



# Mighty Soybeans

## Target Grade Level / Age Range

3<sup>rd</sup> through 5<sup>th</sup> grade

## Time:

Twenty minutes with observations for two days.

## Purpose:

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

## Materials:

- 3 soybeans
- 1, 3 oz. plastic cup
- 2 Tablespoons plaster of Paris
- Water
- Plastic spoon or popsicle stick for stirring

## Suggested Companion Resources

- The Bean Team DVD series, United Soybean Board
- [www.podtoplate.org](http://www.podtoplate.org)

## Vocabulary

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

## 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. Place plaster of Paris in a plastic cup.
2. Add water and mix. Continue adding water until the water has the consistency of a thick milkshake
3. Using the popsicle stick or spoon, push the soybeans into the plaster until they are covered, then smooth the surface of the plaster.
4. If possible, check the soybeans every hour for the first day. What do you think will happen?
5. On day two, add three drops of water to the cup.

## Did you know? (Ag facts)

- The soybean or bean is a species of legume native to East Asia, widely grown for its edible bean which has numerous uses.
- Soybeans are used to feed livestock, make biodiesel, and processed into many food and household products.
- Iowa is the top soybean producing state in the country.

## Sources/Credits

Original activity from Louisiana Ag in the Classroom.

## Author(s)

Cindy Hall – IALF

## Organization Affiliation

Iowa Agriculture Literacy Foundation

## Curriculum Connections

- Iowa Core Science:
  - Understand and apply knowledge of organisms and their environment. (S.3-5.LS.1)
  - Identify and generate questions that can be answered through scientific investigations. (S.3-5.SI.1)