

Garden in the Glove

Grade Level(s)

3rd grade

Estimated Time

30 minutes

Purpose

Students will observe seeds as they germinate and compare monocots and dicots.



Materials

▪Links:

Website with virtual resources: www.linncoag.com -2020/21 virtual learning drop down tab- March

Instructional video [Garden in the Glove - YouTube](#)

▪Worksheets:

Garden in the Glove review

▪Other:

Food serving gloves

Moist cotton balls

5 different kinds of seeds

Cardstock (Staple the glove to the cardstock)

Recommended: Visit [Publications \(iowaagliteracy.org\)](http://Publications.iowaagliteracy.org)

Books: My Family's Corn Farm and My Family's Soybean Farm.

Iowa Ag Today: Plants and Animals

Videos: Dicot: <https://www.youtube.com/watch?v=eKo5F87A8a0> Monocot: <https://www.youtube.com/watch?v=iFCdAgeMGOA>

Vocabulary

- **Germination** – The process of a plant emerging from a seed and beginning to grow.
- **Embryo** - The part of a seed that develops into a plant.

- **Cotyledon** – Part of the embryo within a seed. The cotyledon(s) provide nutrients (food) for the germinating plant. In some plants, they form into the first leaves of the plant, called cotyledon or seed leaves.
- **Monocot** – A flowering plant with an embryo that has one cotyledon. Grass and corn are examples of monocots.
- **Dicot**- A flowering plant with an embryo that has two cotyledons. Soybeans and tomatoes are examples of dicots.

Interest Approach – Engagement

Show students the seeds they will be using.

Ask them:

- What do they have in common?
- How are they different?
- What do seeds need to grow?

Background - Agricultural Connections

Iowa ranks first in soybean and corn production. Farmers care for them from planting until harvest. Corn and soybeans are found in many items that we use every day, including plastics, corn chips, and even cake! Corn can be made into ethanol and soybeans into biodiesel.

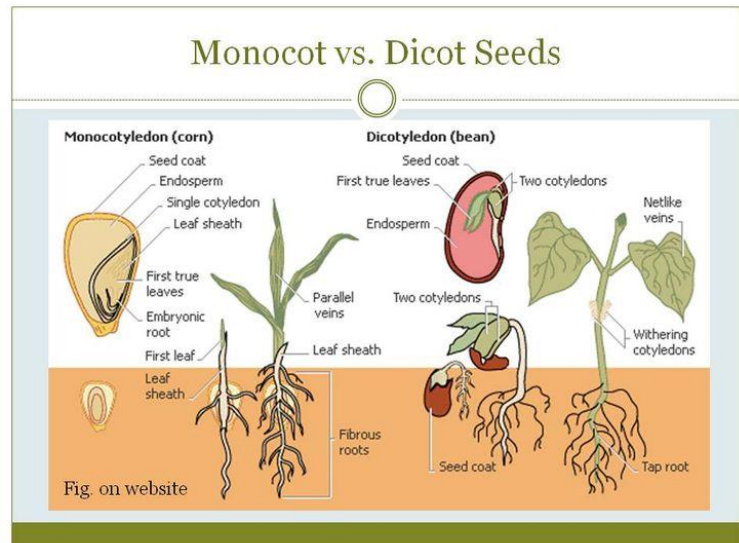
Seeds require moisture and warmth to germinate. In this case, the seed absorbs moisture from the cotton ball. As the seed absorbs water it causes the shoot to start to grow.

Procedures

1. Watch the instructional video
2. How does a seed begin to grow? What does it need? Sun (heat- explain why), water, soil (medium to grow in) and air.
3. Define Germination. **Germination** – The process of a plant emerging from a seed and beginning to grow. **Cotyledon** – Part of the embryo within a seed. The cotyledon(s) provide nutrients (food) for the germinating plant. In some plants, they form into the first leaves of the plant, called cotyledon or seed leaves.
Monocot – A flowering plant with an embryo that has one cotyledon. Grass and corn are examples of monocots.
Dicot- A flowering plant with an embryo that has two cotyledons. Soybeans and tomatoes are examples of dicots.
4. Pass out gloves, cotton balls, seeds, and water (bowl or spray bottle).
5. Instruct the students to make a seed sandwich with 2 damp cotton balls and a seed or place one seed in with a couple of water beads.
6. Students then staple the glove to card stock and will label what plant seed they put in each finger of the glove.
7. Place the Garden in a Glove near a window.
8. Have the students work individually or in groups to complete the Garden in a Glove worksheet.

Extension Activities

- During the observation period, have the students create a journal to use for daily observation entries.
- After the experiment is complete, have students create a poster explaining what they witnessed. Include a comparison of the different seeds.
- Bean dissection- Soak lima beans prior to lesson and have the students identify each part of the seed.



Organization Affiliation

National Ag in the Classroom

Agriculture Literacy Outcomes

T1.3-5.b Explain how the interaction of the sun, soil, water, and weather in plant and animal growth impacts agricultural production.

T2.3-5.c Explain how the availability of soil nutrients affects plant growth and development.

Iowa/ Common Core Standards

3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles, but all have in common birth, growth, reproduction, and death.