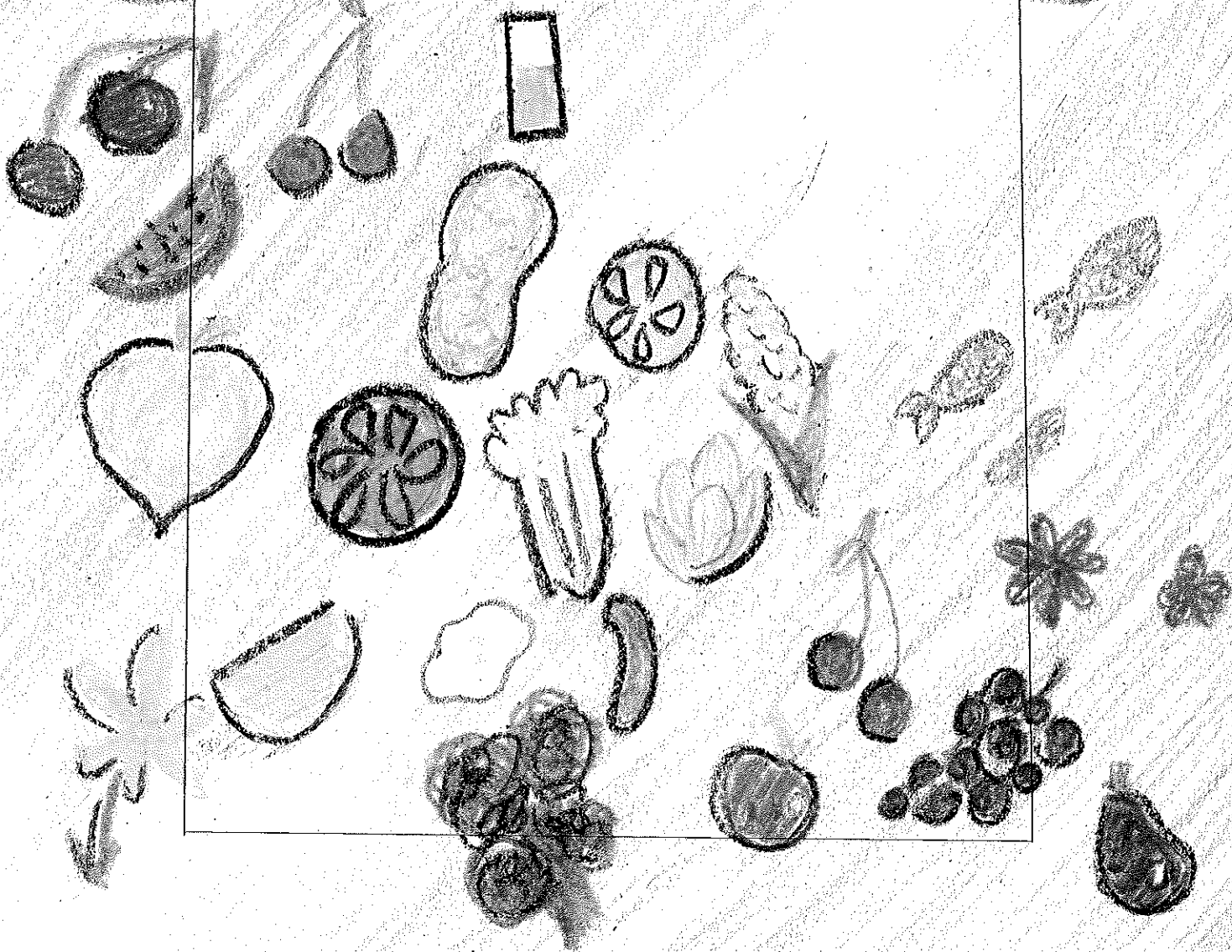
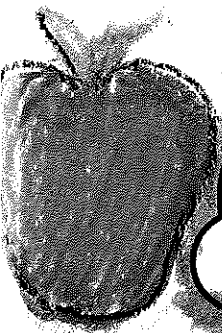
2. Food Rainbow: Provide students 'Food Rainbow' sheet (or blank paper) and ask them to draw a food rainbow. Suggestions for Indigo/Violet: Borage (flowers), blue cheese, lobster/crab/ling fish, kale, broccoli, milk mushrooms, chili peppers, beets, eggplant, purple: tomatoes, potatoes, carrots, blue corn.

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<https://www.choosemyplate.gov/>

ALEX



Garden topic: Planting Correctly

Lesson: Where does our food come from?

Goal: Teach children about how fruits and vegetables grow.

Objectives:

- Children will learn the steps in the food system.
- Children will learn about where fruits and vegetables come from.
- Children will plant their own seed to take home.

Overview:

- Activity: Making cheese from a rock
- Lesson: Where does our food come from?
- Activity: *The Story of Miguel's Tomatoes*
- Garden topic: Planting correctly
- Activity: Seed planting

Supplies:

- Sheets of paper for *Making Cheese from a Rock* activity
- *The Story of Miguel's Tomatoes* story
- *Food Systems* diagram
- *The Story of Miguel's Tomatoes* picture-drawing handout
- Soil
- Seeds
- Plastic cups
- Trowel

Activity: Making Cheese from a Rock

- Ask: Do you think it's possible to make cheese from a rock? We are going to do an activity to show that you can make cheese from a rock!
- Give each child a step/picture (can write/draw them on individual sheets of paper) and help them line up in the following order, while discussing each step:
 - Rock: the basis for all soil is rock
 - Wind and rain: weathers the rock
 - Gravel/sand: rocks weather to become sand, clay, and gravel
 - Dead leaves: sand, clay, and gravel mix with organic matter
 - Soil: these become soil
 - Grass: soil is a habitat for plants like grass, which becomes hay
 - Sun: grass grows by the energy of sunlight, through a process called photosynthesis
 - Hay: hay is harvested from grass

- Cows: cows eat hay
- Milk: cows produce milk
- Farmer: the farmer uses the milk to make cheese!
- Ask children again if they think we can make cheese from a rock

Lesson: Where does our food come from?

