

THE EDIBLE SCHOOLYARD PROJECT

SEED PARTS AND SPROUTING STARTS

Summary: Seeds are extraordinary! For example, one tiny tomato seed will grow into a beautiful tomato plant that can produce over ten pounds of tomatoes! The life of nearly all plants we eat starts as a seed. Though seeds come in different shapes, sizes, and textures, they all share common parts and contain everything a plant needs to begin growing. In this lesson, you will investigate the parts of a seed, learn about the germination process, and try sprouting seeds yourself.

Materials:

- Seeds
- A small plastic bag
- A paper towel

Teacher Notes:

- For sections that instruct students to READ, you can record yourself reading aloud and send it to students. Direct them to read along with the recording. This is a helpful strategy for differentiating learning that supports all students, especially English Language Learners.
- The READ sections can also serve as talking points for teachers if the lesson is being taught in person.
- If students are completing this lesson as part of [Know, Sow, Grow](#) this is lesson number one.



SEED PARTS AND SPROUTING STARTS

Vocabulary:

Key vocabulary word:

- **Seed coat:** covers and protects the seed

Related words:

- **Embryo:** forms the new plant
- **Endosperm:** acts as food for the seed and nourishes the embryo

Key vocabulary word:

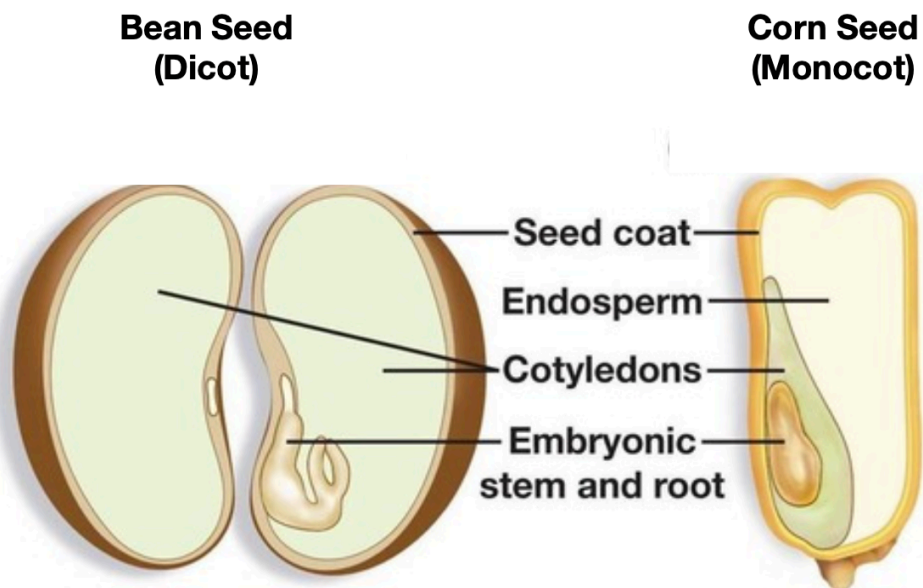
- **Cotyledon:** the first “leaves” of a plant

Related words:

- **Monocot:** a plant with one cotyledon
- **Dicot:** a plant with two cotyledons

DO: Use the [Building Your Garden Vocabulary](#) worksheet to help you learn the vocabulary in this lesson. The worksheet is optional unless your teacher has assigned it.

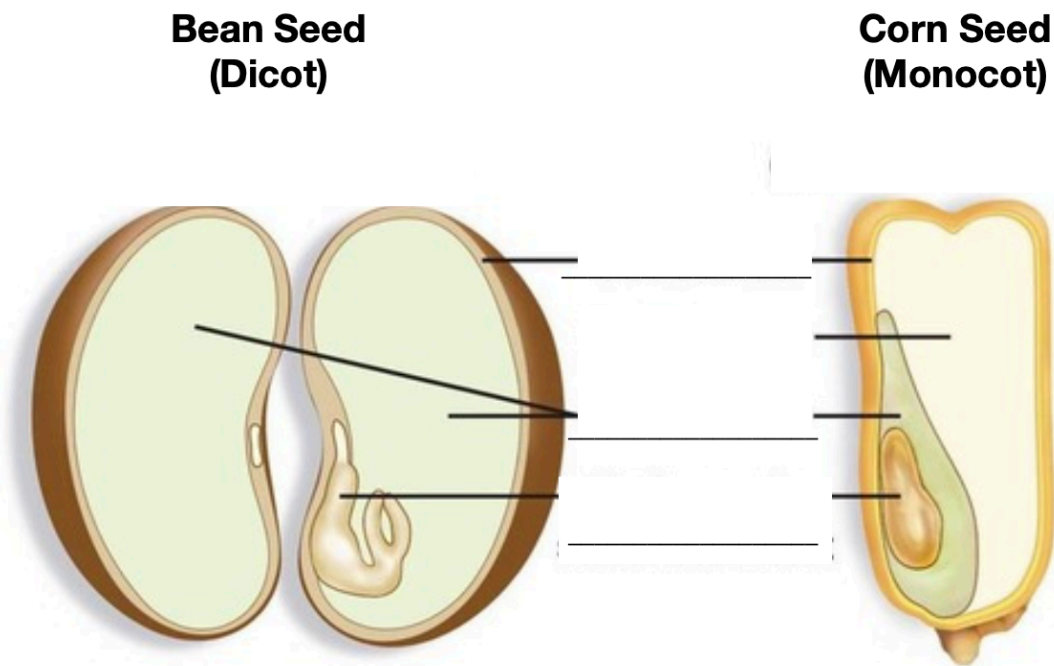
READ: Flowering plants are divided into two categories determined by the first leaves that emerge from the seed. These first leaves on a plant are called **cotyledons**. Some plants have one leaf in the seed, called **monocots**, and plants with two leaves in the seed are called **dicots**.





