Get Growing

Objective
Students read to learn what plants need to grow and conduct simple experiments with seeds.

Background
All kinds of plants need four things to live—soil, water, sunlight and air. Soil anchors the plant and provides nutrients, which feed the plant through its roots. Water moves the nutrients through the plant and helps it stand upright. Sunlight shines on the leaves and helps make chlorophyll. The plant uses the chlorophyll to make food. Plants “breathe in” carbon dioxide (CO2) and “breathe out” oxygen. People and animals need oxygen to breathe.

Language Arts/Science
1. Discuss what plants need to grow big and strong.
2. Read and discuss background and vocabulary.
3. Hand out the worksheets included with this lesson.
   — Students will follow directions at the top of each page to complete the worksheets.
4. Students will use Worksheet B as a language arts lesson. Students will fill in the blanks in the following sentences with the position words “above,” “on,” “over,” or “under.”
   — The sun is ________ the plant.
   — The rain falls ________ the ground
   — The stem and leaves are ________ the ground
   — The roots are ________ the ground.
5. Students will plant the same kind of seeds in two milk cartons. Use agricultural crops such as corn, tomato, soybeans or wheat.
   — Each student will provide one carton with all four of the natural resources the plant needs (soil, sun, air, water).
   — The second carton should get only three of the appropriate resources and substitute one altered resource (rocks, dark, airtight bag or jar, dry).
   — After two or three weeks students will compare the plants. Did some grow better than others? Why? What natural resources do growing plants need?
   — Add a third resource to test what limited resources (sand, artificial light, open jar or bag, water only when planting) will produce.
   — Students will draw or write about their observations as they watch the plants grow.
6. Students will create an Offset Fold Booklet, as follows, using three pieces of plain white or colored paper. You may use construction paper for the back and top layer. (Cut it to match the size of the other sheets.
   — Lay the first sheet of paper (or the piece of construction paper) on the
Materials
milk cartons from the cafeteria
potting mix
assorted crop seeds—corn, wheat, soybeans, etc.
water
sand
rocks

Vocabulary
natural resource—something that occurs in nature and is valuable to humans
soil—naturally-occurring mixture of minerals, organic matter, water and air, which forms the surface of the land.

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Using a ruler, place the second sheet of paper on top of the first sheet approximately 1 ½ inches from the bottom edge.
—Lay the third sheet of paper on top of the second sheet, placing it approximately 1 ½ inches from the bottom of the second sheet.
—Make sure all three sheets of paper are lined up along the sides.
—Fold all three sheets together so they line up 1 ½ inches from the one below it.
—Crease the fold.
—Unfold and place staples in the folded edge.
—The booklet should resemble stair steps when folded.
—On the top outside step write “Plants Need…”
—Then on each flap write one thing a plant needs (soil, light, air, or water), draw a picture to illustrate the need, and write in their own words why the plant needs this to grow.
—On the back of the booklet write a story about the needs of a plant.
This is a tomato plant. The stem and leaves are green. Color them green on your tomato plant. The fruit on a tomato plant is red. Color all the tomatoes red.

Draw a line from the four natural resource words to the plant.
Get Growing

Write the names of the four natural resources needed to grow a healthy plant. The word box will help you. Color the pictures.

1. ____________

2. ____________

3. ____________

4. ____________

Word Box

sunlight  air
water     soil

Oklahoma Ag in the Classroom is a program of the Oklahoma Cooperative Extension Service, the Oklahoma Department of Agriculture, Food and Forestry and the Oklahoma State Department of Education.
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Trace over the four natural resource words needed to grow a healthy plant. Color the picture.

1. __________ sunlight

2. __________ water

3. __________ air

4. __________ soil

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