Seed to Plate

Post Activity
K to 5th grade

PLANT PARTS
As we learned at Grow Dat vegetables can come in many different shapes and sizes and serve different purposes for different living thing. Today we are going to draw a picture of our favorite vegetable and then learn about the parts and functions of the vegetable. The basic parts of most all plants are the roots, leaves, stems, flowers, fruits, and seeds.

If it is a vegetable that they saw at Grow Dat encourage them to draw it the way it looks in the ground. After everyone has drawn their picture have some students share what they drew and which part of the plant do they eat.

Discussion

Roots
Help provide support by anchoring the plant and absorbing water and nutrients needed for growth. Some plants have taproots with a few branches that is thick and swollen like a carrot or a beet. Some plants have a fibrous root system with many very fine roots, some examples are onions and lettuce.
Can you name any root vegetable?
What will happen to a plant if its roots are harmed?

Stems
Stems carry water and nutrients taken up by the roots to the leaves. Then the food produced by the leaves moves to the other parts of the plant. Stems also provide support for the plant allowing the leaves to reach sunlight that they need to survive. Where the leaves join the stem is called the node. The space inbetween the leaves and the stem is called the internode.
What plants can we eat the stems from?

Leaves
Leaves are made to catch light and have openings and to allow water and air to come and go. Leaves are the site of the food making process that all green plants use called photosynthesis. Photosynthesis supplies food for the plants through the sun. Leaves
come in many different shapes and sizes. What are some leaves that we can eat?

**Flowers**
All plants have flowers to make seeds. Inside the flower is the pistil where the flowers eggs or ovules are held until they are joined by the pollen to make seeds. Petals are also important parts of the flower because they help to attract pollinators.
What is the job of a pollinator?
What is an example of a pollinator?
What is an example of a flower that we eat?
Broccoli and cauliflower

**Fruits**
The fruit is the ripened ovary of a plant containing the seeds. After the pollen and egg join in the flower known as fertilization, the ovary swells and becomes either fleshy or hard and dry to protect the developing seeds. Many fruits help seeds spread. Some things we call vegetables are really fruits such as tomatoes, cucumbers, and beans.
What is the special part that you can find in all fruit but no vegetables?

**Seeds**
Every seed is a tiny plant with leaves, stems, and roots parts waiting for the right things to happen to make it grow. Seeds are protected by a coat. This coat can be thin or thick and hard. Seeds are a plants way of getting from one area to another by either wind, water, or animal.
What are some seeds that you like to eat?
What animal might help spread seeds out in nature?

**Post Activity**
6th to 12th grade

**Design a Garden**
Review the things students saw on their trip to Grow Dat. What plants? What other organisms were there besides the crops? How were farmers at Grow Dat working to keep the ecosystem healthy? Another option here is to look at pictures of a few other kinds of urban farming, like raised beds, container gardens, hydroponics, etc.
Then, have students design their own farm or garden. Below are the questions we use with our high school farmers when we do this activity at the Grow Dat.

1. Pick a real site & a purpose: someone’s backyard, your school, an empty lot in someone’s neighborhood, the neutral ground, etc. What’s the primary purpose of the garden - make money at market? Education? A community garden for folks to grow their own food to eat at home? Who will use the garden?


3. Decide what you want to grow - Use seed catalogues for help. Think about varieties that will do well in our climate here. How would the garden look different throughout different seasons?

4. Design your garden. Create a map that illustrates your garden/farm. Think about what plants are where, how it changes through the seasons, how you’re watering your plants, etc. Will you have animals on your garden?

5. Sustainability. How can you reuse materials to make your garden? How can you make sure your garden’s carbon footprint is as small as possible?

6. Think through the budget. What supplies will you need? Create a list and estimate the cost. How will your garden cover the costs - by selling food? By getting grants? Something else?