

# Ideas for Planting Seeds

"Place a paper towel inside a baggie. Run a row of staples across the bottom of the baggie about one inch from the bottom. Place bean seeds inside the baggie so they are resting on the staples. Carefully pour in water and allow the paper towel to soak it up. Display the baggies in warm place and watch seeds sprout and grow. You can tape these to a sunny window. Keep them watered. The seeds will grow quickly! Carefully take the baggies apart and plant all of the plants in a very large container and add support sticks. The plants will grow, flower and grow beans all within the classroom right before the kiddies eyes. They love it!"



"Give each child a plastic or paper cup, a piece of paper towel, a sandwich baggie and some seeds that germinate quickly. They dampen the paper towel, gently roll up the seeds in it, place them in the baggie and then into the cup. The paper towel must be damp without being too wet. The children can keep the cup on their desktops and look at them every day to note the progress. Make diagrams to show the plant embryo, the root and the stem. The interest level is high when the seeds are so close to them and they have the surprise every day as the seeds sprout."

"My kids have always loved 'planting' in a ziplock baggie. We usually tape a couple of seeds to the middle of a folded paper towel, wet the paper towel, place in a ziplock bag (staple the top of the paper towel in position by stapling bag and all so it doesn't sag in the bag and the moisture won't leak out). Tape the bags to the window (bean side facing out) and wait to see the roots grow. It takes a couple of days, but they love to see the roots. I usually can show the seed coat, etc., that we explored in the previous lesson when we dissect a soaked bean to find all the 'working parts'. You can find a tap root pretty easily, too."

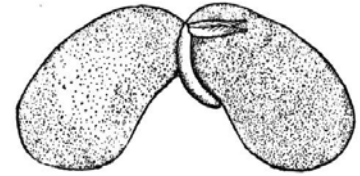
*(Outdated! Most kids won't know what a Beanie Baby is...)* "My class makes beanie babies by putting bean seeds in a small Ziploc baggie with damp paper towel. They wear them around their necks with a sign that says 'My Beanie Baby'. My class did this last week and it was really cute."

"My kids are always intrigued when I soak the beans overnight and then let them pop them open after sliding off the 'skin' giving real names of parts of course...They love finding the tiny plant inside."

"In addition to planting the beans, we took apart a soaked bean seed and taped the parts on the paper and labelled them."

"I teach the vocabulary that goes with the science activity: seed, plant, root, water, sun, etc."

"Here is an interesting idea that I have tried with an Amaryllis plant. Ask the children how they think a plant grows. Elicit: From the bottom up? The top up? The Middle section enlarges? Have the children use a permanent marker to mark the stem on the soil line and the tip of the stem. Then have them draw two lines in the middle that are 1 cm apart. Each observation day, have the students observe the marks to see if their location has changed. (They can measure the difference.)"



"Open a pea pod, lemon, or peanut and point out the seeds inside. Ask them to predict what they'll see when you cut it open. Talk about the seeds in plants, fruit and vegetables.

Soak the dry lima beans in water overnight or most of the day before doing this experiment. Give each student a bean and a paper towel. Demonstrate how to carefully remove the outer layer of skin, or seed coat, from a bean, then have students follow your directions for doing the same to their beans. Instruct students to separate the two halves of the bean. Explain that these are called *cotyledons* and store food for the plant. Have students locate the tiny plant sprout, or embryo.

Give each student another bean, a paper towel, and a plastic bag. Have the student moisten the paper towel (damp, not wet), wrap it around the bean, place it in the bag, and seal the bag. Ask students what they think will happen to the beans. Check on the beans over the next few days. Students will find that the beans have begun to sprout. Pass out the beans so students can examine them closely every day. Lastly, plant them in soil."

What does a plant need to grow? What are some things that you need to grow? Water, food, sunlight - be scientists to find the answer to the questions.

Put beans in ziploc bags to test the following conditions:

- no water (no wet paper towel)
- no light (cover in black, put in closet)
- no food (take seed apart--baby plant w/o bean)
- optional: no air (close ziploc bag)

Check bags periodically to see what happens and discuss results.

"Soak them overnight. I soak 4 or 5 for each child. They will dissect one or two to find the plant embryo and the others they plant.

We plant ours in milk carton 'peek-through' pots. We make them from our milk cartons.

1. Cut off the top.
2. Cut a window in one side. We leave one of the 4 sides of the window un-cut. (So I guess it is actually a door!)
3. Line the carton with a plastic sandwich bag. (This will keep the soil from going out the window).
4. Fill the planter with soil and carefully push the bean between the clear window

and the soil. Close the window 'shutter'.

5. Everyday the children open the window and watch what is taking place underground.

This is a great site for your students to explore and learn about plants. It is called 'The Great Plant Escape' and there are a number of learning adventures you can do with Detective Leplant and his partners Bud and Sprout.

<http://www.urbanext.uiuc.edu/gpe/index.html>

Start corn seeds to show students that corn has only one cotyledon.

- Give each student another bean, a paper towel, and a plastic bag.
- Have the student moisten the paper towel, wrap it around the bean, place it in the bag, and seal the bag.
- Put the bags in a dark place and ask students what they think will happen to the beans.
- Check on the beans over the next few days. Students will find that the beans have begun to sprout.
- Pass out the beans so students can examine them closely and plant them in soil.
- Show the roots and the leaves.
- Ask students to explain why the bean sprouted, even in the dark. Point out that moistening the paper towel and sealing the bean in a plastic bag created an environment similar to that of a greenhouse.



"One neat thing that was part of our FOSS 'New Plants' kit was to plant a seed in a clear large drinking straw. They included wheat and oat seeds. You take a straw, mark it with a permanent marker about 3 inches from one end. You cut a piece of very absorbent paper towel 1 1/2" x 3". The students then twist the paper towel and insert it into the end of the straw (up to where the black mark is).

