

# Seed Germination



When you look at a seed, whether it's a seed for a tree or a flower or a seed that grows food, have you ever wondered how that little seed opens up and becomes what it becomes – a giant tree, a beautiful flower or a delicious fruit or vegetable?

Let's focus on food seeds. They come in different shapes and sizes, but they all open up and grow to create something that we eat – a cucumber, an ear of corn, a strawberry, a watermelon, or many other delicious fruits and veggies. The process of a seed opening, becoming a plant and eventually producing food that nourishes us, is called **germination**.

The unique and interesting part about a seed is that it can start this growing process even without soil, because a seed contains everything it needs right inside of its own shell as long as the environment is right.

## There are three parts to a seed:

**Embryo** – the plant cells that exist and give rise to the new plant.

**Endosperm** – nourishes and provides food for the seedling.

**Seed Coat** – the hard, outer covering that protects the embryo.

The seed coat seems like it's hard and protective, but it actually has tiny holes that allow water and oxygen to penetrate in.

Just as a human embryo contains all of the genetic material that determines our development into full-grown adults, the embryo inside a seed does the same thing.

When enough water penetrates the seed coat, and the temperature range surrounding the seed is optimal, it activates nutrients, or the endosperm, inside the seed that feeds the embryo. Once the embryo starts feeding on the endosperm's protein and starch, the seed swells and breaks through its seed coat to start its growth to become a full-fledged plant. This process of absorption, nourishment and opening up to start the plant's initial growth is called germination.

As the seed bursts through its seed coat, it starts to grow its primary root. This first root is called the **radicle**.

Once the radicle begins its growth process, a sprout starts to grow in the other direction. That sprout is called the **hypocotyl**, which also already has small leaves called the **cotyledons** that are built-in to provide nutrients after the endosperm fades and before true leaves are in place.

Now your sprout is ready for transplanting!



This information was provided by our favorite local gardener at Plant Grow Eat.

For more information visit her at

[www.plantgrowseat.com](http://www.plantgrowseat.com)