- Ask: Where do we get our food? (If they say the market or grocery store, ask where do you think the store gets the food?) Food starts with the farmer!
- Now tell the children that you are going to read a story about a farmer and his tomatoes. Ask them to think about all of the things that might happen to the food before it is eaten. Read *The Story of Miguel's Tomatoes* out loud to the children.
- Hold up the *Steps in the Food System* picture and discuss the different steps
- Now we're going to discuss the steps of the food system that we read about in *The Story of Miguel's tomatoes*
 - Getting ready to grow food
 - What did Miguel need to begin growing his tomatoes? Seeds, fertilizer, a plough and land. What would happen if these were not available? Could Miguel grow tomatoes without these supplies?
 - Growing the food
 - What did Miguel need for the tomatoes to grow? Sunshine, rain, his hands to work, weed and care for the tomatoes (labor), understanding of growing food, the land and agriculture (education/knowledge). Could Miguel's tomatoes have grown if these were not available?
 - Moving food from the field
 - Where were Miguel's tomatoes moved to after he and Ana picked them?
 - Some were taken to Miguel and Ana's house to be eaten for dinner or to be put into jars to store. The rest were taken to the village market by Miguel in a cart. At the village market they were loaded into a truck and taken to the city. Some were taken to the city market. The rest were taken to the food processing factory.
 - How far did the tomatoes travel for Miguel and Ana's dinner? How far did the tomatoes travel to get to the city? How did they make this journey? (Miguel's cart, Pedro's truck). What would happen to the tomatoes if the cart or truck broke down on the way?
 - Processing, selling or storing food
 - How did Ana process the tomatoes? How did Miguel sell his tomatoes? How did Pedro re-sell the tomatoes? What happened to the tomatoes at the food processing factory?
 - Preparing and eating the food
 - Discuss how people need money to buy food unless they grow their own as Miguel and Ana do. Discuss how people must understand how to use the food

safely and choose foods that keep them healthy. Discuss the problems that could arise with each of the above steps and how the food would then not be available for people to eat. Discuss the difference between the tomatoes that were eaten directly by Miguel and Ana from their field and the tomatoes that came back in a can.

- Activity: For each step in the food system process, have them draw a picture to describe it.

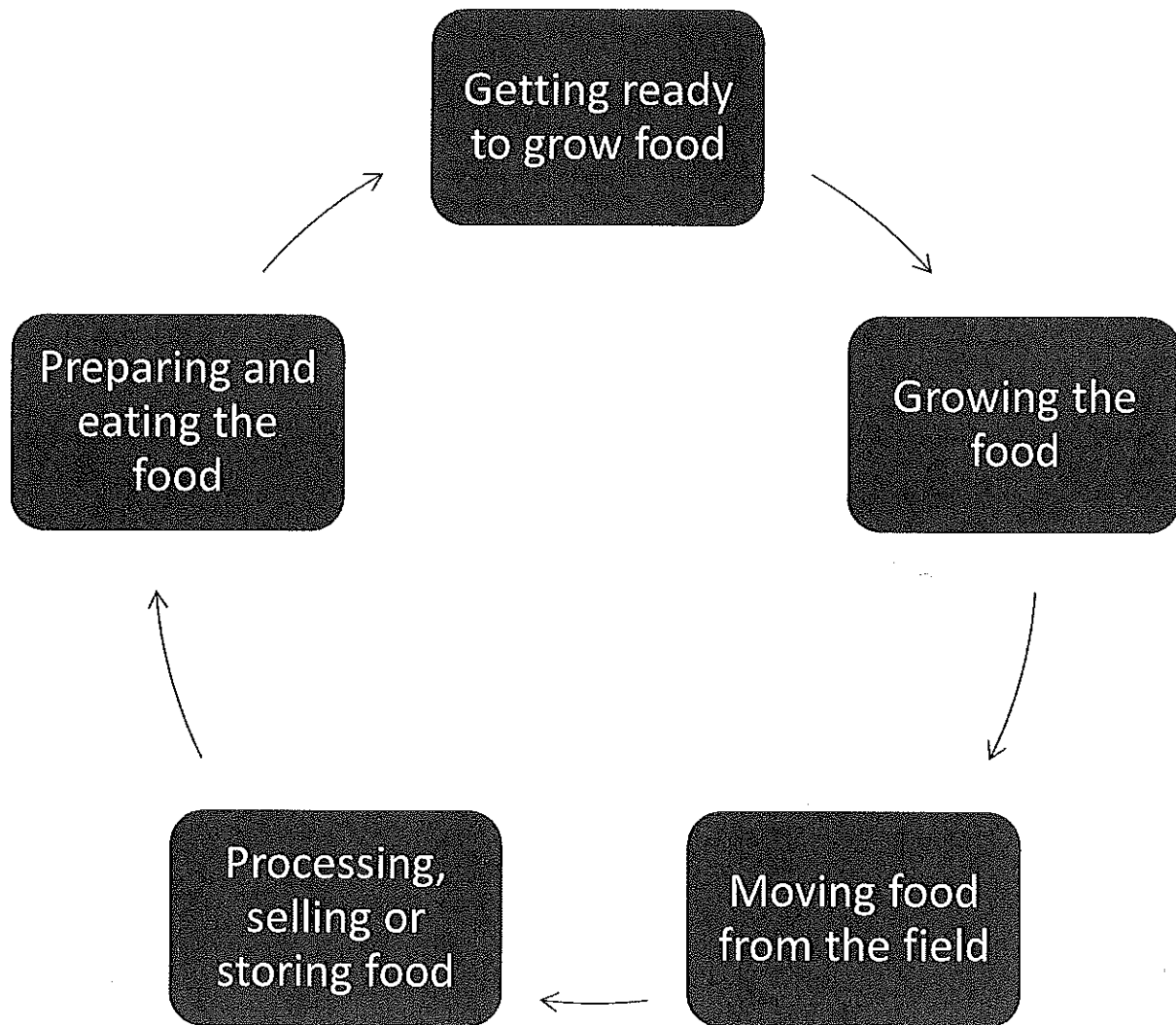
Garden topic: Planting correctly

- Ask: If you wanted to plant a garden, what would you have to do?
 - Seed or seedling?
 - Seedlings: little baby plants that can be planted directly into your garden
 - Seeds: come in packets and will turn into a seedling and eventually, a full-grown plant
 - Prepare the ground
 - Remove large sticks, rocks, roots, and crush any large dirt clods. Seeds and seedlings like a nice smooth area to grow in
 - Plant your seeds or seedling
 - Seeds: dig appropriately-sized holes. Small seeds get small holes and larger seeds get bigger holes. Use your fingers to make the hole so it's not too deep
 - Seedlings: dig a small hole the exact size or a tiny bit deeper than the seedling. Gently pull the seedling out of the container using the base of the stem or by tipping it upside down. Set the ball of the seedling in the hole and fill in the space around the seedling with soil.
 - Spacing
 - Different plants need different spacing in between plants. The seed packet or seedling tag will tell you how much space is needed in between plants
 - Water well
 - Water right after planting and water every day until plants become big and strong

