



Grade Level: K-5

Essential Skills: 1, 2, 4

Science Standards: K.3-K.4;
1.3-4.3; 4.5

Time: 30 minutes

Materials:

Jewelry bags; yarn - 30" length per child; cotton balls; beans; water.

* Free kits with all materials available to Oregon educators; order at <http://aitc.oregonstate.edu/teachers/library/kits1>.

Vocabulary:

Germination: The process in which a seed or spore emerges after a period of dormancy under the right growing conditions.

Cotyledons: Sometimes called seed leaves; a simple embryonic leaf in seed-bearing plants, which, in some species, forms the first green leaf after germination.

Embryo: The rudimentary plant usually contained in the seed.

AITC Online Resources:

Books:

Oh Say Can You Seed?; Plant Life; Roots, Shoots, Buckets & Boots; Project Seasons

DVD:

Oregon Quality Grass Seed

Activities:

Dirt Babies; Food Explorer II; The ABCs of Oregon Agriculture

Lesson to Grow

Living Necklace

Description:

Here is a new twist on planting seeds. Students make a "living necklace" they can wear home or display in various places around the classroom. It is ideal for kicking off a plant unit or introducing the stages of plant growth and development. **Also, check out *Oh Say Can You Seed?*, an excellent companion book for this activity available from the AITC Free Loan Library.**

Directions:

- 1) Dip cotton ball in water and gently squeeze out the excess moisture so it is not dripping. Flatten it like a pancake or tortilla.
- 2) Place the bean seed in the middle of the damp cotton ball and wrap the cotton around the bean seed.
- 3) Place the seed and cotton ball in the jewelry bag and seal tight.
- 4) Thread a piece of yarn through the hole at the top of the bag, and tie the ends to make the necklace.
- 5) Each student may wear their "living necklace" home or keep them in their classroom for observation.
- 6) The seed will sprout in three to five days.
- 7) After five days open the bag to allow the seedling to get oxygen and add water. You can either plant the seed in soil at this point, or it can live for about two more weeks on the cotton ball, as long as it is provided with water and oxygen.

Additional Ideas:

To take this hands-on activity further, try these ideas with students.

Learn what a seed needs to germinate. A seed is alive! It needs water, soil (or cotton in this case to hold the moisture), the appropriate temperature, air or carbon dioxide. Most seeds are not affected by light or darkness, but some seeds, including species found in forests, will not germinate until an opening in the canopy allows sufficient light for growth of the seedling.

Hypothesize what environmental conditions affect germination. Ask students where they think the seeds will germinate best (a sunny window, dark corner, warm place, cold place). Place seed bags in the areas proposed, have students record their hypothesis, monitor seed germination, and draw daily progress or seed anatomy (roots, root hairs, cotyledons, etc.).

Discuss what a plant needs after germination and grow a crop of beans. (Add light and nutrients to the list above.) The bean seedlings can be planted in soil, be grown and finally harvested. The harvested beans can be eaten fresh (green) or dried. The dried beans can also be planted to grow another generation of bean plants.

Discuss how humans use plants. Humans use plants as food for people and animals, clothing, medicines, housing, the control of soil erosion, aesthetics, etc.

