

How a Seed Becomes A Plant (BP)

Science or Nature Source

Materials Needed:

Light blue underlay cut to fit 8 inches longer than brown ground piece,

Felt pieces for seeds and plants

Pictures representing foods from plants.

Peat pots

Planting medium

Seeds for planting

Teacher Information (not for reading aloud to the kids – for your review)

Seed

A plant begins its life as a seed. Inside the seed are all of the parts that it will need to form a new plant. Seeds are scattered by animals, insects, and the wind. They fall and germinate (sprout) at a distance from the parent plant to increase the chance for survival of the new plant. At a distance, it does not have to compete with the parent plant for food and water.

Root

When the seed absorbs warmth, moisture and oxygen, the root appears. This signals that germination of the plant has begun. The roots grow down toward the ground to search for water. While the plant grows, the roots form the foundation that will hold the adult plant steady.

Stem (and Seed Leaves)

The stem and seed leaves, or the shoot, is the first part of the plant that will break the surface of the soil and start to absorb nutrients from the sun. Sometimes you can tell what kind of plant it will be from the stem and seed leaves, sometimes you have to wait for the true leaves. The stem grows upward and bends toward the sunlight. This activity stimulates the plant, and growth toward maturity speeds up.

First True Leaves

As the stem extends, the first leaves develop to absorb energy from the sun more efficiently. At this stage, the development of the plant is nearly complete. The green in the leaves interacts with sunlight, and a complex biological process called photosynthesis occurs. Photosynthesis is the way green plants turn sunlight into nourishment and produce oxygen.

The Plant

Adult plant interaction with sunlight, water and the nutrients in the soil allows it to flourish and produce the elements that are essential to sustain our planet. Plants are also an important part of the food chain, providing the nutritional building blocks for all higher life forms. Plants can live without animals, but no animal can live without plants. Adults plants produce seeds that are scattered away from the parent plant to germinate and continue the plant life cycle.

Lesson 1 Seeds into Plants

Presentation:

Hmm, I wonder what this could be. It's blue. It could be water, or sky, or.....
That's all we have to get ready.
This is a seed.

Hold up seed from basket..

Most plants make seeds. The beginning of a plant is curled up inside each seed. All seeds grow into the same kind of plant that made them. Food is stored inside the seed, too. The seed has a seed coat on the outside to protect it. A seed will not sprout until certain things happen. First it must be on or in the soil.

Lay seed down on blue underlay, then take out long piece of brown ground and stretch out with slightly curved edge up to sky and bottom edge level with edge of underlay.

Then it needs rain to soak the seed and soften the seed coat.

Place clouds above seed on blue underlay.

When the sun shines and warms the ground, the seed coat breaks open and the seed begins to grow.

Place sun to right of clouds.

This is called germination. A root grows down into the soil.

Place second seed with root to the right of first one.

The root takes in water and minerals from the soil for food.
Up grows a shoot.

Place seed with roots and shoot to the right of second one.

Green leaves grow up from the shoot toward the sun.

Place seed with roots and small leaves next.

The plant grows bigger and bigger. The leaves make food for the plant from the water and minerals in the soil, the sunlight, and the air all around the plant. This is called photosynthesis.

Point to the soil, the clouds, and the blue underlay as you speak.

Finally, the plant is full-grown. Buds on the plant open into flowers where new seeds will grow.

Place last plant with buds next.

Many of the foods people eat are seeds, fruits and pods. They are full of nutrition, vitamins, and minerals, and they are tasty, too. Can you think of some of the foods we eat that come from plants?

Flowers

Many plants grow flowers. Flowers are where most seeds begin.

Place the flower at end of the row of seeds.

A flower is made up of many parts.

There are the Petals, the Sepal, and the Stem.

In the center of the flower is the Pistil.

The sticky part at the top of the pistil is the Stigma.

The parts of the flower around the pistil are the Stamens.

Stamens make yellow powder called Pollen.

At the bottom of the pistil are tiny egg cells called Ovules.

Before a seed can begin to grow, a grain of pollen from the stamen must land on the stigma at the top of the pistil of a flower like itself.

Pollination happens in different ways. Often, wind blows pollen from flower to flower.

Bees, other insects and hummingbirds help pollinate, too. While they visit flowers for their sweet juice, called nectar, pollen rubs onto their bodies.

Place bee above flower.

Then they carry the pollen to another flower where it comes off onto its pistil.

Point out each part of the flower as you say the next section.

If a pollen grain from a flower lands on the pistil of the same kind of flower, it grows a long tube through the pistil into an ovule. This is the beginning of a seed.

The seed grows inside the flower, even as the flower begins to die. As the seeds become bigger, a fruit or pod grows around them. The fruit or pod protects the seeds. When the fruit or pod ripens, it breaks open. The seeds are ready to become new plants.

Optional: Have a basket of various seeds and name as you take out.

Wondering Questions

I wonder if you have ever found a seed?

I wonder if you have ever eaten a seed?

I wonder if you have ever grown plants at your house?

I wonder what kinds of foods you eat that come from plants?

I wonder how a seed knows which kind of plant to be?

I wonder if you have felt yourself growing?

I wonder if the Spirit of Love and Mystery that some people call God helps the seed to grow into a plant? I wonder if it can grow without help?

I wonder what kind of flower you like the best?

I wonder why there are so many kinds of plants and flowers and seeds and fruits?

I wonder how a flower knows which kind of flower to become?

As you put away the lesson, name each part before putting in basket.

PLANTING:

- **Work over the trays to contain the soil.**
- **Give each child a pot and a label. They can choose the kind of seed they'll grow. One seed per pot, please.**
- **These plants will be transplanted into our Children's Garden. The kids can come visit and water their plants over the summer. The food and flowers will be shared with elderly neighbors through the Summit Living-at-Home/Block Nurse program.**
- **Water the pots thoroughly.**