Garden activity: Seed planting

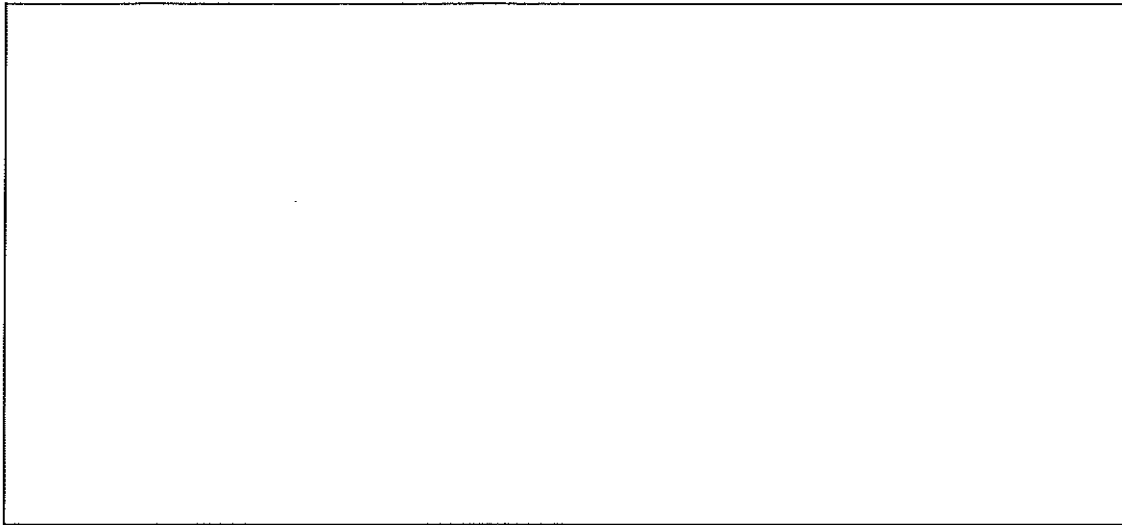
- Explain to children that are going to plant our own seeds to take home so we can see how plants grow.
- Give each child a plastic cup, label it with their names
- Help each child fill the cup almost full with soil, leaving about 2 inches at the top
- Help children plant seeds in their cup at the appropriate depth
- Have each child water their plant and put it near the window

The Food System

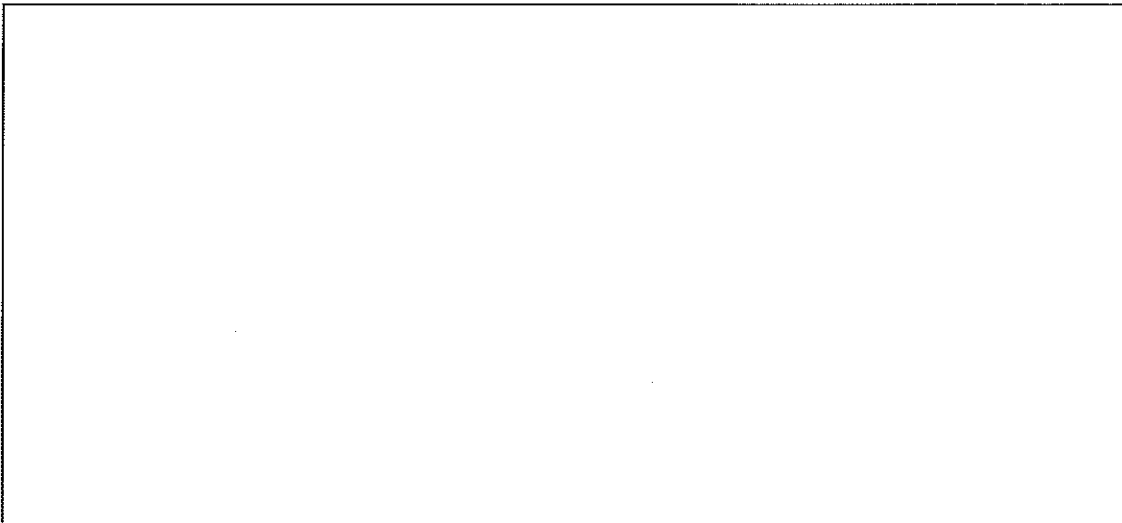


Pretest/Posttest

Draw a picture to show where our food comes from.

A large, empty rectangular box with a black border, intended for a drawing showing where food comes from.

In the space below, write what you think you need to grow a tomato.

A large, empty rectangular box with a black border, intended for writing about what is needed to grow a tomato.

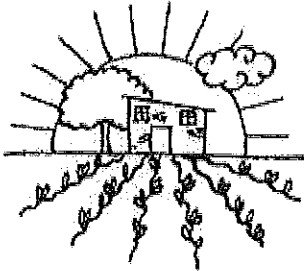
If you planted a seed in a pot, do you have to water it right away? (Circle one).

YES

NO

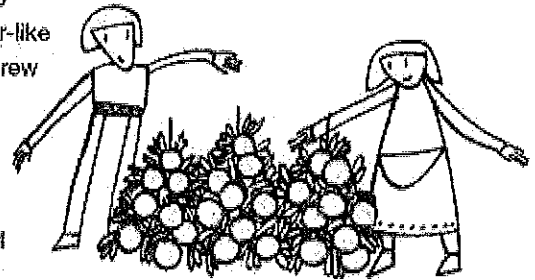
Story of Miguel's Tomatoes

The Tomatoes Grow In the Fields

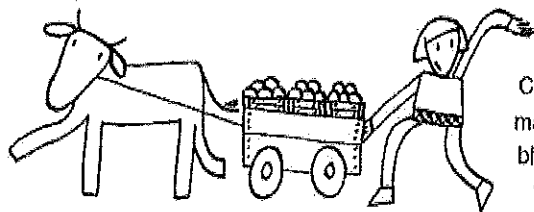
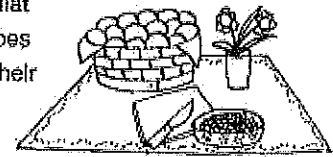


The sun was shining on the field beside a small wooden house. The earth was damp with rain and rich with manure from the animals. Miguel pushed his new plough slowly back and forth across the field, making long rows that looked like tiny mountains in the dark-brown soil. Satisfied that his little mountain rows were neat and straight, he gently planted small green tomato shoots that he had raised from seeds. Many days and nights went by. Rain came and went, and the plants grew tall and thick with leaves. Miguel walked up and down the rows, caring for the plants and adding more droppings from the animals to give nutrients to the soil. One day Miguel saw small yellow flowers

peeking through the green leaves. Soon there were so many flowers that they looked like stars in the sky. And then, under each star-like flower, a tiny, round, green tomato appeared, as if by magic. The tomatoes grew and grew, and changed colour as the days went by. One by one, each tomato turned from dark green, to yellow and then to orange-red. When a tomato became large and red, Miguel knew it would be soft and juicy and ready to eat. He went up and down the rows and picked the tomatoes that were red and ready for his family to eat that day. Miguel brought a small bowl filled with tomatoes into his house. Ana, his wife was happy to see how large and red the tomatoes were and knew they would taste sweet and good. She washed the tomatoes carefully to remove the dirt, and cut them into small pieces to make a sauce for their dinner that evening.



After many days, the field was coloured with bright red tomatoes on the green plants as they stood in long, neat rows. Now many tomatoes were ready to be picked. Ana could not use all of the ripe tomatoes for dinner that night. Early the next morning Miguel and Ana came into the field carrying large flat boxes. They slowly went up and down the rows of tomato plants, gently picking the tomatoes and packing them into the boxes. Miguel and Ana loaded the boxes of ripe tomatoes into their rickety cart. Saying goodbye to Ana, Miguel slowly pushed the cart down the dusty path to the village market.

