

Kindergarten – Plants start from Seeds – planting peas – 55 minutes

Date – late March to mid April

Objective: Students will learn what a seed is, the parts of a seed, how to plant a pea seed while considering what a plant needs to grow.

Background:

A seed can be as big as a coconut or smaller than a poppy seed. It can be smooth, spiny, ribbed, or rough. It can drift, float, drop, or hitchhike. The different shapes and sizes have evolved due to the success of their design in protecting the embryo, providing a food supply, and dispersing the seed. All seeds have a hard, durable seed coat to protect the embryonic plant and its food supply inside. Some seed coats are so tough that they must be worn away by digestive juices, exposed to fire, or rolled in the stream bed before they can sprout.

A good rule of thumb when planting any seed into the garden is plant at a depth two times the size of the seed. And an interesting way to measure in the garden and provide experience with estimation is by using body parts. For instance, making a hole in the soil with your finger up to the first knuckle is about the right planting depth of ½ inch. Each pea seed can be planted a hand's width apart or about 3 inches.

Station 1 – Investigating seeds – labeling the seed parts – 25 minutes if done as a whole class

Preparation:

- A day before the lesson, soak large bean seeds in water – enough for each student + a few extra.
- Gather other seed examples, un-soaked, like corn, sunflowers, peas, squash and pictures of each plant or fruit/flower.
- Bring a copy of the bean seed diagram and the bean growth illustration.
- Gather magnifying glasses if available. Some classes have these and some school gardens have these.

Action:

1. Introduce yourself and give a brief description of what you will be doing.
2. Ask students to think about what they know about seeds and share for one minute with their neighbor.
3. Show students the bean seed and ask what kind of plant will this grow? Explain that it can only grow a bean plant.
4. Show students some of the other seeds and ask what plants they will grow. Use the pictures to help students ID the seed if needed.
5. Ask students how does a seed grow into a new plant? Take all answers. *They will germinate when they get wet from the water and have a warm enough temperature.*
6. Show the picture of a progression of a seed growing. How can a seed do all of that? Have you ever looked inside a seed?
7. Show the students the diagram of the seed and the name the different parts. (embryo or baby plant, endosperm or food for the baby plant and seed coat). Let's look inside this bean and see how it can start to grow.

Kindergarten – Plants start from Seeds – planting peas – 55 minutes

8. Give each student their own bean to open and view. Help them open the seed and identify the embryo and endosperm. Explain what each part does and how the seed coat protects the seed while it is cold and dry; how the seed uses the endosperm as energy to get its roots in the ground and stem and leaves p to the sun to start making its own food. Refer to the diagram of the seed.
9. Ask students if anything about the seeds surprised them? What was inside the seed? Are all seeds the same inside? Will all bean seeds become bean plants? What do the seeds need to grow into adult plants?

Split the group into two to go outside if you have another volunteer. If not, just take one group at a time out to plant.

Planting Peas – 15 minutes

Preparation:

- Prepare the garden where peas will be planted. Weed the area, loosen the soil and mark the area where peas will be planted.
- Gather sequence of planting cards – cut out and shuffled
- Gather pea seeds, trowels, a ruler, watering can or bucket of water with rain makers (plastic yogurt container with holes punched in the bottom)

Action:

1. Show the students the “planting a seed sequence” cards and have them put them in order. Does everyone agree with the sequence? So what is the first step?
2. Other than using a trowel or shovel, what else could we use to make a hole that is 2 times the size of our seed? (a stick, or your finger). In fact, this may work better. Estimate the depth of the planting holes by measuring a place on the finger. (to the first knuckle?)
3. What’s the second step? Make your planting hole to the depth you measured. Place a seed in your hole. Now what’s the last step? Have student take turn watering their seed.

