Nuts about Seeds

Grades 1-4 45min – 50min

Learning Objectives:

Learn that seeds come in many sizes and shapes.
Inside a seed is everything needed to make a new plant.
Seeds have various dispersal methods.

Background:

Seeds are complete packages of life for plants. They contain both the young plant embryo and a food supply to start the growing process. Most seeds are covered with some kind of fruit. It can be juicy like an orange, or dry and leathery like a hickory nut. Some seed coats are hard to crack, while others are easily peeled away. Seeds are the result of pollination of flowers, whether they occur in weeds, trees or any other growing plant type. Dispersal methods vary greatly, but each method is intended to move the seed away from the parent plant.

Materials: provided by park staff, but you can bring in other seeds and seedlings as long as they are not invasive species.

2 Silk flowers and one fake bee
Seedling such as oak that has the acorn attached: use what is in season and easily available.
Several Hickory nuts that were eaten by flying squirrels.
Container with a variety of seeds small and large i.e. sunflower, pumpkin, hickory, peach, etc.
Cards with pine/sweet gum/maple seed displayed
May bring seeds within a fruit or vegetable. Ideas: small pumpkin if it is around Halloween. Or any other winter squash. Citrus fruit of any kind with seeds. Knife or nutcracker may be useful.

Greet the group with the question: What did you have for breakfast? Which of those foods were seeds or came from seeds?

Stop the group by a Hickory or Oak tree in the picnic area. Ask how the tree came to be there. It grew from a hickory nut or acorn a long time ago. Show the seedling and tell them that in every kind of seed lives a tiny embryo that will grow a shoot (top plant) and a root. Discuss how a hickory nut or acorn forms. (It starts with pollen landing on the female flowers and causing a seed to form). A lot of trees are planted by squirrels that burry nuts. These nuts don't taste good to us. What nuts do taste good? Ask each child to name a nut, seed or food with a seed or pit inside that is not eaten.

Point out a gathering spot. (The concrete patio behind the Big Cabin or amphitheater are good choices). Show them a sweet gum ball or pinecone. Tell them to find one then come back and sit at the gathering spot.

Show the seeds that fall out and explain that in addition to being able to grow a brand new tree, the **nuts are good food for wildlife**. Tell the students to find one whole and one broken hickory nut and come right back. See how some of them are chewed open and the nut is gone.

What animal did this? Squirrel. Show the difference between a grey squirrel broken nut and a flying squirrel hole in a nut. Also point out that nuts that are broken in half cleanly may have either rotted and split open or the sprout of a new tree split it open.

Seeds come in many shapes and sizes. Pass around a dish with different seeds you have brought to show the wide variety of sizes and shapes. Some of them had or still have a fruit covering them. Point out the dry husk covering some of the hickory nuts. If you have brought a fruit or vegetable, open it and show the seeds inside. Many fruits are poisonous to people even though animals may eat and enjoy them.

Walk to where something is blooming.

What part of the plant do seeds come from? They come from some sort of flower that has been **pollinated**. Insects like bees and butterflies are good pollinators because they fly from flower to flower carrying pollen on their bodies. For many plants, bees and other insects are needed to bring the pollen from flower to flower. Have two students hold the silk flowers and "fly" the bee from flower to flower transferring pollen while drinking nectar. **Seeds form in the flowers** and ripen or mature after the flower has withered away. Some plants make one big fruit that holds all the seeds from that flower. Examples are oranges and apples. Others have lots of separate seeds that fall or float away one at a time. Examples are dandelion and sunflowers.

Seeds have many ways to travel. A parent plant needs the seeds to find someplace new so that there is enough space to grow. Just like when children grow up they need to have a way to leave home. Name some forms of transportation that people use to travel. Now let's think about how seeds travel. (While moving to a grassy area, stop several times and introduce a seed traveling method). Some seeds have fluffy parachutes or wings that catch a breeze and float away. Others are heavy and roll away or animals collect them and store them for later. Many of these stored seeds either get forgotten or sprout before the animal gets back to eat them. Some seeds are swallowed by birds and other animals when the fruit is eaten, and then pass through the digestive track and come out the other end undamaged. Some have spines or sticky fuzz that attaches to passing animals and people and fall off in another place.

Dandelion in the wind activity

You are all going to pretend that you are dandelion seeds. Ask a parent to stand in the middle and all the kids bunch up around her holding each other's hands, or touching the parent around the waist. This is a dandelion flower and the students are the developing seeds. Dandelion seeds have fluffy parachutes attached. When I blow across you, let go and pretend to float away with your hands held high up over your heads.

Let's review; we learned where seeds come from, what some of them look like, and how they travel.

Parts of this lesson were adapted from a Lesson Plan used by the Brandywine Valley Association, West Chester PA.