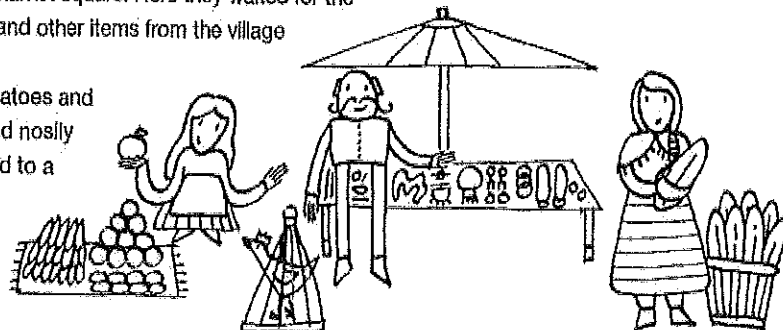


The Tomatoes go to the Village Market

The market square was busy with people unloading goods to sell. Clothing and jewellery, belts and shoes, as well as cakes and breads made early that morning, were spread out for display on tables and blankets under brightly coloured umbrellas. Eggs, meat and cheeses were being kept cool under wet cloths, and fruits and vegetables were carefully stacked into high piles. Some people, including Miguel,

unloaded their boxes on one side of the market square. Here they waited for the people who came in trucks to buy foods and other items from the village and take them to the big cities.

Miguel stood by his boxes of tomatoes and watched as an old battered truck rumbled noisily into the little market square and sputtered to a stop. Pedro waved to the villagers in the market as he jumped out of the truck and slammed the door with a noisy bang. Pedro was happy to see many

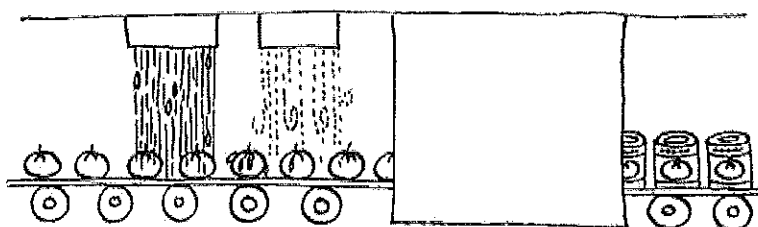


Story of Miguel's Tomatoes

The Tomatoes go to the Food Processing Factory

The rest of Miguel's tomatoes continued their journey through the crowded city streets. All around Pedro's truck, horns were honking and traffic was rushing as a police officer directed Pedro on to the highway leading to the factory district outside the centre of the city. Pedro's truck rolled up to the loading dock of the food processing factory just as the sun was going down behind the city.

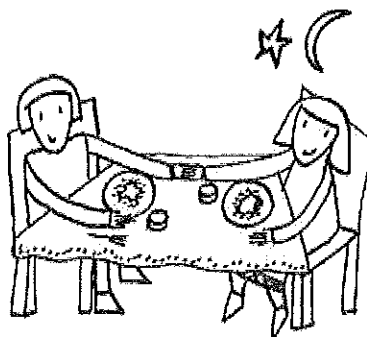
At the factory, strong men carried the boxes of tomatoes from Pedro's truck into the warehouse, talking and laughing as they worked. Long rows of boxes filled with tomatoes and other vegetables were crowded against each other, waiting to enter the factory to be turned into canned food. Boxes of tomatoes were emptied on to the conveyor belt that chugged its way through the factory to each of the processing steps. Miguel's tomatoes were now mixed up with tomatoes from all parts of the countryside. The conveyor belt slowly carried the shiny red tomatoes past the sorters. The sorters examined the tomatoes as they flowed by, looking like a flowing red river of tomatoes. Their hands, wearing plastic gloves, could be seen darting out quickly to remove any tomatoes that were damaged. The tomatoes slowly chugged to the next station, where they were squirted with hot water and tumbled to remove their skins. Next they were dropped into a large tub where they were cooked and spices and salt were added. Miguel's tomatoes were now bubbling in the large tub with all the other tomatoes, smooth and plump in the spicy red juice. They continued their journey to the canning area where they were dropped with a splash and a plop into rows and rows of shiny round cans. With a noisy bang, the cans were sealed. A bright red label with the picture of a tomato was glued on to each can. Workers quickly snatched up the cans and put them into strong brown cardboard boxes.



The Tomatoes go Home

Miguel's tomatoes, deep inside the round cans, packed into cardboard boxes, were piled on to an electric cart that took them to the big warehouse to be stored until they were sold. Miguel's tomatoes could spend many months waiting in the warehouse until they were ordered. They could be ordered by someone in the city, or they could travel around the world to a distant place, perhaps even a place where tomatoes have never grown. They could travel in a truck, a train, an aeroplane or a boat. They may be purchased and used for dinner at a hospital, a school, a restaurant, or by a family.

It is even possible that one day Miguel and Ana will go to the grocery store in their small village and buy a can of cooked tomatoes when their own supply of sauce made by Ana is gone. They will sit down to dinner with the canned tomatoes in a sauce. And Miguel will say these tomatoes are delicious, Ana, but not as good as ours. And Ana will reply, yes, not as good as ours, but they are very, very good, indeed. And they will not know that their tomatoes have come back home.



From the Farm to Your Home

Lesson Title: Crops 1: Where Does Food Come From?
Page 1 of 4

Name: _____



Draw pictures from *The Story of Miguel's Tomatoes* showing different scenes from the journey his tomatoes took from his farm to people's homes.

Step 1: Getting ready to grow food

A large, empty rectangular box with a thin black border, intended for a student to draw a scene from the story related to 'Getting ready to grow food'. To the right of the box is a small, pixelated black arrow pointing downwards.

Step 2: Growing the food

A large, empty rectangular box with a thin black border, intended for a student to draw a scene from the story related to 'Growing the food'. To the right of the box is a small, pixelated black arrow pointing downwards.

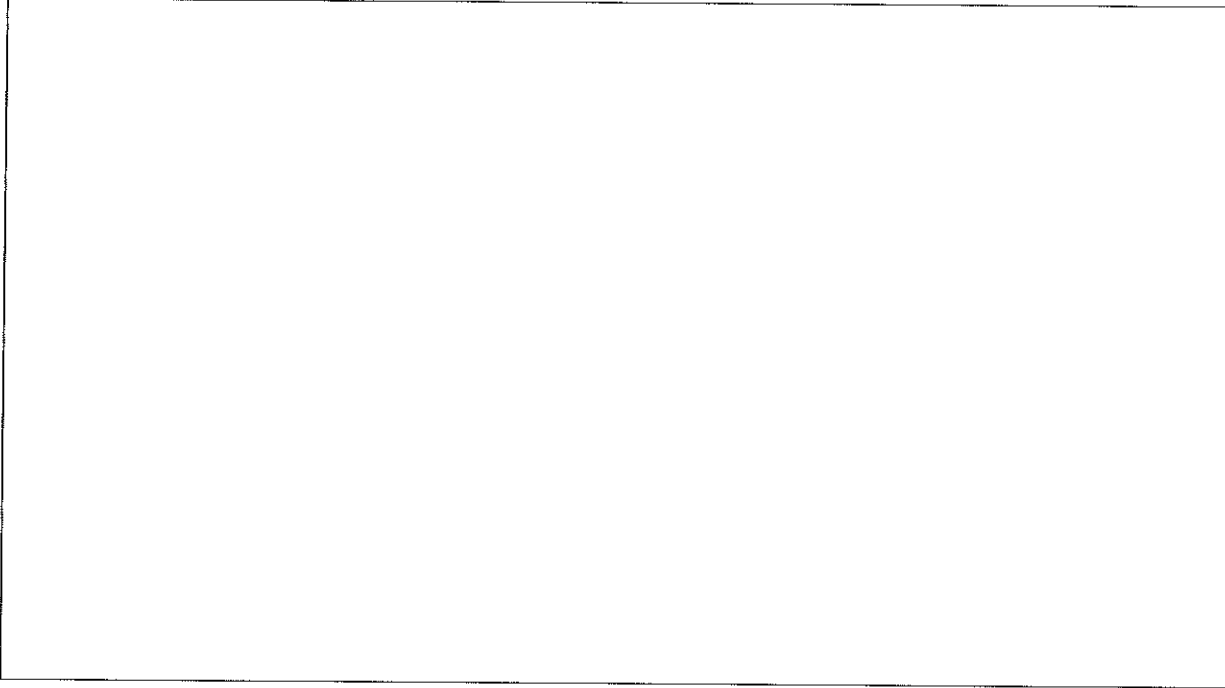
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From the Farm to Your Home

