Title: Seeds

Introduce yourself, explain what SEED is (Students for Environmental Education at Davis) and why you are visiting their classroom. Say a little about yourself as well. As an introduction, have each one say their name and their favorite animal, plant, or outdoor activity. If they don't have nametags on their desk, have them make one, perhaps decorating it with a plant (since this is the topic).

What do the students know about plants? Brainstorm and write their ideas on the board or have some kids come up and draw a plant on the board. Discuss the things that plants need to grow: sunlight, water, nutrients in the soil, and air (CO2).

What do plants grow from? Start off with examples (analogies) like humans from babies, cats from kittens, etc. Call on students until they answer that plants come from seeds.

Use the plant diagram poster to show the different parts of the seed. They will probably not be able to read some of the words, such as “cotyledon,” so point at the part and have the class repeat the parts after you.
Hand out the soaked lima beans (soaked for about 2 days). Show them how to remove the seed coat (may need to help them). Why do seeds need a coat? Explain that seeds have coats for the same reason we wear them—protection. We wear coats in the rain or when it’s cold to protect us from the elements. The seed coat protects the inside of the seed which is where the baby plant is.

Show the students how to split the seed in half. Make sure they open the rounded side, as not to damage the root and other internal plant structure. Look at the poster and find the same parts in the actual seed.

a) The biggest part of the seed is the cotyledon. The cotyledon is where food is stored, which feeds the baby plant before it reaches the light. Remind the kids that sunlight makes the plants grow, but when they are still underground, they need a different source of food. So each seed has its own little refrigerator underground: the cotyledons.

Q: Does the seed need the cotyledons once it has poked above the ground?
A: No, because the sunlight is now the plant’s food.

b) Look carefully on one end of the seed. You can see the beginnings of a root (technically the radical).

Q: What does the root do?
A: The little root will push the plant through the soil. It also soaks up water and nutrients in the soil.

Q: Which direction does the root go? Why?

A: It usually goes down in the soil, so that it can find water.

c) Next to the root, you can see small leaves.

Q: What do leaves do?

A: When they poke above the ground, they collect sunlight which makes them grow. The first leaves are usually bigger than the latter ones because they need to collect lots of sunlight.

Activity: Make pocket germinators

Give each kid a damp paper towel, plastic bag, and a few seeds (1 lima bean, 3 cow peas). Tell them to warp up the seeds in the moist towel, put in the plastic bag, and keep it in their pockets. Tell them to take good care of their seeds, observing them a few times a day. Tell them to remember what happens to their seeds and bring them back next week so that maybe we can plant them.

Q: Will the seeds grow into plants in their pocket?

A: No.

Q: What is missing in the pocket?
A: Sunlight.

Q: Will the seed germinate (begin to grow) in their pockets?

A: Yes, because there is water and the cotyledons feed the baby plant.

You can quickly review the lesson if you have time and then say goodbye.

Tell them that next week they will learn about producers, another word for plants.