The seed is dropped into the other end, after a discussion about the seed placement, up or down. We did still get one that is growing with the stem and root down into the paper towel. Makes for an interesting discussion though. The straws are then placed with the paper towel end down (acting as a wick to draw up the water) into a cup of water with about an inch or less of water.

Within a few days they will start to sprout roots and stems. We are making observations on a sheet from the time we planted it. We glued on a seed in the first column, then each time we observe we draw what it looks like and date it.

It is really cool! You can see the roots reaching further down each day and the stems getting longer and longer."

"How does a plant begin? Ask students for thoughts and predictions. How does a seed

turn into a plant? Tell them that scientists make predictions and study things to find answers to their questions. *Today you are going to be a scientist.*

Give each student a seed, lima bean, that has been soaked in water so it is easier to open. Show them how to open the seeds carefully. (They fall apart, so you must be gentle!) Ask students to see if they can find out how a seed turns into a plant. After looking on their own, have them help friends find out why. Have them talk about it with their groups as they look. Make sure every child sees a baby plant.

Come back to the carpet and have students discuss their conclusions. Show the illustration of the parts of a seed including the baby plant, seed coat, and plant food.

Now that we know where a plant begins, can it grow where we left it? What does it need to grow? What are some things that you need to grow? Water, food, sunlight - we don't know for sure, so we are going to be scientists again to find the answer to our questions.

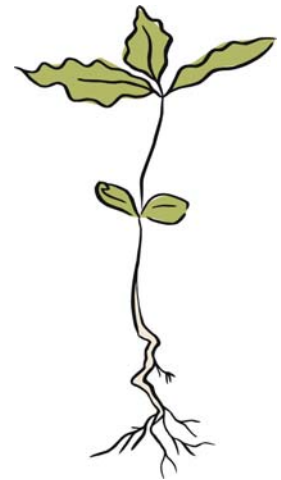
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Questions:

- What do seeds need in order to germinate?
- What changes do seeds and little plants undergo during germination and early growth?



Put a row of large seeds (separated) across the middle of a piece of paper towel that will fit into a large ziplock baggie. Then put a narrow strip of clear tape over the row, attaching to the towel between each seed and staple between each seed. Dampen the paper towel and put in the large baggie. Tape in place so the paper lies flat and seal. Tape some of the baggies onto the window and put some in a dark cupboard. You can do some without water, too. See how the seeds sprout and the differences in the growth. You can also put some bags in the fridge to see what happens.

OR: Use clear plastic cups. Cut some strips of black construction paper and line the cups with the black paper. Stuff paper towels into the cup to hold the paper up against the sides. Now, slip 3 or 4 bean seeds around the cup, between the black paper and the cup. Water the paper towels. Keep them damp, but not flooded. The students get to see the beans wrinkle (as the water softens the seed coat), sprout, grow roots, stems, leaves, etc. It can all be seen through the clear cup.

Notice how gravity affects the root and the leaves.

First, the students will see the 'tap root' coming from the seed. Then branches will form off this and finally 'root hairs' to absorb moisture. Then the cotyledon leaf or leaves will appear on

the stem. These are not true leaves - the true leaves come later.

The students can be asked the following questions:

1. Is air important for seed germination?
2. Is water important for seed germination?
3. What happens to a water soaked seed?
4. Which direction do the stem and/or root grow?
5. Can a dry seed germinate?
6. What does a seed in order to germinate?

Name the parts of a seed, and the parts of the new baby plant (seedling).

Plant some seeds in soil to give to Mom for Mother's Day.

Small marigolds are a good choice - they germinate easily and bloom in about 6 weeks.

### **Spring Planting**

Seeds know just the way to start.

I wonder how they get so smart?

They could come up in garden beds

Feet first by standing on their heads.

They could forget if they should grow

Like sunflowers high, or pumpkins low.

They could forget their colours, too,

And yet they never ever do."



### **Planting Outside**

If you have a bit of school garden where you can plant some seeds, this is an idea that the students love! Make a teepee-like frame out of six to eight 6-foot-long bamboo or wood stakes. Draw a circle about four feet in diameter in the soil. Evenly space the stakes around the circle and push the bottoms into the ground. Then tie the stakes together at the top. Lash seven 2- to 3-foot cross-stakes to the stakes near the ground, leaving a door where the children can enter the 'house'. Tie three to four strings between each of the stakes from the top to each of the cross-stakes.

Purchase pole bean seeds and plant three seeds below each string and stake. As the seedlings grow, gently help them get over to the nearest string. Eventually, the beans will learn to grow on the strings by themselves. In about a month (depending on the seed variety and your growing season), the entire bean house will be covered with green stems, flowers, and eventually . . . beans.

### **Grow Your Initial!**

Have each child draw a 'fat' initial of the first letter of his her name about 10 cm tall on a 20 cm. paper. Make each line of the letter about a finger wide. (1 cm.) Then, cut out this letter so a reverse pattern is created - we don't want the letter itself, we want the original paper with the letter gone. Lay this pattern on dampened soil in a small pan. Sprinkle lawn seed on the letter. Add a bit more dampened soil over the letter and seed. Lift the paper away, spray with water and cover with Saran wrap. Take the Saran wrap off when the grass sprouts and see the letter!

### **Potato Planters**

Scoop out some of the top of the potato before you give it to the children, and flatten the bottom so it will sit upright. Let the children make a face with pipe cleaners, yarn and eyes. When they have finished add soil to the top and grass seed. When the grass grows your potato has hair.

### **Mother's Day**

Plant marigold seeds in late March so they will be blooming for Mother's Day!

