Growing Fruits Classroom Kit

Teacher Guide

Contents

18 Biodegradable Pots, 18 Germination Bags
4 Compressed Peat Disks
2 Packs Strawberry Seed Pack (Fragaria vesca), 6 mg
2 Packs Mini Melon Cantaloupes Seed Pack (Cucurbitaceae melo), 150 mg
2 Packs Sugar Baby Watermelon Seed Pack (Citrullus lanatus), 400 mg
Teacher Guide, Student Guide

Planting Instructions

Place soil disks in a larger separate container. Slowly add 1.5 cups of water for each disk, pouring directly onto the disk. You will need six cups of water for the four included compressed peat disks. The disks take about 15 minutes to hydrate. They will hydrate faster if warm water is used. Use a spoon or fork to break it up and mix the soil thoroughly so it is slightly fluffy looking.

Divide the soil evenly between each pot. Make sure that there are no clumps and press smooth. Place one type of seed in each planter on top of the soil, one inch apart. Each planter holds about 3-5 seeds. Specific seed planting details for each type of seed are in the next sections. Write the plant name on the outside of the germination bag to identify the varieties of seeds growing prior to using. Place the pot into the germination bag. Gently apply a small amount of additional water on all seeds until the soil is thoroughly wet. Lift the bag up and blow into it. Try to fill it up with air and twist the pot to hold in the air. Seal with a rubber band or tape, holding the air in, so it fills up like a balloon. Be sure to put all the planters in a bright, warm, and bright area near a window. Remove the bag about a week after the seeds sprout. Check the water daily to ensure the soil stays moist.

Strawberry

Sprouting Your Seed

Sow your seeds 1/8th of an inch deep. Place your Container in the germination bag. Seal the top of the germination bag with a rubber band. Than place them on a windowsill or in bright light. Strawberries like to be kept evenly moist during germination. Your seeds will sprout in two to three weeks. You can remove the germination bag one week after your seed sprouts. Strawberry plants are fast growers. They can send out runners to produce new plants, allowing them to multiply and cover an area relatively quickly.

Growing on

When planting your strawberries outside, you should choose a location that will provide plenty of sun light. You can prepare the planting space by amending the soil with compost and mixing in an organic fertilizer. You should plant these 12-18 inches apart. You can move plants outside after they are well established, and all fear of frost has passed. Strawberries are perennial plants and will go dormant when it gets cold outside. However, they will come back to life again in the Spring and bear bunches of Strawberries. You can amend the soil with compost and mix in an organic fertilizer. Delay transplanting if a heat wave is on the way. You should leave six inches between plants. This will allow enough room for the plants to fill out.

Mini Melons

Sprouting Your Seed

Simply sow your seeds in the container at a depth of one-half inch. Place container inside germination bag. Seal the top of the germination bag with a rubber band. This will help maintain an even moisture level, and your melons will sprout in one to two weeks. You can remove the germination bag one week after the seed has sprouted. Move your mature plants outside after they are well established, and all fear of frost has passed.

Growing On

When planting your seedlings outside, you should choose a location that will provide plenty of sun light. Cantaloupes prefer to be in rich fertile soil in direct sun. You can prepare the planting space by amending the soil with compost and mixing in an organic fertilizer. Mini Melons like a lot of space and you should plant them at least 2 feet apart. This will allow enough room for the plants to fill out. You will be able to start enjoying you Mini Melons about 3 months after you plant the seeds! Your melons will be a golden color and have sweet aroma and slip easily from the vine when ripe.

Sugar Baby Watermelon

Sprouting Your Seed

Sow your seeds in the container ½ of an inch deep. Place your container inside of the germination bag. Seal the top of the bag with a rubber band. Your seed will germinate in one to two weeks. You can remove the planter from the germination bag one week after your seed sprouts. You want to allow the soil surface dry slightly between watering.

Growing On

When planting your watermelon outside, you should choose a location that will provide plenty of sun light. You can prepare the planting space by amending the soil with compost and mixing in an organic fertilizer. Plant your melons outside after they are well established, and all fear of frost has passed. To ensure adequate room, space your plants 3 feet apart in the garden. Watermelons need plenty of water as they grow. However, do not overwater them close to the time of harvest or they will not be as sweet. You can produce magnificent plants and will be harvesting the Sugar Baby Watermelon you grew in as little as three months! The soil side of a watermelon will turn from white to pale yellow when the fruit is ready for harvest. Do not overwater the plants close to the time of harvest, or else the sugar content of the fruits will be reduced and they will have hollow craters inside.

Strawberries are not true berries! They belong to the rose family and are actually classified as aggregate fruits, with their seeds on the outside. The average strawberry has around 200 tiny seeds on its exterior. They are one of the first fruits to ripen in the Spring. Strawberries are delicious and nutritious fruits that many people enjoy eating. Strawberries are rich in vitamins and minerals, like vitamin C, which helps keep our immune system strong, and fiber, which helps our digestive system work well. Strawberries are not only tasty but also good for our hearts. They have natural compounds that can help keep our hearts healthy. The heart-shaped appearance of strawberries makes them a popular symbol of love and romance. Strawberries have been enjoyed for centuries. In ancient Rome, they were considered a symbol of prosperity, peace, and perfection.

