

Parts of a Seed

*A lesson from the New Jersey Agricultural Society
Learning Through Gardening program*

OBJECTIVES: The student will be able to:

- identify the seed as a complete package to form a new plant – just add water, soil, and sun
- describe and locate the different parts of a seed
- identify roots as the part of a plant that grows first



GRADES: K-5

PREPARATION:

Soak lima beans in water overnight. You can use a bag of lima beans purchased from the grocery store; you do not need to purchase packages of lima bean seeds.

MATERIALS:

soaked and unsoaked lima beans for each student
sharp knives (for adult use)
baggies
“Seed Parts” worksheet

PROCEDURE:

Tell students that seeds are a tiny form of “instant plant.” What do we need to add? (Water, soil, and sun for heat).

Pass out one soaked lima bean seed and one unsoaked seed to each student. Ask them to lightly tap the unsoaked seeds on their desks. What do these seeds remind them of? (Rocks, pebbles.) Do they look like they are alive? Ask students to look at the soaked seed. How is it different from the unsoaked seed? Tell students to handle the soaked seeds carefully as they are fragile. (The seed coat is starting to slip off of the soaked seed.)

Talk about how the *seed coat* protects the inside of the seed. The tiny plant or *embryo* inside the seed contains everything needed to form a new plant: roots and the first stem and leaves. The larger area around the embryo is the stored food that the plant needs to get started in life.

Ask students to pick up the soaked lima bean and place it between their thumb and forefinger. Then tell them to rub their fingers gently back and forth across the bean. Do they feel something happening? The seed coat should become loose and fall off. When this happens the whole bean may fall apart. Tell students this is fine, but they should keep all the pieces of their seed in front of them. If a student is having difficulty removing a seed coat, usually rubbing a little harder will make it come off.

Next, ask students to look at the seed pieces in front of them. Do they see something that looks like a little tail? Help students until everyone finds this small piece. Ask them what they think this piece might be. It is the baby plant. Does it look like a plant? Next ask them to look at the rest of the seed pieces. What do they think they are? They are the stored food. Most of a seed is stored food.

Note: Sometimes a student will not find a baby plant inside a seed, as it may not have developed. If this happens, just give the student another seed to dissect.

Ask students the order in which the parts of a plant grow from a seed. They should respond with roots, then stem, then leaves. When a plant's leaves open, it is now able to make food for itself.

Ask students what the seed needs to grow into a plant. They will probably respond with soil, water, and sun. Ask if a seed needs light to grow. If the students answer yes, ask where seeds are usually planted. There is no light underground. Seeds need *warmth* from the sun to grow, not light.

Ask students to complete the "Seeds Parts" worksheet.

EVALUATION:

Completed worksheet on parts of a seed with each part located.

EXTENSION:

Add a language arts component to your lesson by reading one of these books:

A Seed is Sleepy, by Dianna Hutts Aston

A Fruit is a Suitcase for Seeds, by Jean Richards

Flip, Float, Fly, Seeds on the Move, by JoAnn Early Macken

From Seed to Plant, by Allan Fowler

From Seed to Plant, by Gail Gibbons

The Tiny Seed, by Eric Carle

One Little Seed, by Elaine Greenstein

New Jersey Learning Standards

Science: K:LS1.C 1:LS1.A 2:LS2.A 3:LS1.B 4:LS1.A 5:LS1.C

SEED PARTS

A seed holds a tiny new plant (embryo) inside. The new plant is surrounded by a supply of food. It is covered by a seed coat to protect it and its food until the plant begins to grow.

Label each seed part:

Color the seed coat red.

Color the leaf green

Color the root brown

Color the food yellow