What does a seed need to grow? The Seed Song – 15 minutes

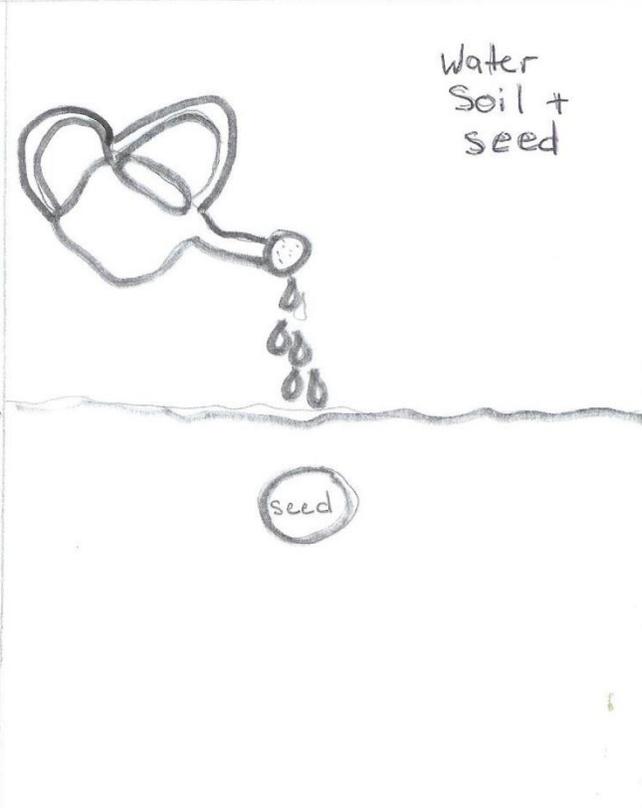
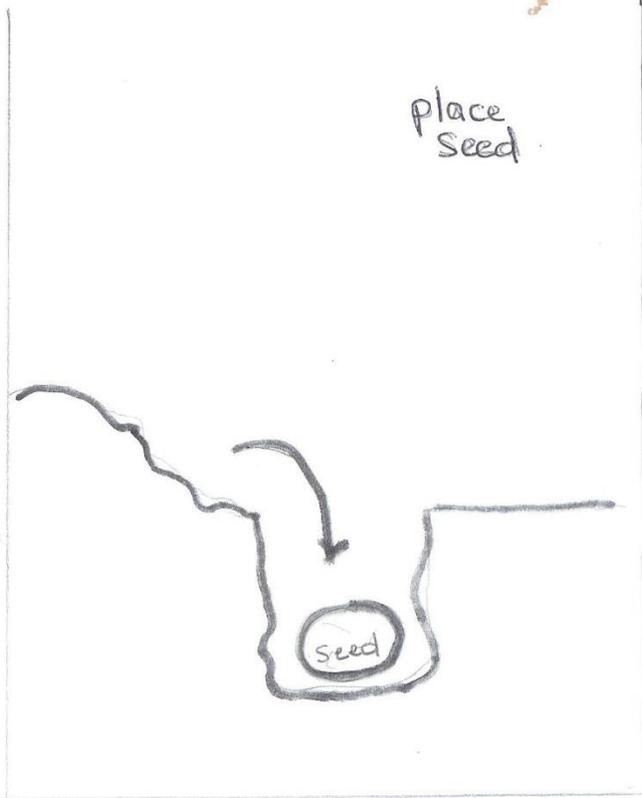
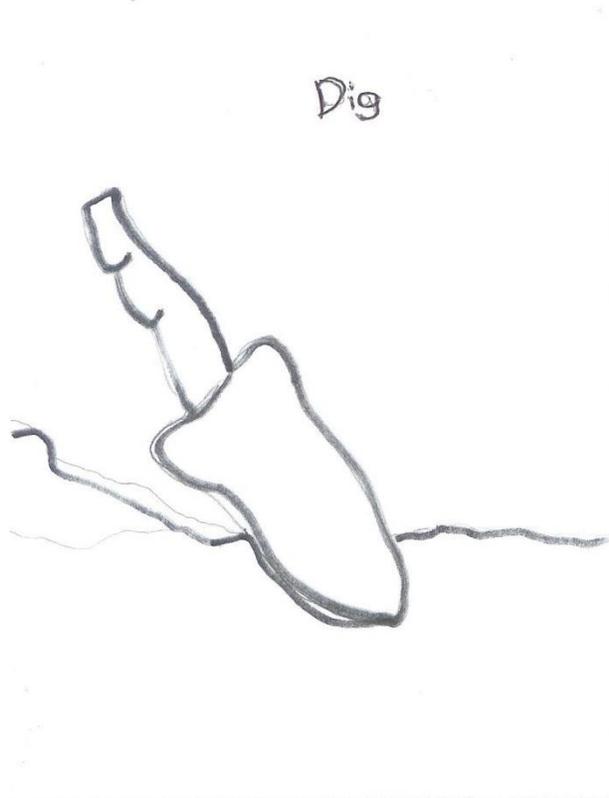
Preparation:

- Learn the seed song and print a copy for yourself
- Gather and have in an envelope: pictures of the sun and water and a ziplock with air and another with soil.

