

Mighty Soybeans

Grade Level(s)

2nd grade

Estimated Time

30 minutes

Purpose

Students will observe the power of seeds by germinating soybeans in plaster of Paris.

Materials

▪Links:

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

Book link is available on our website: My Family's Soybean Farm

Instructional video: [Mighty Soybean Activity - YouTube](#)

▪Worksheets:

Soybean lifecycle

▪Other:

Soybeans (2-3 per student)

3 oz. plastic cup

2 Tablespoons plaster of Paris

Water

Popsicle stick for stirring

Paper

Vocabulary

Germination - The process of a plant emerging from a seed and beginning to grow.

Interest Approach – Engagement

Read or listen to the story My Family's Soybean Farm book. Ask the students to observe the life cycle of the soybean plant throughout the story.

Background - Agricultural Connections

Seeds require moisture and warmth to germinate. In this case, the seed absorbs moisture from the plaster mixture. As the seed absorbs water it increases in size and applies

pressure to the surrounding plaster. This force, combined with the strength of the germinating sprout, causes the plaster to crack and allows the shoot to start to grow through the plaster. This strength and ability to grow in adverse conditions allows plants to survive in a wide range of environments. The soil in fields often crusts over and becomes hard after farmers plant soybeans in the spring. The beans will break the hard surface of the topsoil as they germinate and emerge as seedlings.

Procedures

1. Watch the instructional video.
2. Ask the students to brainstorm what seeds need to grow. Seeds require moisture and warmth to germinate.
3. Explain: In this case, the seed absorbs moisture from the plaster mixture. As the seed absorbs water it increases in size and applies pressure to the surrounding plaster. This force, combined with the strength of the germinating sprout, causes the plaster to crack and allows the shoot to start to grow through the plaster. This strength and ability to grow in adverse conditions allows plants to survive in a wide range of environments. The soil in fields often crusts over and becomes hard after farmers plant soybeans in the spring. The beans will break the hard surface of the topsoil as they germinate and emerge as seedlings.
4. Place plaster of Paris in a plastic cup.
5. Add water and mix. Continue adding water until the water has the consistency of a thick milkshake.
6. Drop 3 soybeans into the cup. Using the popsicle stick or spoon, push the soybeans into the plaster until they are just covered.
7. If possible, check the soybeans every hour for the first day. What do you think will happen?
8. On day two, add three drops of water to the cup.
9. Review with the life cycle worksheet.

Organization Affiliation

Original activity from Louisiana Ag in the Classroom.

Agriculture Literacy Outcomes

T1.K-2.c Identify natural resources

T2.K-2.e Identify the importance of natural resources in farming.

Iowa/ Common Core Standards

2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.

2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.