

Mighty Seeds

Grade: First through Fifth Grade

Subject: Science

Objectives: Become aware of different growing conditions.

Standards: Students understand the principles of chemical reactions. Students understand the concept of germination.

Multiple Intelligence:

Visual-Spatial: Observe the plant growth cycle and chemical reactions.

Bodily Kinesthetic: Plant and observe growth cycle of a soybean.

Linguistic: Discuss observations and hypothesis with class.

Naturalistic: Apply scientific principles to nature.

Materials needed:

Clear plastic cup (one per student/pair)

5 tablespoons Plaster of Paris

2 or more tablespoons of water

Dropper

3 soybeans (per student/pair)

Procedure:

1. Place Plaster of Paris in a plastic cup.
2. Add water and mix. Continue to add drops of water until the mixture has the consistency of a very thick milkshake.
3. Push the soybeans into the plaster until they are covered, then smooth the surface of the plaster.

Discussion questions: What do you think will happen to the soybeans? Make regular observations. What happens? Why?

The next day, add one tablespoon of water to the cup and continue to make observations. What happens? Why?

Observations: 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 grow up and through the plaster. The strength and ability to grow in adverse conditions allows plants to survive in a wide range of environments. You may also notice that when water is mixed with plaster, the cup becomes warm. A chemical reaction which gives off heat like this is known as an exothermic reaction.

Source: Louisiana Farm Bureau.



AG IN THE CLASSROOM