

Pre-K Growing a Bean



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Overview:

The class will learn about germination, and will “plant” a bean seed in a plastic bag. They will observe the germination process over time, and will track their seed’s progress in a journal.

Georgia Early Learning and Development Standards:

- CD-SC1: The child will demonstrate scientific inquiry skills.
- CD-SC3: The child will demonstrate knowledge related to living things and their environments.
- CLL1: The child will listen to conversations and demonstrate comprehension.

Objectives:

- Students will learn about seeds and what germination means
- Students will participate in an activity to sprout seeds
- Students will observe and track their seed’s progress

Materials:

- A variety of seeds (different sizes)
- Per child: one bean (or a lima bean), one plastic re-sealable bag, one folded paper towel
- Water
- Music and Movement video clip: Preschool Learn to Dance- Can You Plant a Bean
<https://www.youtube.com/watch?v=LCKEdDEr82k>
- A journal for each child to track seed progress
- Optional extension: soil and a pot for planting seeds

Reproducible:

https://gpb.pbslearningmedia.org/resource/473217097_21/beans-clipart/#.WSJGgmjyVU

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Lesson Plan:

- Engage (whole group): 10 minutes
 - Introduce the idea that plants come from seeds. Show different types of seeds, and point out that some are big and some are small.
 - Pass out a dried kidney bean (or lima bean) to each child. Encourage them to feel the seed- “how does it feel?” Explain that seeds have a hard outer shell called a seed coat.
 - Explain that inside the seed is a tiny plant, surrounded by special plant food to help the seed grow. Direct children to find the small ‘hole’ on the side of the kidney bean- this is where the seed will sprout (where the plant will come out).
 - When a seed first starts to grow, it’s called “germination”.
 - Discuss what a seed needs to grow- water, the right temperature, and light
- Explore (small groups): 10 minutes
 - Explain that we usually grow plants in soil, but that means we can’t see the seed sprout because it’s underground. We are going to start growing the seeds in a plastic bag, so we can watch it germinate.
 - Ask open-ended questions to encourage discussion about what germination means. Provide hints and assistance as needed
 - Provide each child with a re-sealable plastic bag, paper towel, and bean; provide each table with a small container of water
 - Instruct each child to gently wet their paper towel, place it in the bag, and lay the bean on top. Place bags in a warm spot, like a windowsill. To make it easy to see, you can tape the bags to the window.
 - Instruct children to get out their journal, and draw the seed how it looks today.

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- Explain (whole group):
 - Explain that the beans are going to germinate. First, the roots will come out, then leaves. This will take many days, and they will track their seeds progress.
 - You can use this image to help explain the full process:
https://gpb.pbslearningmedia.org/resource/473217097_21/beans-clipart/#.WSJGgmjyvIU
 - Explain that this seed will grow into a bean plant, and that beans are a kind of legume. Legumes are a group of vegetables that grow in pods. Other legumes include other kinds of beans, lentils, peas and peanuts.
 - All vegetables, including beans/legumes, help our bodies grow and get stronger.
 - Participate in a music and movement activity about planting beans: Preschool Learn to Dance: Can You Plant a Bean
<https://www.youtube.com/watch?v=LCKEdDEr82k>

The following extension activities can occur after the beans have been “planted” for a few days:

- Extend (whole group): 15 minutes (daily or every other day)
 - Allow students to check on their seeds daily, and if they have changed, to draw it in their journal.
 - Ask them to identify the seed, roots and leaves as they grow.
 - Ask the children if they remember what germinate means and have them explain it in their best words.
 - Have children share with the class different legumes.
- Optional Extension:
 - As seeds grow larger, they can be transplanted into a pot with soil. Even if you don't plant them in a garden to create fully productive plants, you can continue to grow the plant in a pot so students can get an idea of what the process looks like over time.
 - Children can act out each stage of a plant life cycle to encourage movement.