

# Pre-Visit Activity #2

## Move

# Seeds On the

### Curriculum Links:

Grade 3

Science

Competency Goal 1: The learner will build and understanding of plant growth and adaptations.

- 1.01 Determine that the quantities and qualities of nutrients, light, and water in the environment affect plant growth.
- 1.02 Observe how environmental conditions can determine how well plants grow and survive in a particular environment.
- 1.03 Analyze plant structures for specific functions:
  - Growth
  - Reproduction
- 1.04 Determine that the number of seeds a plant can produce depends on variables such as light, water nutrients, and degree

Location:  
Classroom

Group Size:  
30 students  
(entire class)

Estimated Time:  
Approx. 1 hour

Materials Needed:

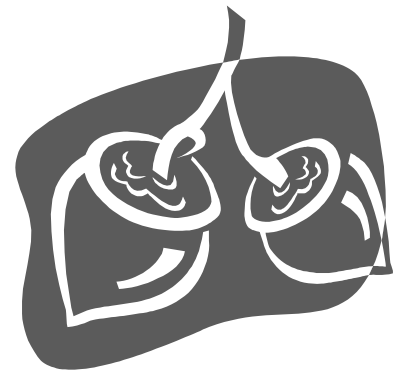
- § Dried beans
- § Materials for seed construction (everyday objects such as: straws, string, toothpicks, balloons, tape, paperclips, construction paper, cork, Styrofoam peanuts, glue, Velcro, feathers, rubber bands, etc.)
- § Copies of the Inserts provided

Major Concepts:

- § Different plants disperse their seed in different ways.
- § Seeds of any plant require certain things to grow.

Objectives:

- § List five different seed dispersal mechanisms used by plants.
- § List four different things that seeds need in order to survive.
- § Create your own seed with a specific dispersal mechanism using everyday items.



## Educator's

### Information:

In this activity, students will learn what seeds need in order to grow. They will also discover the various dispersal mechanisms that plants have adapted to ensure their seeds obtain these needs. Methods of dispersal used by plants include being carried by the wind (dandelion, milkweed), by water (coconut), hitchhiking on an animal (burs), self propulsion (jewelweed), and being eaten and deposited elsewhere by an animal (apple). Finally, students will create their own seeds, using everyday items, which can disperse using a specific mechanism.

### Instructions:

- § Divide students into groups of 3-5.
- § Ask the students what they had for breakfast. What does what they ate have to do with seeds? They will see that everything they eat, and even a lot of what they wear and use everyday, begins as a seed. (Example: bacon comes from pigs, pigs eat grain,

grain comes from a seed)

- § At this point, the student should understand that we all depend on seeds. Ask the students if they know what seeds depend on? Possible answers: soil, water, sunlight, nutrients (nutrients are within the soil and different soils have different amounts of nutrients).
- § Introduce the students to the idea of seed dispersal using the idea of space. For example, you could ask the following questions: What would happen if they never moved away from home. What if when they had kids, they stayed in the house and when their kids had kids they stayed in the house too? Eventually the house would not be big enough to support all of those people. Seeds are the same way. If all the seeds get dispersed right next to the parent plant, the new seeds won't have enough space to grow. Since plants cannot move, they have adapted

special ways to disperse their seeds.

- § Have the students use the cards provided to think of different ways plants could disperse their seeds.
- § Play a matching game with the students using the pictures of the plant seeds and the method of dispersal.
- § Review with students the four things seeds need to survive as well as five dispersal mechanisms they have learned about.
- § Hand each group a card from Insert 3. Each group will have 10 minutes to make their own "seed" using the items provided and using the specific dispersal mechanism that they have been given.
- § After they are finished, have each group stand up and explain their seed and how it disperses.



What is a seed? A seed is like an egg of a plant. It contains the baby plant and some nutrients to help get it started growing. Plants are living things, and so they must reproduce. There are many kinds of seeds. Think of some examples on your own right now. You may have come up with apple seeds, acorns, sunflower seeds, and many others.

Seeds need water, sunlight, nutrients from the soil, and space to grow, but they cannot walk around like an animal to find these things. The parent plant must have a way to spread out, or disperse, its seeds to give them the best chance of germinating.

Different plants have different ways of dispersing their seeds. There are five ways that plants may disperse their seeds. Each plant usually uses only one of these methods.

The first way seeds might be dispersed is by the wind. Have you ever picked a dandelion

and made a wish as you blew on it? Those fuzzy things that you blow away are actually the seeds of the dandelion. By blowing on them, you have helped disperse them!

