

SUPER SEEDS

TEACHER GUIDE

WONDER



PLANNING

Here's a suggested schedule for this kit! The activities should be completed in order, but you can choose when the lessons take place over time.

ACTIVITY INFORMATION	SECTION(S)	TIME REQUIRED	DAY/ LESSON
ACTIVITY 1: SEED DIVERSITY Discover the many differences in seeds. Total time: 30 min	<input type="checkbox"/> Seed Sorting	30 minutes	Day 1
ACTIVITY 2: STICKY LEGS Pollinators transfer pollen with their bodies. Total time: 1 h 30 min	<input type="checkbox"/> Pollination	15 minutes	Day 2
	<input type="checkbox"/> Make Flowers	15 minutes	Day 3
	<input type="checkbox"/> Make a Bee	30 minutes	Day 4
	<input type="checkbox"/> Transfer Pollen	15 minutes	Day 5
	<input type="checkbox"/> Show What You Know	15 minutes	Day 6
ACTIVITY 3: MOVING WITHOUT FEET Find out how seeds are dispersed by animals. Total time: 1 h 15 min	<input type="checkbox"/> Seed Dispersal	15 minutes	Day 7
	<input type="checkbox"/> Pick Up Seeds	30 minutes	Day 8
	<input type="checkbox"/> Grasslands	15 minutes	Day 9
	<input type="checkbox"/> Wind or Water	15 minutes	Day 10
ACTIVITY 4: EXPLODING PODS Seeds have methods of dispersals that don't require other animals. Total time: 1 h	<input type="checkbox"/> Seed Pods	15 minutes	Day 11
	<input type="checkbox"/> Make a Grid		Day 12
	<input type="checkbox"/> ...		
ACTIVITY 5: TAKE OFF			

Full schedule available with purchase

1

activity

SEED DIVERSITY

Oobleck is a type of semi-solid known as a shear-thickening fluid, which is a type of Non-Newtonian fluid. When shear forces (stresses) are applied to it, friction between the long, polymer-like starch particles prevent them from sliding past each other, decreasing the material's ability to flow. The more force is applied, the harder oobleck becomes.

In this activity, your student will make oobleck.

1

CONTENT

- Seeds are unique in their textures and structures. Each seed type has a purposeful design, perfectly adapted to meet the growth needs of the plant.
- The seeds your student will be sorting are wildflower seeds, which are typically found in grasslands (also known as prairies).
- You and your student will notice there are many differences between any two seeds within the packet. Some examples your student may notice include: texture, size, shape, and seeds that have spiky appendages.
- Each of these characteristics is part of the perfectly adapted design of the seed for successful plant growth.

SEED SORTING

2

PREPARATION AND SUPERVISION

■ You can support your student with this activity by assisting with step 2. You can choose to use all of the seeds in your packet, if you feel your student will have the attention span and interest in doing so. However, it is not necessary to sort all the seeds. Choose a smaller fraction of the packet and be sure that you have representations of all of the types of seeds in the packet. Save the wildflower seeds at the end of this activity to be used during Activity 3. Save your white drawing paper from this activity for Activity 2.

3

PREPARATION AND SUPERVISION

■ You may need to assist your student with creating additional rows on your chart. There should be no more than 7 types of seeds in your packet. If your student does find more than 7 types of seeds, you may add onto the chart.

4

Question 1: Write two things you noticed when sorting the seeds.

Answer: There is no wrong answer here. The student should have noticed differences among the seeds. Even seeds that come from the same type of plant can have differences. This is similar to humans, where siblings who come from the same parents do not look identical. The differences are important for the survival of the plant species. As an example, some seeds have the adaptation of color variation. There are seed-eating animals that can see various shades of colors better than others. By having variation in color, more of the seeds are likely to survive and become new plants; thus, the plant species continues to exist.

30

☑ PREPARATION AND SUPERVISION

■ The longer the seed sits in the water, the easier it will be to take off the seed coat. However, you have some flexibility to base the length of time the seed is in the water on your student's attention span and ability to wait for the seed to soak. You could explore some of the extension activities while waiting.

31

☑ PREPARATION AND SUPERVISION

■ The seed doesn't have to be completely dry. Just ensure the seed isn't dripping water.





32

☑ PREPARATION AND SUPERVISION

■ You may want to demonstrate this step for your student. To take this activity one step further, attempt to open the seed and locate the food storage and the embryo once the seed coat is removed. Alternatively, if you don't open the seed, you can plant the seed and have students observe its growth. If you saved the lima bean seeds from Activity 4, you can compare growth of the seed without the seed coat to a seed with a seed coat during an extension activity.

33

SEED COAT DIVERSITY

SUNFLOWER SEED		Thick
SOYBEAN		Thin
BLACK BEAN		Thin
MANGO SEED		Thick

EVERYTHING YOU NEED

There is so much diversity to seeds, but all seeds contain at least three parts: the seed coat, the food storage, and the embryo. You can add to your discussion of the parts of the seed by researching other parts a seed may have. These additional parts are necessary for some seed types. For example, some seeds have a layer of fruit that surrounds them as an extra layer of protection during the development of the seed.

Germination can be difficult to understand because we don't see the process as it happens under the soil. Having a model of these steps shows your student that the change from seed to sprout doesn't happen immediately or automatically.

activity
6



WONDER
SCIENCE
UNLOCKED

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