

Material Preparation

MATERIALS

- bowl to soak lima beans
- small washcloth
- clothesline or rack and clothespins to hang children's plastic bags of seeds
- roll of paper towels
- small plastic cups
- craft sticks
- permanent marker
- ½ cup dry lima beans to be soaked in water
- half an egg carton
- ECHOS Book: *A Garden for Iggy*
- potting soil

For each child:

- magnifier
- dropper
- three dry lima beans (*Lima beans work best, do not substitute. Do not allow the children to eat the lima beans.*)
- sealable sandwich-size plastic bag
- small plastic cup
- paper towel
- *Ask Me About Plants* sticker

PREPARE IN ADVANCE

- Three days in advance, prepare lima beans for lesson:
 - Fill small bowl with water.
 - Place ½ cup of dry lima bean seeds in bowl.
 - Soak for up to three days, or until you see a sprout coming out of the seeds. Soaking longer than three days may cause them to mold. Monitor seeds daily and add water if needed.
 - Remove seeds with sprouts and place in dry bowl.
 - Pry open one sprouted seed for each child, exposing the inside roots, stem and leaf.
- Wrap a lima bean seed in a small washcloth.
- Label each plastic bag and a craft stick with each child's name.
- Fill small plastic cups about half full with water and place on table.



SET UP THE LESSON AREA

- Set aside plastic bags, three lima beans, droppers, paper towels and magnifiers for each child.
- Gather wrapped lima bean, opened lima beans and the ECHOS Book: *A Garden for Iggy*.
- Designate a part of the classroom in which to hang plastic bags containing bean sprouts.



For each child



PHOTOGRAPHS

Lima Bean Sprout photograph

OBJECTIVE

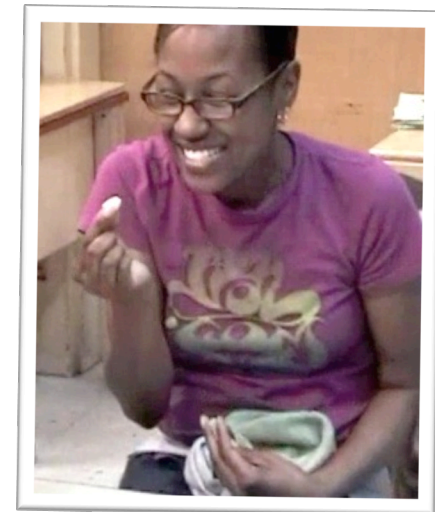
Children will learn that plants come from seeds, and what a germinating seed needs to grow.

EXCITE

1. Pretend that the seed, wrapped in a small blanket, is a baby and rock it back and forth gently so that the children cannot see what you have. **I have something small that will grow, but it's not a baby. I'll give you some hints. Listen closely to the words that I sing.**
2. Softly sing the lullaby as you cradle the seed in your arms, to the tune of "Rock-a-Bye Baby."

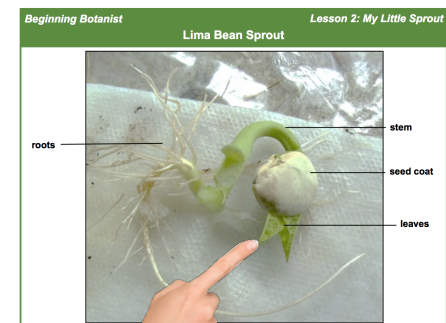
**Rock-a-bye seed,
So deep in the ground,
When the rain falls
The roots will dig down.
When the sun shines,
Stems grow up right
And out come the leaves,
Into the light.**

3. **What do you think I am holding?** Listen to the children's responses. Then reveal the seed with excitement. **It's a tiny seed! This tiny seed may one day grow into something.**
4. **What can seeds grow into?** Listen to the children's responses. **Some seeds grow into *plants*.**



