

Tomato Planet



Objective:

Students will learn about seed survival rates and what seeds need to grow.

Grade Level: 2-4

Groupings: Pairs

Materials: (per pair) Cherry tomato; plastic knife, paper plate; index cards (one per student).

Time Allotment: 30 minutes

Directions:

1. Ask the students what is inside the fruits of plants. (Seeds.) How many seeds are inside? Are there the same number of seeds inside similar fruits? (It can vary from plant to plant.) Explain that they will do an activity to find out about the number of seeds produced by a plant and how this relates to seed survival.
2. Group the students in pairs. Pass around a bowl of cherry tomatoes, the plastic knives and paper plates. Ask them to pick one of each. How many seeds do they think are inside? Have each of them record their guess. Review the class guesses.
3. Have the students cut their tomato in half and ask each partner to count the seeds inside one half of their tomato. Remind them that it helps to group the seed by tens to aid in counting. Ask them to add up the number of seeds in each half to get the total number inside. How did this compare with their prediction? Review and record the class totals.
4. Ask the students how many seeds it takes to grow one tomato plant? (Just one seed.) Write the word *seed* on one (or two) of the index cards. Ask the students what kinds of things will help this seed to germinate and grow into a healthy plant. (Plenty of sunshine, enough space, good soil, enough water, fertilizer, weeding, warm weather, etc.) Record each idea on a separate index card. When you have listed as many positive growth conditions as the class can generate, duplicate or triplicate some of the cards until you have used 2/3 of all the cards.
5. How many tomato plants could they potentially grow from their cherry tomato? (The same number of plants as seeds.) Challenge them with a little math. Explain that one cherry tomato plant can have as many as 50 cherry tomatoes. How many plants could they grow from the seeds of all those cherry tomatoes, assuming they all have the same number of seeds? (The number of seeds multiplied by fifty).
6. Ask the students why tomatoes aren't growing everywhere? Record possible hazards to the seed germination and growth on the remaining index cards. (Drought, too cold, too wet,

Extensions:

a. Count and compare the number of seeds produced by different plants. Use a pumpkin at Halloween and enjoy a snack of roasted seeds. Look not only at the fruits we eat but also trees, wild flowers and common weeds.

b. Read and discuss *THE TINY SEED* by Eric Carle (Picture Book Studio Ltd., 1987). This could also be used as an introduction to the activity.

Directions: (continued)

competition from other plants, disease, some are eaten or stepped on, etc.)

7. Explain that they will now be enacting the risky life of a little seed. Pass out the index cards to the students. Explain that one or two students are seeds and the rest are positive or negative growth conditions. Explain that they should look at their card but keep the information on it a secret. In a large indoor or outdoor space set up four bases equally spaced apart. Explain to the students that when you say 'Go!', they should run around the bases in a circle. When you say 'Stop!' they should run to the nearest base.



8. Ask the "seed" to reveal where it has landed. Ask the other students to reveal the conditions on their cards. Have the students determine whether or not the seed is able to survive and grow in this spot. Check the conditions on the other bases to see if the seed could have possibly germinated.

9. Collect the cards, reshuffle and distribute them again to play another round. Was the seed able to survive this time? Play the game a few more times and be sure to keep a tally of the seeds survival rate. As a conclusion, ask the students why high numbers of seeds are produced.