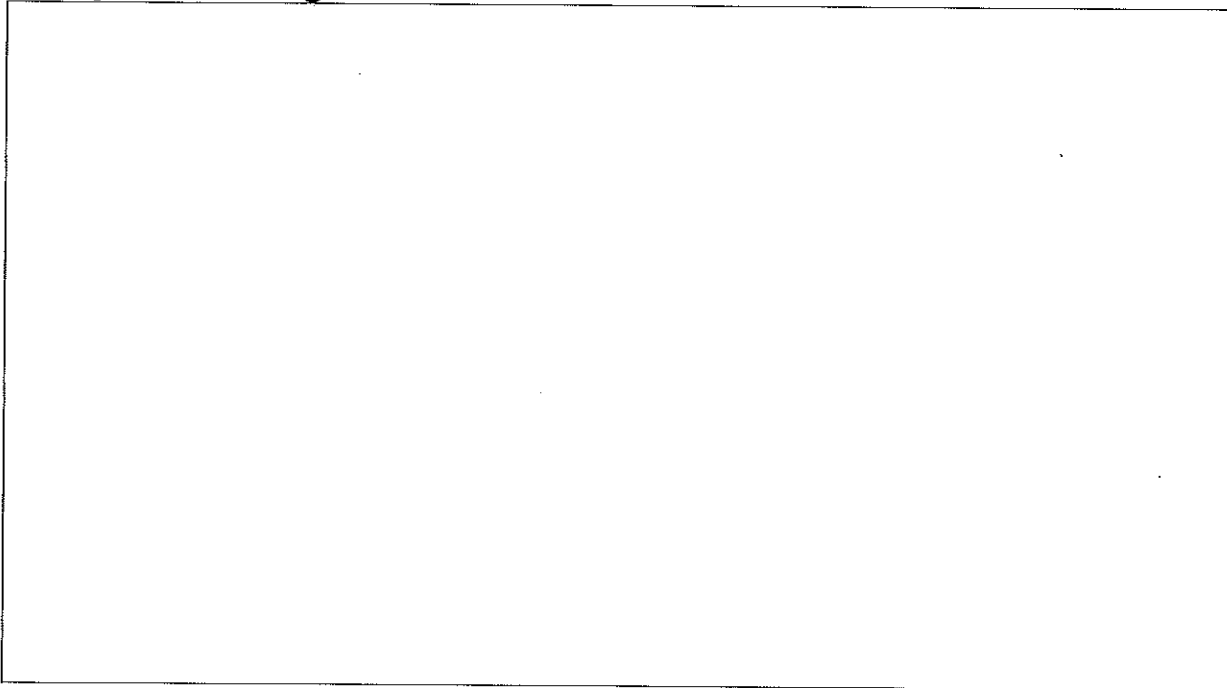
Lesson Title: Crops 1: Where Does Food Come From?
Page 3 of 4

Name: _____

Step 5: Selling the food



Step 6: Storing the food



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Garden topic: Composting

Lesson: All About Compost

Goal: Teach children about the benefits and specifics of composting.

Objectives:

- Children will learn the necessary requirements to make good compost.
- Children will learn how worms are beneficial for our compost bins.
- Children will learn what items can be composted.

Overview:

- Garden topic: Composting
- Activity: Let's Make Compost
- Video: Worms are Wonderful
- Lesson: All About Compost
- Activity: Compost Sorting

Supplies:

- Large sheet of paper
- Markers or pens
- Way to show a YouTube video
- Composting worm coloring pages
- Items for composting activity (real or pictures)
- 3 bins for composting activity (real or pictures)

Garden Topic: Composting

- Composting Facts
 - Composting creates a medium for plants that is filled with the nutrients that they need to flourish
 - Compost is made up of things you already have in your home
 - Composting helps the environment and reduces the trash we send to landfills
 - All organic scraps or wastes break down over time. When nitrogen and carbon wastes are combined, tiny microbes, insects, and worms help them decompose
 - What's left is organic matter, or "humus," a nutrient-rich medium that helps plants grow and thrive. Compost comes from things you throw away every day and costs nothing!
 - It usually takes 4-6 months to turn compost into usable soil for your garden. For faster results, you can turn it with a garden fork once or twice a month
- What you need to make compost:

- Greens (nitrogen): collect produce scraps, grass clippings, coffee grounds, aquarium water from freshwater tanks, manure, green plants, tea bags and weeds that have not seeded
- Browns (Carbon): dried leaves, eggshells, paper towel/toilet paper rolls, newspaper, cardboard, paper egg cartons, and sawdust
 - Tip: the smaller the pieces, the faster they break down
- Try to maintain a 50:50 balance of greens and browns in your compost pile
- Water: without moisture, your compost pile will become too dry for the microbes and insects to do their work
- Air: proper airflow will aid in the composting process. For larger piles, it is best to stir it occasionally
- Microorganisms: these are the “little bugs” that help turn your greens and browns into soil that can be used for your garden. These can be introduced by adding a few shovelfuls of dirt to your pile

Activity: Let's Make Compost

- Have a large sheet of paper and have the kids come up one by one and ask them to write one item that could be placed in the compost bin. Ensure that kids are getting a 50:50 mixture of greens and browns, water, microbes, and air

Video: Show the *Worms Are Wonderful* YouTube video clip

- Idea: could show them live worms
- Read *Can't Live Without Me* story about earthworms
- Activity: Color the composting worm page

Lesson: All About Compost

- Types of materials that can be used for a compost bin: old trash can, barrel, chicken wire made into a cylinder, stacked bricks, concrete blocks, four wooden pallets tied together, or just a plain old pile!
- Whichever type you choose, it must be open on the bottom to allow the compost materials to come in contact with the soil and to allow for plenty of airflow
- What can you compost?
 - Fruit and vegetable scraps
 - Cardboard
 - Paper or newspapers
 - Coffee grounds
 - Egg shells
 - Leaves and grass clippings
- What can't you compost?
 - Leftover cooked food