Another way seeds can be dispersed is by being surrounded by a yummy fruit. Many animals will come eat blackberries that grow in the wild. Eventually, these animals will go to the bathroom and the seed will be deposited. This is a way for the seed to travel quite a long way from its parent plant, depending on how far the animal travels.

Some seeds can float on the water. Trees with seeds that can float grow near water so that when the seed falls from the tree, it floats away. The largest seed in the world, a coconut, can float on the water to a new place where it can germinate.

Some plants have a way of shooting their seeds away, almost like a slingshot! If you have ever touched the

seedpod of jewelweed, you have seen this in action. Jewelweed seed capsules are almost like a coiled spring. When the wind blows on them, or when somebody touches them, the spring uncoils and the seeds go flying!

The last way seeds can disperse is by latching on to a person or animal. That is why these seeds are often called hitchhikers. Have you ever waked through a field and come out with burrs stuck to your clothes? Burrs are seeds, and when you pick them off your clothes and toss them on the ground, you have helped them disperse.

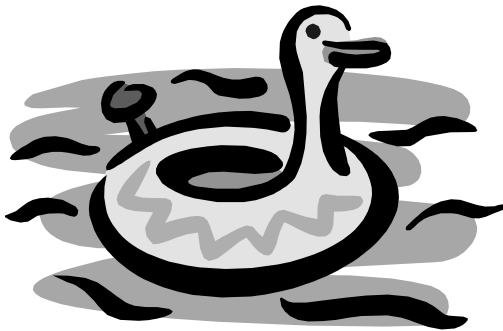
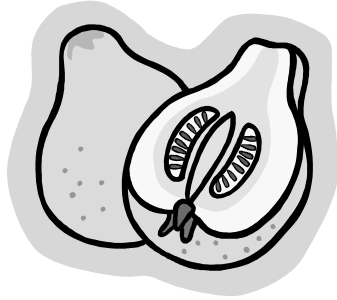
Next time you are taking a walk, look at a nearby tree or plant and see if you can figure out how it disperses its seeds!

# Insert #1      Kinds of Seed Dispersal



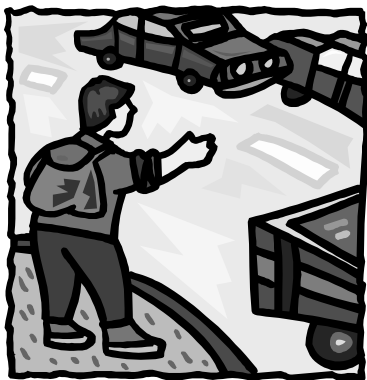
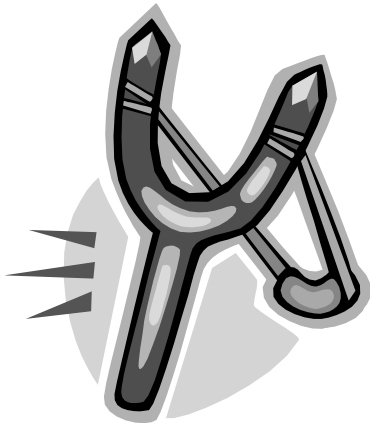
How are some seeds like this kite? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What does this piece of fruit have to do with a seed? \_\_\_\_\_  
\_\_\_\_\_



How are some seeds like this inner tube? \_\_\_\_\_  
\_\_\_\_\_

How are some seeds like this slingshot? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



How are some seeds like this hitchhiker? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Insert #2 Dispersal Mechanisms of

Wind Carried

Dandelion

Milkweed

Maple trees (helicopters!)

Cattail

Thistle

Water Carried

Coconut

Lotus

Arum

Hitchkickers

Stickseed

Cocklebur

Sandbur

Wild barley

Self-propelled

Jewelweed

Members of the pea family

Wild geranium

Eaten

Oak trees (acorns)

Black cherry

Raspberry

Blackberry

Poison Ivy (although I wouldn't recommend it)

Solomon's seal

Jack-in-the-pulpit

<p>M ake a seed that w ill float on w ater for at least five m inutes.</p>	<p>M ake a seed that w ill attract an anim al.</p>
<p>M ake a seed that has a m echanism to throw the seed at least tw o feet from the parent plant.</p>	<p>M ake a seed that can hitchhike on an anim al for at least ten feet.</p>
<p>M ake a seed that w ill float on the w ind.</p>	<p>M ake a seed that m ust spread itself w ith no help from w ind, w ater, or anim als.</p>