Mini Melon Cantaloupes are a member of the melon family and are known for their sweet and juicy taste. Originally hailing from Africa and Asia, these fruits have a storied history of trade and exploration that brought them to various parts of the world. With their distinct netted skin and vibrant orange flesh, cantaloupes are not only delicious but also packed with nutrients, particularly high levels of vitamin A for healthy eyesight and skin. Their significant water content makes them an excellent choice to stay hydrated, especially on hot days. Apart from their nutritional value, cantaloupes have been enjoyed for centuries in diverse culinary creations, from fruit salads to smoothies, and their vibrant color and aroma have made them popular for decorative displays.

Sugar Baby Watermelon plants are fascinating and fruitful members of the melon family. These compact and sturdy plants produce small, round watermelons that are known for their sweet and juicy flavor. Native to Africa, Sugar Baby Watermelons have become a popular choice in many parts of the world due to their manageable size and delicious taste. As the name suggests, Sugar Baby Watermelons are prized for their high sugar content, making them a delightful summer treat. Each watermelon is typically about the size of a basketball and features a thin, dark green rind that contrasts beautifully with the vibrant pink or red flesh inside. Watermelon flowers attract bees, butterflies, and birds. These fruits also contain vitamins, minerals, and other compounds.

Individual and Group Experiments:
Either every student can do every experiment, or students can break into groups of three and observe the other group lessons.

How do greenhouses work?
Fill two of the empty planters with water. Place them next to each other in the sun (either on a windowsill or outside). Enclose the first planter in an included germination bag, and make sure it's sealed. Leave the second planter open. Leave the planters in the sun for about an hour. Then, remove the bag from the first planter and feel the water in both planters. Which planter has warmer water? Why? How would having the bag on the planter affect the planter?
Greenhouses work by creating a sort of micro-climate where all the gasses are trapped within an enclosed area. This allows for water to be retained, climate to be managed in terms of temperature, and wind speed, discourages the spread of pests and plant disease and more. It also creates an environment conducive to sprouting.

How do plants breathe?
Water the plants in their containers. Put the containers inside germination bags and make sure both are tightly sealed. Set the plants near a sunny window where they will get good light. After one day, check the plants. There should be drops of water inside the bags. Where do you think this water came from?
All plants breathe, taking in carbon dioxide and giving off oxygen. They take in sunlight and carbon dioxide and through photosynthesis, produce food for themselves, and give off the oxygen. When the terrarium is sealed, the moisture in the soil condenses and will turn back into moisture and run down the sides, effectively watering the plants. The water in the terrarium is called condensation.

Do plants sprout at different rates?
Plant the fruit seeds in the planters according to the above directions. Make sure to water the seeds and place the planters in a sunny area. Observe the seeds for the next week or two. Which seeds sprout fastest?
Plants do sprout at different rates. Germination is the beginning of a plant's life cycle. Seeds sprout at different rates because every type of seed is different. Also, different seeds require different conditions to sprout. Some seeds need cool and dry conditions, whereas other seeds need high humidity and warmth to sprout.

Does humidity have an effect on how quickly seeds sprout?
Plant one type of seeds in the planters according to the above directions. Place the first planter inside a germination bag and seal the top with a rubber band. Put it on a sunny windowsill. Put the second planter on the windowsill beside the first, but do not put a germination bag around this one. Observe the planters for the next week. Does one planter sprout faster than the other? Is there any condensation in the first planter? Does humidity make the seeds sprout faster?
Most plants need humidity in order to sprout. The easiest way to provide humidity is with some sort of sealed enclosure. The unsealed container will dry out more quickly and there will be less of it trapped in the air.

Discussion Questions
What is photosynthesis? How do plants manufacture food? What are the two main components a plant needs to manufacture food?
The basic raw materials utilized by plants in manufacturing food are water and carbon dioxide. The water is taken in by the roots and carbon dioxide by pores in the leaves. From these ingredients the plant makes a simple sugar that is converted into more complex sugars, starches, proteins, and fats. All life depends on this putting together by light, which is what photosynthesis means. The light, solar energy is captured by the plant and transformed into chemical energy contained in the sugar. In photosynthesis, water is split apart into hydrogen and oxygen. The oxygen is given off as a byproduct, and the hydrogen is combined chemically with the carbon dioxide to produce the simple sugar, which easily dissolves and is transported through the plant.

Do we need plants to live? Do plants give off oxygen? What do we give plants and what do they give us that are necessary for survival?
Without the vast amount of vegetation in the world, animal life as we know it would not exist. Plants are the ultimate source of the food we eat and the oxygen in the air that we breathe. In the process of photosynthesis, green plants form simple sugars in the presence of sunlight. As part of the reaction, they release oxygen into the atmosphere; this is what we need to survive. In a never-ending cycle, we in turn exhale the carbon dioxide that plants require for photosynthesis.