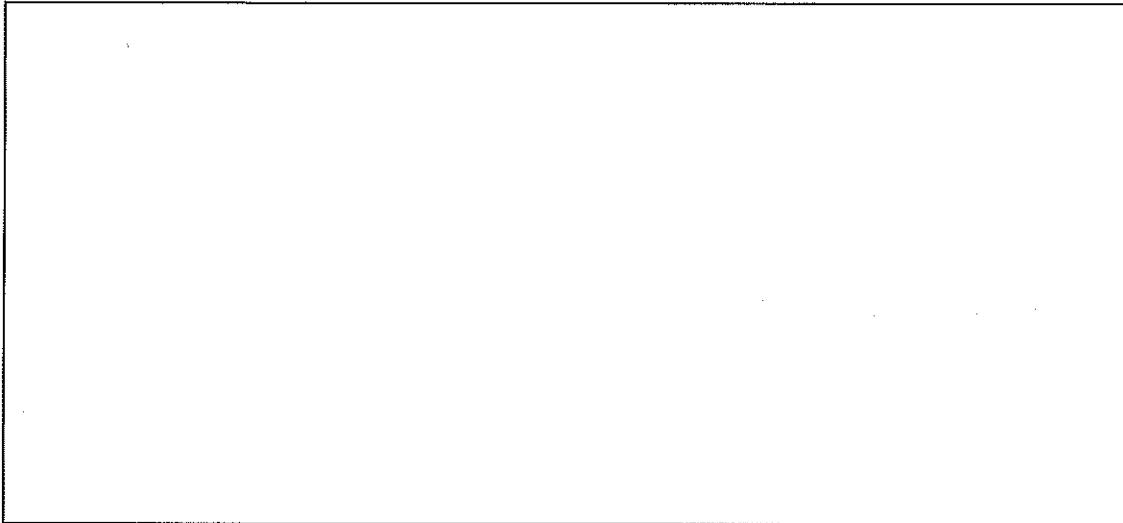
- Meat
 - Inorganic material, like plastic or metal
 - Cloth and glossy paper
 - Living weeds with roots
- Benefits of composting:
 - Suppress plant diseases and pests
 - Eliminate need for chemical fertilizers
 - Increase crop yield
 - Restore wetlands and prevent de-forestation
 - Enriches soil
 - Prevent pollution
 - It's easy!
 - Less garbage
 - Makes your kitchen smell better (no more stinky produce scraps in the trash!)
 - Is inexpensive
 - Can save money

Activity: Compost Sorting Relay

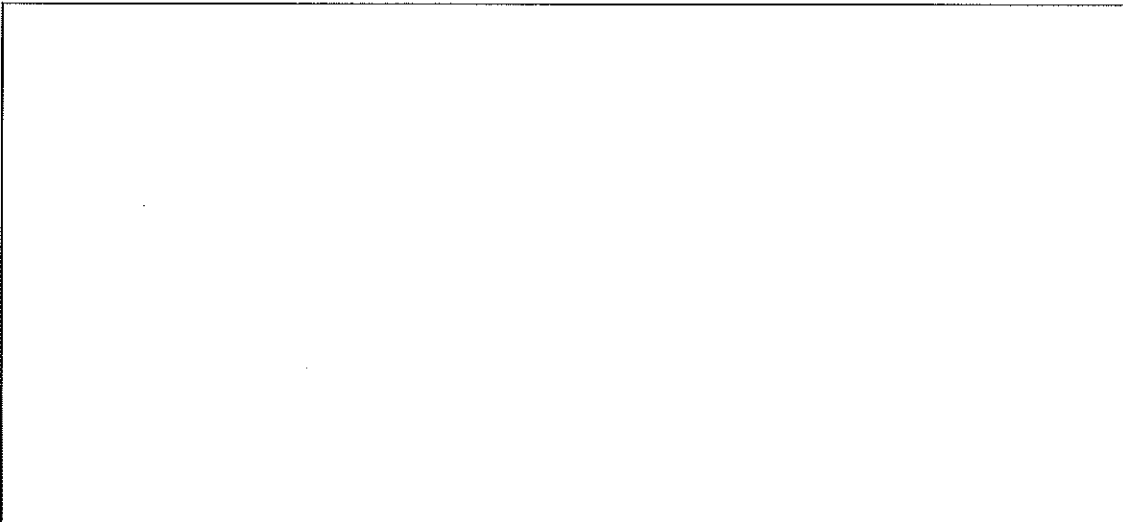
- Have a table with items (pictures or real) that fall into the following categories: recycling, trash, and compost
- Have 3 bins (pictures or real) and have kids come up one at a time and pick an item from the table and add it to the correct bin
- Could make it a relay game where you break them into 2 or more teams and have them complete this activity in a relay-style. The first team done wins

Pretest/Posttest

Draw a picture of one item that can be composted.



Draw a picture of one item that cannot be composted.



Composting is easy and almost free. (Circle one).

YES

NO

A collection of black and white line drawings for coloring. The items include: a striped caterpillar with a small house on its back; a box of Muesli Fruit & Nut cereal; a five-petaled flower; a single leaf; a branch with several leaves; a rectangular piece of bread with seeds; a broken egg; a pile of grass; and various nuts and seeds, including what looks like a walnut and some almonds.

<http://urbanfishfarmer.com/wp-content/uploads/2013/02/compost-colouring-picture.jpg>

Can't Live Without Me: Why Herman and Other Worms are So Important to Us

I'll bet you think that the earthworm is only good for fish bait. Well, think again. The earthworm is one of nature's top "soil scientists." The earthworm is responsible for a lot of the things that help make our soil good enough to grow healthy plants and provide us food.

Worms help water flow through the soil. Worms help to increase the amount of air and water that gets into the soil. They break down organic matter, like leaves and grass into things that plants can use. When they eat, they leave behind castings that are a very valuable type of fertilizer.

Earthworms are like free farm help. They help to "turn" the soil—bringing down organic matter from the top and mixing it with the soil below. Another interesting job that the worm has is that of making fertilizer. If there are 500,000 worms living in an acre of soil, they could make 50 tons of castings. That's like lining up 100,000 one pound coffee cans filled with castings. These same 500,000 worms burrowing into an acre of soil can create a drainage system equal to 2,000 feet of 6-inch pipe. Pretty amazing for just a little old worm, don't you think?

Having worms around in your garden is a real good sign that you have a healthy soil.

The Worm Rhyme

Five little worms went out to play
On a bright and sunny day,
A banana peel is what one found
And he brought it home into the ground.

Four little worms ...
a cracked eggshell
Three little worms ...
some rotten leaves
Two little worms ...
a old newspaper
One little worm ...
a used tea bag

Those five little worms dug deep in the ground,
They wiggled their bodies around and around,
They ate those kitchen scraps, munch! munch! munch!
And made some DIRT from their garbage lunch!

Garden topic: Plant Parts

Lesson: How does a seed become a plant?

Goal: Teach children about different plant parts that we eat.