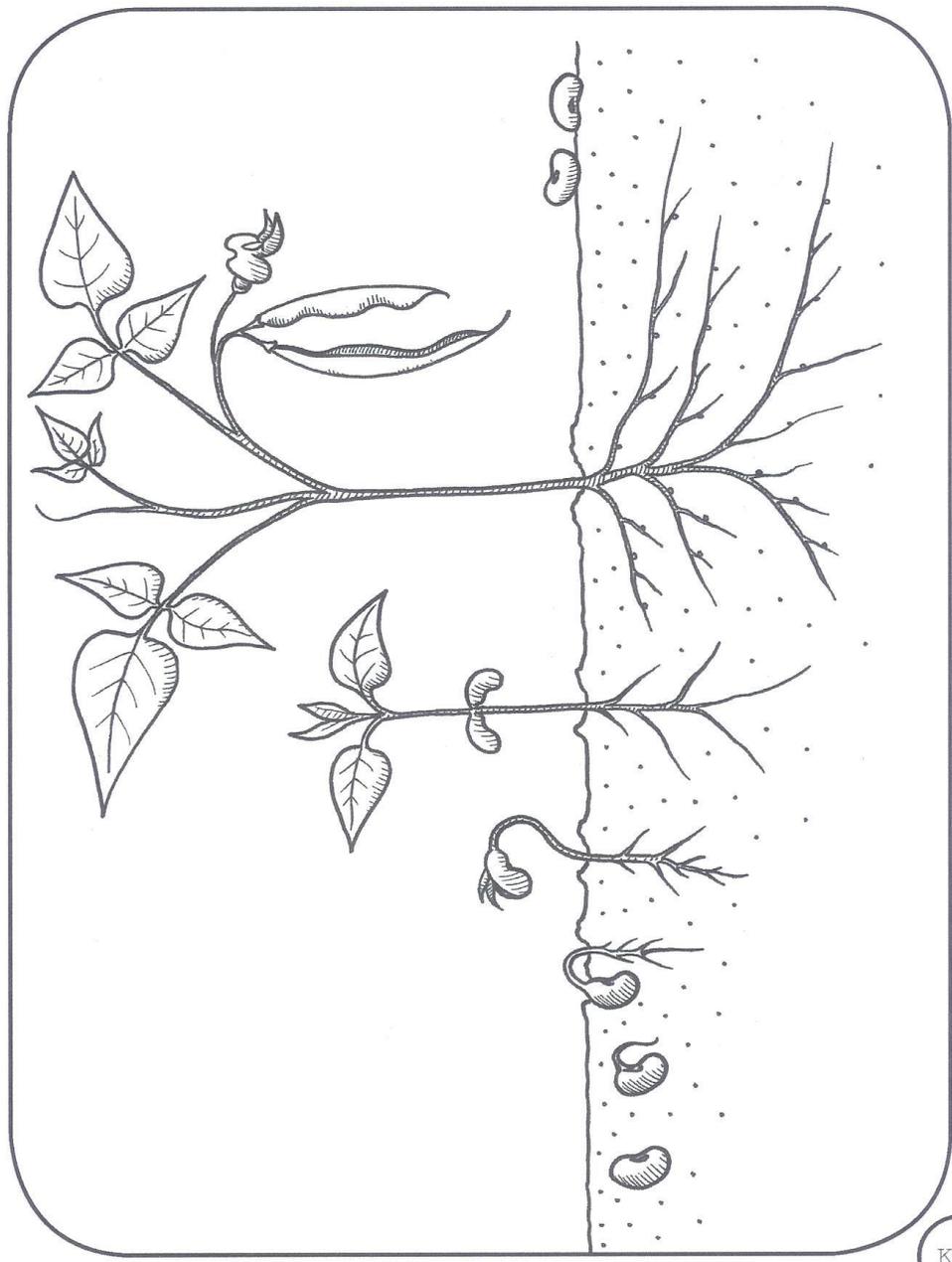
Action:

1. Ask students what a seed needs to grow into an adult plant? (sun, water, air, nutrients from the soil and space) Just like us. As student answer the question, give them the pictures or containers of things plants need to grow.
2. Tell everyone they are going to learn a seed song that also has some action.
3. Have fun perfecting your seed song to the tune of I’m a little tea pot.

Kindergarten - Plants start from Seeds - planting peas - 55 minutes



Kindergarten – Plants start from Seeds – planting peas – 55 minutes



eat.think.grow.
Portland Partners for School Food and Garden Education

KS1