

Tip Off: Growing Strawberry Tips in the Classroom

Liz Driscoll, Gina Fernandez, Megan Sedaghat

Materials:

- Strawberry tips
- Scale that measures small weights or mass (grams)
- Soil
- Spray bottle of water
- Container to hold planted tips and soil
- Gallon sized bag that will hold the soil container
- Optional: “clams” to protect soil container (a clam is that thing that you buy the strawberry fruit in.)
- Science journal for each child
- Teacher journal (or a large tablet.)

Background Information

In the southeastern United States, most strawberries are grown as an annual crop. Strawberries produced in a northern climate are typically grown as perennials. As an annual crop in the southeast, strawberries must be planted each year. Strawberries produce runners, which are stems that grow horizontally, and as they spread, new plantlets, or daughter plants, will form from each main plant, or mother plant. The plantlets or daughter plants are used to start a new strawberry planting each fall. The daughter plants are cut from the mother plant and now called tips, rooted and then put into the garden or field. This method of starting new strawberry plants in this way is called vegetative propagation.

North Carolina strawberry farmers have a couple of options to consider when planting their strawberries every fall. Using the daughter plant cuttings from the mother plant are called “plugs.” Plugs are more expensive to produce but can be planted with farm machinery and transplant well into the field with limited plant death. “Fresh dug” plants are rooted strawberry plants that are dug from the field and transplanted back into the field in a different location. This method requires a lot of farm labor and greater management to ensure transplant success, but are less expensive to produce than plugs. Some farmers plant unrooted strawberries directly into the ground. Read more here.

Show students a picture or have a live strawberry plant and ask them to name any parts they might know. Compare what the students are doing with what the farmers are doing. Share with the students that farmers are gathering “tips” or “daughter plants” and preparing for them to grow. Explain that the farmer’s and the students will be vegetatively propagating the tips or starting a new plant from an existing plant. The farmer’s strawberries are not in the fields yet, and neither will the students’. Pick one tip and have the students carefully study it. Encourage them describe what they see using attribute words (color, size, number).

Have the students date their science journal page. Draw a diagram of the tip in the science journal. Be sure to label the number of leaves. (Someone may notice there are no

roots on these tips.) Describe how to set the scale, using a plate to put the tip on and make it balance out to zero before measuring. Place one tip on the plate. Have several students come up to read the measurement. Record the measurement on the journal page. Fill the soil containers with moist peat-based potting soil. Have one student make a hole in the soil with his finger. Place the bottom of the tip in the hole and gently tap the soil around the bottom. Put a small marker near the tip that the student drew and weighed. Repeat with all of the tips. Make sure the tips are well watered with water from the spray bottle.

Record the process in the science journals. Place the soil containers in the clams and then into the bag.

Place the tips in a sunny window or under grow lights. It is important that the tips stay very moist. Provide a high humidity environment by misting water gently on the tips 1-2x, 3 to 4 times a day. The soil should never be dry. Condensation on the bag is a good sign. Over the next few days watch the plants for deterioration. Tips dry out and perish very easily, be sure to keep the humidity high in the growing system.

Each day have a “tip observer” report to the class on any changes in the tips. Students may note root growth, new leaves, symptoms of disease or environmental stress in the plants. When the tips are ready to plant, students should weigh them again. Compare their initial weight to the final weight

Digging Deeper: Growing Strawberries from Seeds

While strawberries are commercially grown by taking tips from other plants, they can also be started from seeds. Seed grown strawberries are genetically different from their parents and may have interesting characteristics. Strawberries are unusual because they have their seeds on the outside of the fruit. To extract the seeds for planting, put 4-6 berries in a blender and fill with water. Blender just enough to separate the seeds and fruit pulp. The unripe seeds will float to the top and are not good for planting – strain these off. The good seeds will settle to the bottom. Pour off the liquid and pulp and collect the seeds through through a strainer. Rinse with water and then dry on a paper towel. Once the seeds have dried, scrape them off and sprinkle into a pot filled with moistened potting media. Lightly cover the seeds with soil (1/8” deep) and mist water over top. Place in a warm location and wait for germination to occur anywhere from 2-8 weeks. Once the seedlings are large enough, gently transplant by loosening the soil and pulling the plants away by the leaves. Poke a small hole in another pot and tuck the seedling in with soil.

Questions to think about:

How are the tips different from other plants you have planted?

Why do you think it is so important to keep the tips moist all the time?

Tips on tips:

The roots on the tips should begin to sprout in quite a short time. The tips need so much water because they are losing water through the leaves. Plants dry out quickly, so be sure to keep the humidity high. If you can't plant the tips right away, store them in the refrigerator for up to a week.

Life Skill Questions for students:

Do you agree on what observations are being made?

Why is it important that we record data?

How does communicating your findings help you understand?

What do you think about sharing responsibility for accomplishing our project?