Objectives:

- Children will learn how seeds become a plant.
- Children will learn about the different parts of a plant.
- Children will learn about the different parts of a plant that we can eat.

Overview:

- Video: How does a seed become a plant?
- Discussion: How does a seed become a plant?
- Discussion: Plant Parts
- Discussion: Edible Plant Parts
- Activity: 4 different activities that can be done, dependent on time

Supplies:

- Seed germination picture
- Eat the Whole Plant worksheet and foods (optional)
- Large piece of paper
- Pictures for plant part identification
- Plant parts we eat coloring page
- Plant parts we eat matching page

Video: *How does a seed become a plant?* On YouTube

Discussion: How does a seed become a plant?

Everything that lives on earth has a life cycle. Life begins, it grows, it reproduces, it dies. But what is a plant's life cycle? Plants start their lives as tiny seeds. Seeds can be as tiny as a grain of rice or bigger than a fingernail. Some are round, while others are flat or tear-shaped. Inside a seed is an embryo, which is a tiny plant, and the endosperm, which are small leaves which supply the embryo food. The outside of the seed has a seed coat, which protects the embryo from injury or drying out.

All seeds need moisture, oxygen and the right temperature to germinate, or grow. Until they have these conditions, the seed remains dormant and does nothing. Once the seeds have the right conditions, the plant inside starts to grow and get bigger. It pushes open the seed coat – sort of like a chick hatching out of an egg. Tiny leaves appear and push out of the soil.

Animals often eat seeds. The seeds come out in the animal's poop. They drop to the ground and make new plants. Some seeds are carried to new places by the wind.

Show picture of seed germination.

Discussion: Plant Parts

Can anyone name a part of a plant?

Roots: form underground; absorb water and nutrients for growth; store food for plant

Stems: connect leaves to roots; carry water and nutrients from roots to leaves

Leaves: catch the sun, which gives plants energy to grow; release moisture and oxygen

Flowers: where fruits/seeds come from

Fruits: contain seeds

Seeds: form inside of a fruit; when put in soil, grow into a new plant

Activity: Have the whole class help label the plant part worksheet

Discussion: Edible Plant Parts

Which parts of the plant do we usually eat? The seed? The fruit? When we eat asparagus, we are eating the stem of the plant. When we eat spinach or lettuce, we are eating the plant's leaves. We eat the fruit of squash, cucumber and tomato plants. When we eat corn or peas we are eating seeds, and when we eat radish or carrot, we are eating roots. Cauliflower and broccoli plants produce flowers we like to eat. With some plants we eat more than one part. The root of the beet plant is what most people like to eat, but the leaves are also good to eat—in salads, when the leaves are young and tender, and cooked when they get bigger. We eat the root of the onion plant but can also eat the stems, for a milder flavor. Some of the plants we eat are poisonous—if we eat the wrong part. The leaves of tomato plants are poisonous. For many years people would not even eat tomatoes, because they thought the entire plant was poisonous. Now we know that the fruit of the tomato plant has vitamins that are very good for us. They are also delicious—sliced or chopped fresh into salads, cooked into spaghetti sauce or processed into ketchup.

Roots: beets, carrots, radishes

Stems: asparagus

Leaves: cabbage, lettuce

Fruit: peppers, tomatoes

Seeds: corn, peas

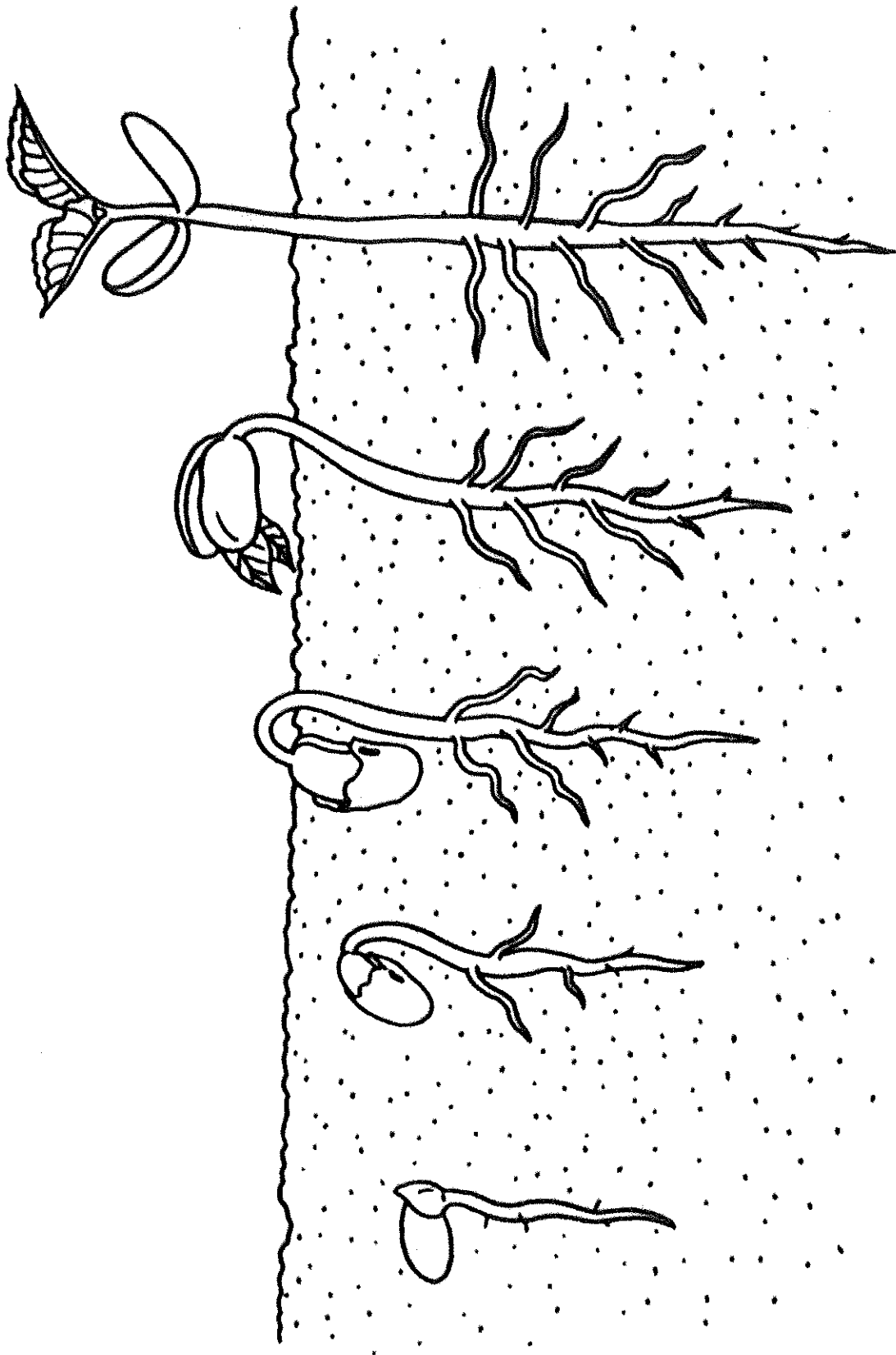
Flowers: cauliflower

Activity: could have different foods for them to try in each category and have them identify what part they are eating. *I Can Eat a Whole Plant* worksheet (sunflower seeds, broccoli, celery, spinach, carrots).