INTRODUCE

1. **I'm going to read you a story about seeds.** Hold up the ECHOS book: *A Garden for Iggy* to show the cover. **The title of this book is *A Garden for Iggy*.** Read the story to the children.
2. Place the book to the side. **Let's explore seeds just like Pepe and Pia did in the story. I *soaked* some seeds. That means I let them sit in a bowl of water for a few days.** Show a few soaked seeds in the palm of your hand. **Seeds wear a coat just like we do to protect us. In a little while, we are going to open the seeds so that you can see what is hidden inside.**
3. Hold up a magnifier. **First, we need a tool. Do you know what this tool is called? It's a *magnifier*.** What does it help us do? Accept responses. **Yes, it helps make things look bigger so we can see them better.**
4. Give each child a magnifier and an opened seed. **Get your magnifiers ready because you are going to examine your seed. What can you see inside?** Wait for the children to respond. **Inside the seed is a very little plant about to grow.** Allow enough time for the children to explore the seeds.
5. Collect the seeds and magnifiers. **Here is a photo of a lima bean seed that grew into a plant, just like in the story about Iggy.** Show the photo of the *Lima Bean Sprout* photograph. Point to the stem and leaves.
6. **For the next few weeks we are going to help seeds *germinate*.** When a seed germinates, it starts to *sprout* roots, stems and leaves. With the right amount of light and water, your seeds may grow into plants.



EXPLORE

1. Give each child three dry lima bean seeds, a plastic bag with their name on it, one paper towel and a dropper. Ask the children to place the paper towel in the plastic sandwich bag, and then place the seeds on the paper towel. Assist the children as needed. **The paper towel and the plastic bag will give the seeds a safe place to germinate.**
2. **What else do we need to help the seeds grow or germinate? Yes, water.** Point to the dropper. **This is a *dropper*. We will use it to water the seeds.** Model how to use the dropper. **Our seeds need water to grow into plants, so we will add three droppers full of water to the plastic bag. Let's count to three together.** When they have finished adding three droppers full of water, collect the droppers.

***NOTE:** If too much water is added to the bag, the lima beans may mold. Be sure the paper towels are moist and pour out extra water from each child's bag, if needed.*

3. **I will hang your seed bags in the science area** (or a well-lit area of the room) **where you will be able to observe them as they grow. Each day for the next few weeks, we will take time to notice changes in the seeds.** When the seeds begin to sprout, encourage the children to plant their seeds in the plastic egg carton filled with soil. Use one space per child and label each space with a child's name. You may also plant them in an outdoor space.




INTERACT

Interact to accommodate children's individual needs and strengths. Use these suggested strategies as needed:

- If children need help with the dropper, offer assistance or encourage them to ask a friend.
- You may need to add more water to the bean seed bags after the children experiment with the droppers. The paper towels must be moist.
- This lesson with the storybook reading may be too long for some children. If needed, divide the lesson into two sessions: **INTRODUCE** on day 1, and **EXPLORE** on day 2.

OUTCOMES

1. Regroup the children in the ECHOS lesson area. **What did we discover today?**
Listen to the children's responses. If needed, use suggested prompts to elicit key concepts and vocabulary. Encourage responses from everyone.
 - **What new word describes how a seed starts to grow? I'll give you a hint; it starts with GER... Yes, *germinate*.**
 - **What does a seed need to grow?**
 - **What parts of the plant did we see inside the lima bean seed?**
 - **What tools did you use today?**
2. Give each child an *Ask Me About Plants* sticker. 

Remind the children to tell their family something they have learned about plants.
3. After you have completed *Lesson #2: My Little Sprout* with all the children in your classroom, add the ECHOS materials suggested below to your science area to encourage exploration.

VOCABULARY

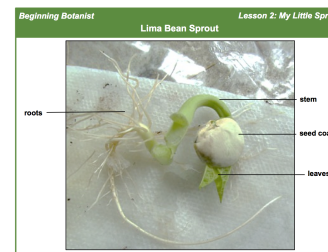
- dropper
- germinate
- magnifier
- plant(s)
- soak(ed)
- sprout



lima bean plants



ECHOS Book: *A Garden for Iggy*



Lima Bean Sprout photograph



magnifiers

Lima Bean Sprout

