

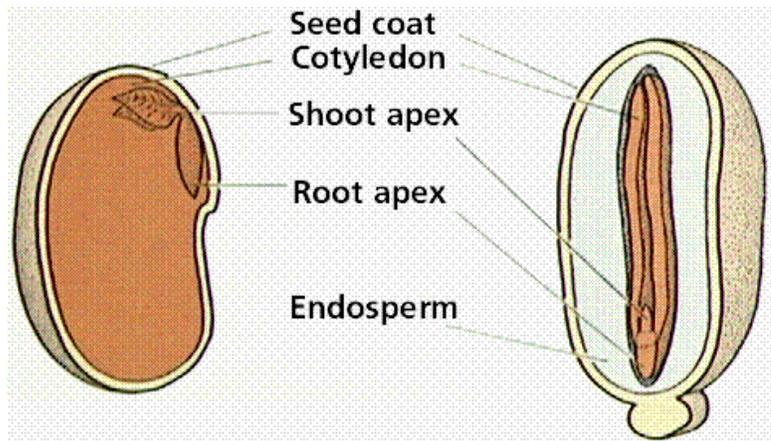
It's Time For Kids and Seeds To Shed Their Coats

By Sharon Vaughan Smith and Christie Nix, Fairfax Master Gardeners

Spring is here! Did you know that seeds have coats? Like the winter coats that keep you warm and protect your skin from the cold, seed coats protect the seeds from the wind, rain, snow and cold weather.

Do you have more than one coat? I bet you do. You probably have one big, heavy coat for when the weather is cold and a coat that is thin and light for when the temperatures are cool but not cold. There are different kinds of seed coats; some are thin, and some are heavy. For example, compare the thin seed coat for a bean with the thick, heavy one on a coconut.

No matter how thick a seed coat is, they all protect the seed from diseases and damage from insects. Seed coats also prevent seeds from being crushed, drying out or freezing. They will prevent the embryo or baby plant from sprouting until the conditions are just right for that plant to grow and survive. Until those conditions are met, seeds will remain dormant or asleep. Some of the signs that signal that it is time to sprout are increased water, oxygen and when the soil temperature warms to the right temperature.



Bean seed

photo: Estrella Mountain Community College

Germination begins when a seed absorbs water and swells. As the seed coat falls off the first root will begin to make its way downward into the soil. This primary root becomes the anchor for the seedling. The seed also contains cotyledons or “seed leaves” which absorb food stored in the seed called **endosperm**. This temporary food supply will provide all the food and energy the seedling needs until it is able to grow true leaves and make food by **photosynthesis**.

What is photosynthesis? This is how a plant uses the energy from sunlight to produce food from carbon dioxide and water. The food produced is **glucose**, a kind of sugar. This sugar is used to help the plant grow strong and even repair itself if it should become damaged. Oxygen is also produced by plants during photosynthesis. The oxygen produced is released into the air and is part of what we breathe for our survival. Don't you think it is cool that plants make their own food and make oxygen that we need too?

As you head outside think about whether you will need your coat. As the weather changes during spring, you may get warmer and take off your coat. As you do, remember that there are seeds in the ground doing the same thing, shedding their coats.