

# Exploring Monocots & Dicots

## Background Information

Monocots and dicots are two classifications of flowering plants. In this lesson, corn is the monocot used and soybeans are the dicot used. Monocot is short for monocotyledon which means one (mono) cotyledon. Monocots usually have parallel veins in the leaves and a fibrous root system. Other examples of monocots include wheat, oats, grass, sugarcane, pineapple, and chives. Dicot is short for dicotyledon which means two (di) cotyledons. Dicots usually have netlike veins and a tap root system. Other examples of dicots include peanuts, spinach, trees, lettuce, and sunflowers.



## Materials provided by McLean County Agriculture in the Classroom:

- one clear 9 ounce plastic cup per student
- 5 corn seeds per student
- 8 soybean seeds per student
- one coffee filter per student
- about a cup of vermiculite per student
- water (about a ½ cup per student)
- Monocots and Dicots - Main Parts of the Corn and Soybean Seed student worksheets
- Comparing the Seed Activity of a Monocot (Corn) and a Dicot (Soybean) Observation Journals

# Exploring Monocots & Dicots

1. Begin by reviewing what seeds need in order to grow. Answers may include light, air, soil (or something to grow in), space, water, proper temperature, fertilizer (sometimes), and length of growing time.
2. To compare the growth and development of monocots and dicots, students will plant some corn and soybean seeds. Each student should line the sides of the clear plastic cup with a damp coffee filter. Students should write their name or initials on their cups.
3. Fill the center of the coffee filter with vermiculite. Pack softly. The vermiculite will hold the moisture needed for the seeds. [Note: Vermiculite is a mineral sometimes used as a part of soil mixes or soil-less media. This material is lightweight and can hold water. When water is added to vermiculite, the flakes expand into a worm-like shape and act like an absorbing sponge. It is made from compressed dry flakes of a silicate material.]
4. Between the coffee filter and the cup, carefully place 5 corn seeds and 5 soybean seeds about halfway down. The seeds do not go in the vermiculite. The cup serves as a window to the seeds allowing students to watch the seeds grow.
5. Add just enough water to dampen the vermiculite. Avoid standing water.
6. Place the cups in a warm place out of sunlight.
7. Distribute the Comparing the Seed Activity of a Monocot (Corn) and a Dicot (Soybean) Observation Journal.
8. Have students make their first entry with today's date and what they did today.
9. Students should make and record their observations daily on the worksheet. They should also make sure the coffee filter and vermiculite remain moist. Avoid standing water.

**Illinois Science Standard MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth conditions affect on the growth of the adult plant.**  
**Illinois English Language Arts Standard RST 1: Cite specific textual evidence to support analysis of science and technical texts.**