Survival of the Fittest

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LEVEL: Grades 4-6

SUBJECTS: Science

AZ ACADEMIC STANDARDS: SC03-S4C3, SC03-S4C4, SC04-S1C1, SC04-S1C2, SC04-S1C3, SC04-S1C4, SC04-S4C1, SC04-S4C3, SC05-S1C1, SC05-S1C2, SC05-S1C3, SC05-S1C4, SC06-S1C2, SC06-S1C3, SC06-S1C4, SC06-S6C1, SC03-S4C3, SC03-S4C4

MATERIALS
Per group of 4 students: one empty cereal box, scissors, one copy of page 40 and 41, 4 purple skittle candies, 4 green skittle candies, 4 orange skittle candies, glue, and a plastic cup.

RELATED LESSONS
If it Smells Good, is Edible and Attracts Wildlife, Then it's a Practical Garden!
Where do They Go?
Don't Wait, Just Propagate!
Let's Make Stew
How do Plants Make Food?
Getting to the Root of the Matter
This Can't be a Plant
Soggy Seeds
Plant Seedling
Plants, Plants and More Plants

SUPPORTING INFORMATION
Plants grow almost everywhere. This game will "simulate" the prediction of growth of four "plants" under different conditions.

GETTING STARTED
Divide students into groups of 4. Assign these 4 jobs: getter/organizer, reader of directions, facilitator of candies to the cup, and recorder. Getter gets: one cereal box, scissors, copies of page 40 and 41, 4 of each color skittle, glue, and a cup.

PROCEDURES
-Cut the front panel from the empty cereal box.
-Glue the top flaps back together so that the box has four sides.
-Glue page 40 face up on the inside "bottom" panel of the box. Each circle represents the area in in which a plant's roots have spread.
-Cut apart the four graph pieces on page 41 and distribute one to each group member. Have each group member note the plant number indicated on his graph.
-Place the candy pieces in the cup.
-With the box sitting still on a desk, have one group member hold the cup three inches above the X and dump the candy pieces into the box.
-Have the recorder find column one on each person's graph and record the number of each colored piece that fell within each person's circle, or "plant".
-Pick up all the candy pieces and repeat the process of dumping and recording nine more times.

EVALUATION OPTIONS
-After graphs are complete and reviewed, students will answer questions on page 41.

BRIEF DESCRIPTION
Plants grow almost everywhere, but what happens when conditions are not optimal?

OBJECTIVES
Students will discover that: plants adapt in diverse environments, plants need water, minerals, sunlight, and air to survive, roots hold plants in place so they have to adapt.

ESTIMATED TEACHING TIME
45 minutes

EXTENSIONS AND VARIATIONS

-Students can change or add conditions that are being tested.
-Students can either increase or decrease the number of plants being grown.

RESOURCES

The Education Center, Inc. The Mailbox. Intermediate. Feb/Mar 1995.

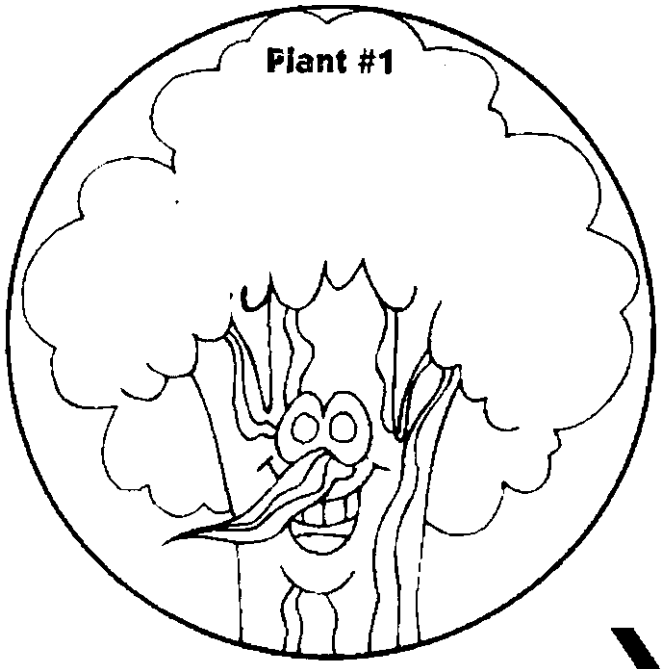
EDUCATORS' NOTES

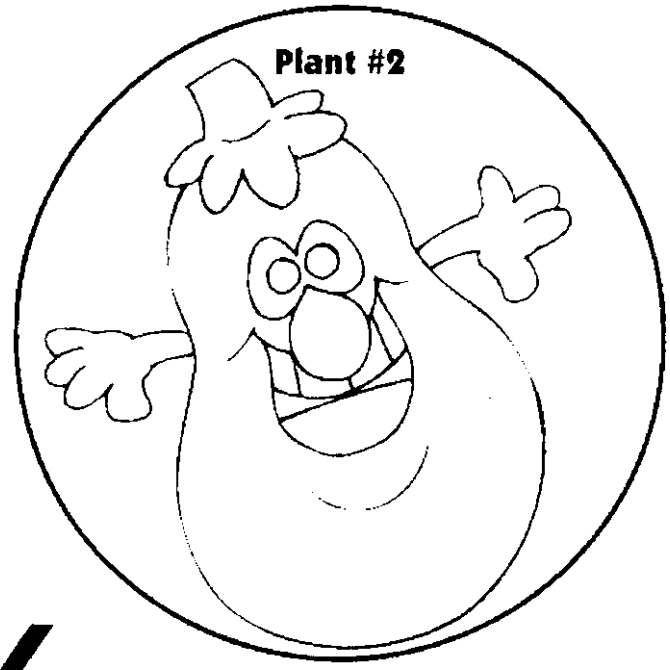
CURRICULUM DESIGN
Annette Cribbs and
Abbie Weien
6th Grade
Sechrist Elementary
Flagstaff Unified
School District

This Arizona Grown Specialty Crop Lesson Plan was paid for by a grant from the Arizona Department of Agriculture's Office of Marketing and Outreach.