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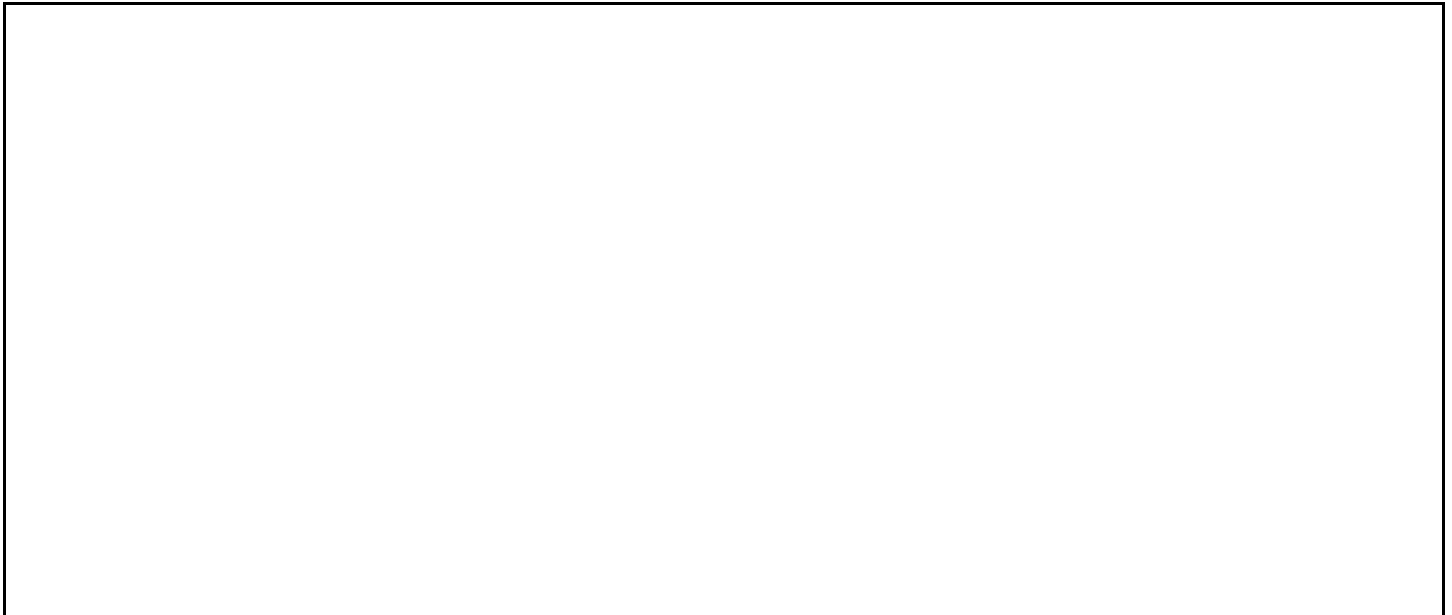
LABEL: Label the different parts of the seed. Look at the vocabulary list and the image above to help you locate the terms.



READ AND DRAW: Read the following section and then illustrate the processes.

READ: Seeds need a moist environment and the correct temperature to germinate. During the early stages of growth, the seedling relies upon the food supplies stored within the seed (the endosperm). The stored food supports the embryo during seed germination. The germination process ends once a shoot emerges from the soil, but the growth of the plant is just getting started.

DRAW: Translate the READ section from page three into a drawing. How would you explain in a drawing the parts of the seed that support growth? Or what is required for germination?

A large, empty rectangular box with a black border, intended for a student to draw and explain the parts of a seed that support growth or the requirements for germination.

DO: Starting seeds is an easy and fun activity to do at home. You can start seeds easily and watch them grow by starting them in a plastic bag. All you'll need is a few seeds, some sandwich bags, paper towels, and water. Follow the instructions in the Seed Starting Activity sheet (attached below).

References:

Harmier, K., (n.d). *Parts of a Seed*. Iowa Ag. Literacy. Retrieved from

<https://www.iowaagliteracy.org/Article/Parts-of-a-Seed>

Seeds, Miraculous Seeds.(n.d) *Maine Agriculture in the Classroom*. Retrieved from

https://www.agclassroom.org/me/matrix/lessonplan_print.cfm?lpid=213

Starting to Grow. (n.d). *Missouri Botanical Garden* Retrieved from

<http://www.mbgnet.net/bioplants/grow.html>

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SEED SPROUTING ACTIVITY

[INSTRUCTION SHEET]

Name _____

Summary: Starting seeds is an easy and fun activity to do at home. You can start seeds easily and watch them grow by starting them in a plastic bag. You can also plant seeds in your garden or planter boxes by [direct seeding](#).

Step 1: Get your materials together. You'll need seeds, sandwich size bags, paper towels, a permanent marker, and a spray bottle for water. If you don't have a spray bottle, just use a bowl of water.



Step 2: Label your bag with the name of the seed, the year the seed is from, and the date.

Step 3: Place 10 seeds on one half of a paper towel. Spread them out evenly so that they all have room to sprout. Fold the paper towel over to cover them.

Step 4: Spray the paper towel or splash water onto it using your hand until it is saturated but not soaking wet. It shouldn't have any dry spots, but it shouldn't be dripping either.

Step 5: Place the wet paper towel with seeds into the ziploc bag and set in a warm, sunny place like a windowsill. Seeds should germinate within 10 days.



Step 6: Transplant your starts into soil and watch them continue to grow!

