

The PBS Kids logo, featuring the letters 'PBS' in a circle above a stylized face with large eyes and a wide smile, with the word 'KIDS' below it.

KIDS

The logo for the PBS Kids show 'It's a Big Big World', featuring the text 'It's a BIG BIG World' with a globe in the center of the word 'BIG'.

## See how they grow!

**Curriculum Idea:** Plants, like animals and people, are living things that grow and change. Different plants have different needs for sunlight and water.

**Related Episode:** So Long Planty, Growing Pains, Where Have All the Berries Gone?

**Ages:** 4-6

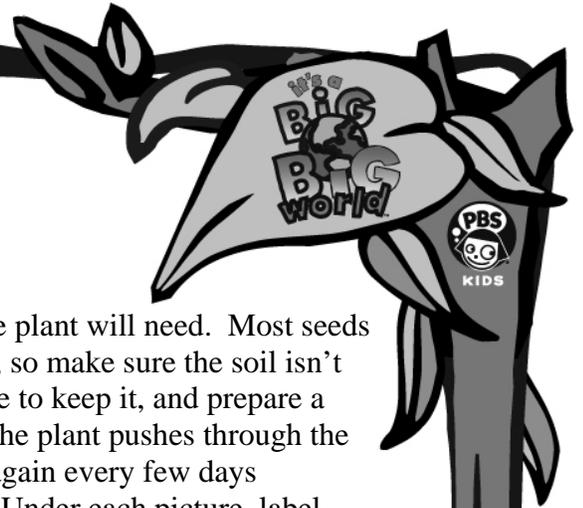
**Subject:** Biology, Botany

**Skills:** Planning, Observation, Care of plants, Comparison

**Materials:** Containers for growing plants, dirt, seeds or seedlings, paper, pencils/crayons/markers

**Directions:** Talk with your child about taking care of plants. Different plants have different needs, but most need sunlight and water to grow. Plants go through many changes as they grow. Tell your child that you are going to plant seeds or seedlings so she can learn what they need to survive and how to care for them, and observe some of the exciting changes they go through.

First, together select seeds or seedlings. You may want to choose ones that have a short germination period so your child sees quick results, and ones that are fairly hardy and yield good-sized plants. Some seeds to consider include bean, wheat, basil, sunflower, pumpkin, and squash. Have your child draw a picture of what the seed looks like before it is planted. If you are planting a large seed, such as a bean seed, get a few extras and open one up so your child can see what is inside the seed. (You may want to remind your child that just like she shouldn't put any plants in her mouth unless a grown-up lets her know they are safe, she shouldn't eat seeds unless she knows they are safe. Some seeds, like pumpkin and sunflower, may be a good snack, but other seeds are poisonous.)



Then, together read or research how much sunlight and water the plant will need. Most seeds will germinate best when they receive a lot of oxygen and water, so make sure the soil isn't too compact. Plant them in a container, find an appropriate place to keep it, and prepare a schedule for how often she will need to water the seeds. When the plant pushes through the dirt, have your child draw a picture of the first sprout, and then again every few days (depending on the type of plant and how quickly it is growing). Under each picture, label how many days it has been since the seeds were planted. As the plant continues to grow, replant it outdoors or in a larger container.

**Talk About It:** Look at all of your child's drawings and talk about how the plant grew. Talk through the timeline with her. For example, on the first day, this is what the seeds looked like; on day six, this is the sprout we had; on day 10, you observed the first leaf; and by day 15, look at all of the leaves! Ask your child what similarities and differences she sees in each of her pictures. One thing she may notice is that the first two leaves are often large and round because they were part of the seed, but the later leaves have a different shape. The first set of leaves often shrivels up and is not part of the mature plant.

Discuss how much sunlight and water her plant needed. Talk about other things that can help plants grow: oxygen, pruning, and adding nutrients or fertilizer to the soil. Ask your child questions to prompt her thinking. For example why might a worm tunneling through the soil help a seed grow? Talk about the idea that there are different kinds of seeds that grow into different kinds of plants. Ask her to think about how the seeds she planted look the same or different as other seeds she is familiar with – such as the seeds in an apple or orange.

**Take it Further:** There are many variables that can impact how seeds grow, including sunlight, water, and temperature. See if more or less sunlight or water makes a difference in how quickly your child's seeds grow. Have her plant seeds in several containers and place them in areas where they will get different amounts of sunlight. Give them all the same amount of water and have your child track their growth. At the end of the experiment, look at all of the pictures with her and see if having more or less sunlight made a difference in how the plants grew. Repeat the experiment, but this time, give all of the plants the same amount of sunlight, but different amounts of water.

Start a garden with your child, either in a plot outside or in an indoor container. Try to select herbs, fruits, or vegetables that your child can try to eat after they have matured. Together, look at the requirements for sunlight, water, and soil, and pick plants that are appropriate for your planting location. Talk about how much water they will require and set up a schedule for watering and other care, such as fertilizing or pruning.