"Survival Of The Fittest" Activity Board

Use with the `Survival 0f The Fittest' activity on page 3T





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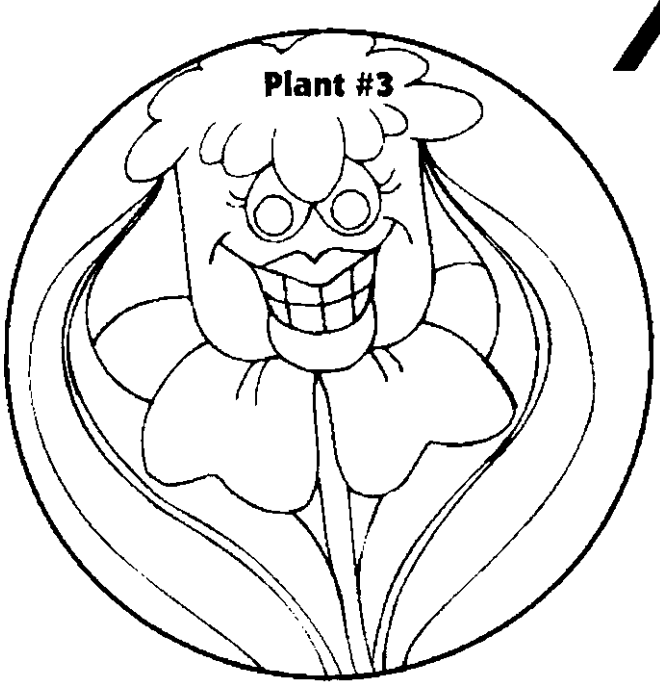
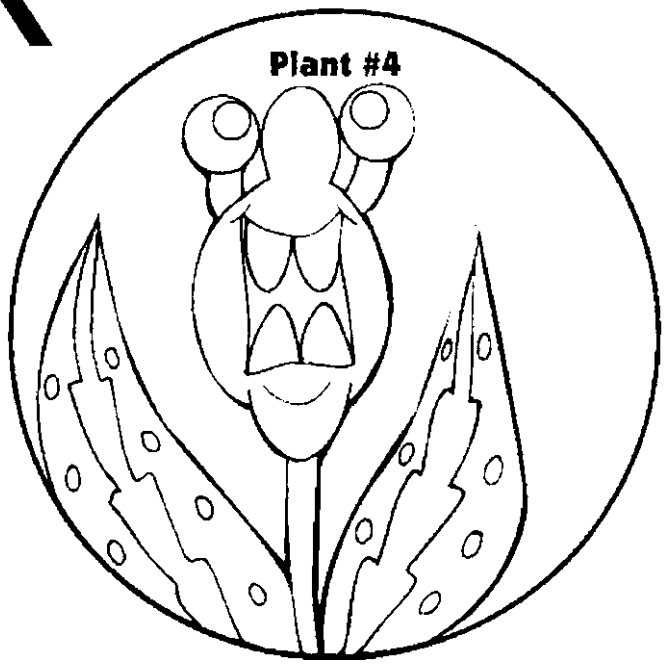


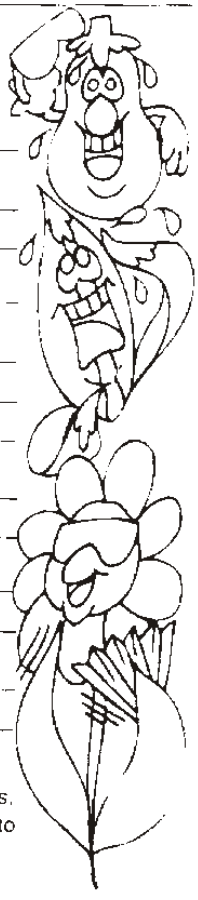


Plant #1	1	2	3	4	5	6	7	8	9	10	Plant #2	1	2	3	4	5	6	7	8	9	10
sunlight (yellow)											**sunlight** (yellow)										
minerals (purple)											**minerals** (purple)										
water (green)											**water** (green)										
clean air (orange)											**clean air** (orange)										
Plant #3	1	2	3	4	5	6	7	8	9	10	**Plant #4**	1	2	3	4	5	6	7	8	9	10
sunlight (yellow)											**sunlight** (yellow)										
minerals (purple)											**minerals** (purple)										
water (green)											**water** (green)										
clean air (orange)											**clean air** (orange)										

Names of group members: _____

Answer the following questions using the information on your graphs:

1. Which plant received the largest amounts of sunlight, minerals, water, and clean air combined? _____
2. How do you think this plant would have survived compared to the other three plants? _____
3. Which of the plants received the least amount of water? _____
4. Could a plant survive if it did not receive much water? Explain your answer. _____
5. Could a plant receive too much water? Explain your answer. _____
6. Could a plant survive if it did not receive sunshine or minerals? Explain your answer. _____
7. How would a lack of clean air affect a plant? _____
8. Have each group member research a different plant that manages to survive in adverse conditions (conditions in which the plant would not receive large amounts of sunlight, minerals, water, or clean air). On a separate paper, write your findings on how each plant has adapted to survive in these conditions.



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