Activity: Have a large piece of paper with 4 categories: flowers/fruits, stems/stalks, leaves, and roots. Have pictures of different vegetables/fruits and have them place it in the correct category.

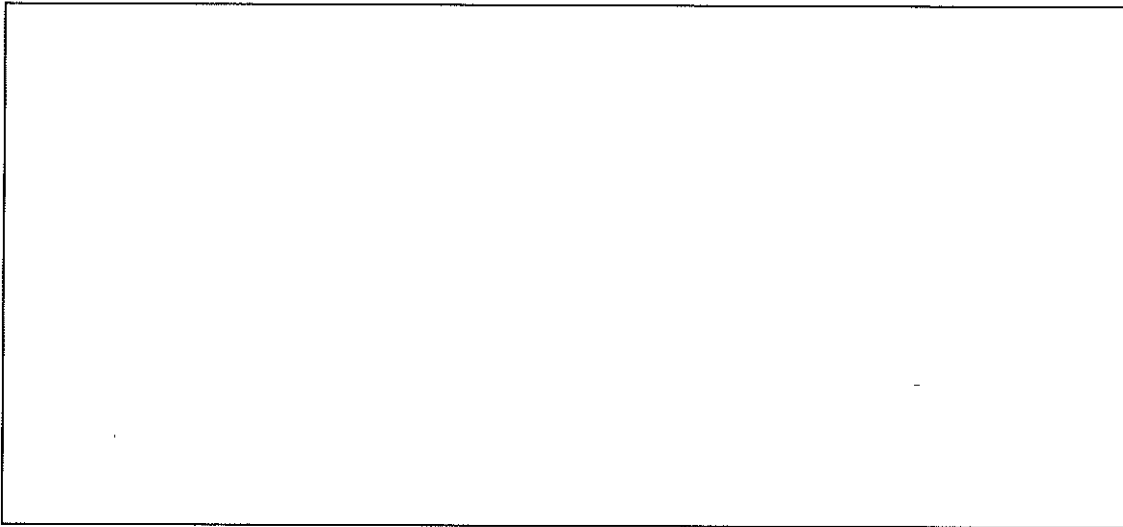
Activity: Plant Parts We Eat coloring page

Activity: Plant Parts We Eat matching page

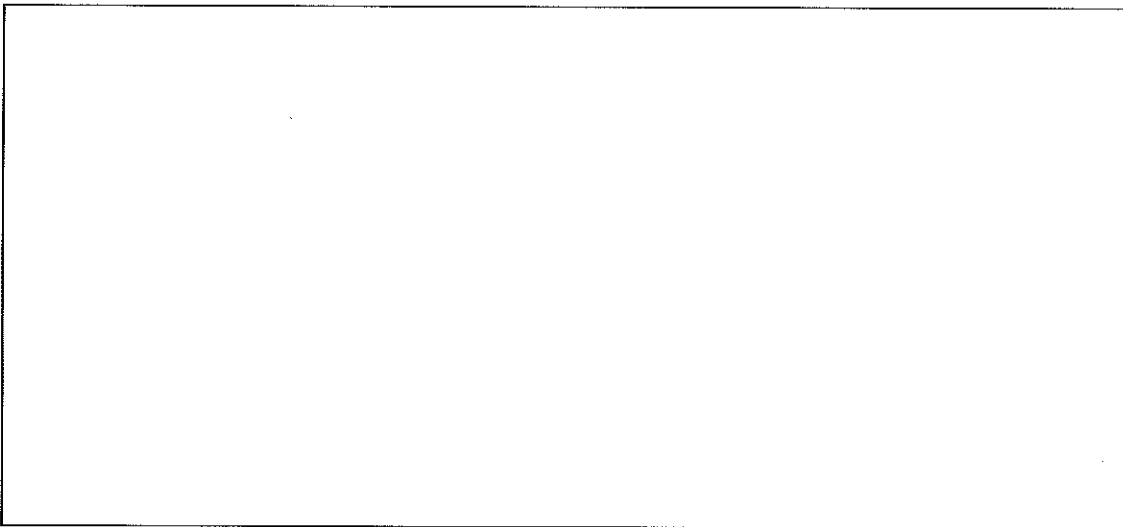


Pretest/Posttest

Draw a picture of a seed.



Draw a picture of something you eat that is the root of a plant.



Fruit comes from the flower on a plant (Circle one).

YES

NO

Plant Parts We Eat

A

Color the vegetables. Make them look good enough to eat.

You eat our roots.



beets

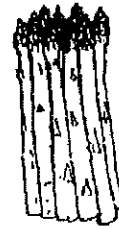


carrots



radishes

You eat my stems.



asparagus

You eat our leaves.



cabbage



lettuce

You eat our fruit.

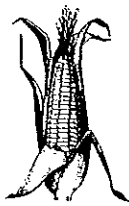


pepper



tomato

You eat our seeds.



corn



peas

You eat my flowers.



cauliflower

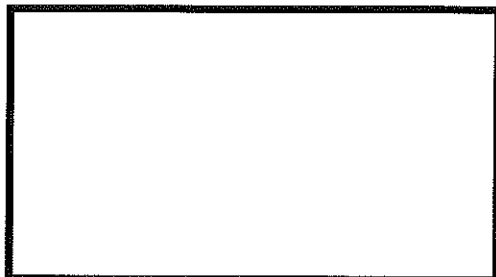


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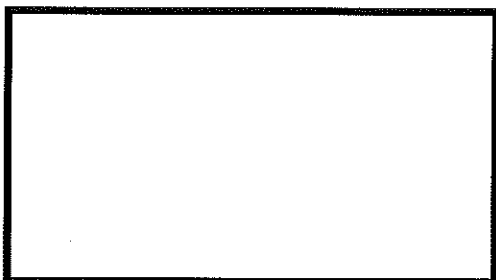


I Can Eat a Whole Plant

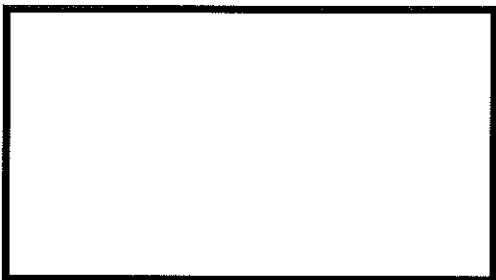
Seeds →



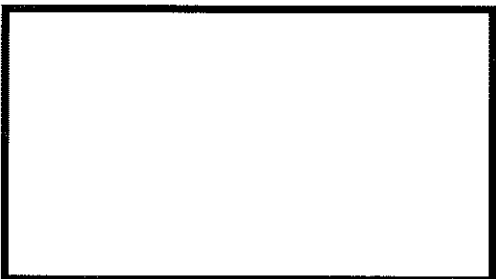
Flower →



Stem →



Leaves →



Roots →

