

MATERIALS

- 8 pruning shears
- 2 harvest bowls
- Compost bucket
- Almonds (2/3 cup), parmesan cheese (for grating 1 cup), olive oil (1 cup), sea salt
- Crackers or French Bread Slices
- Serving Bowl, Measuring Spoons/Cups
- Cutting Boards, Kids' Knives
- 2 Wooden Spoons
- Chopper, Cheese Grater

PREPARATION

- Check garlic plants for scape production. You should notice a seed stalk that has grown up from the center of the plant. It has a white, swan-like head and a curl to its green neck.
- Purchase almonds, parmesan cheese, and crackers or French bread. Make sure olive oil and salt is available.
- Find a location for the blender and place the pesto materials nearby.

PROCEDURE

Part 1: Harvest Garlic Scapes

- Explain that today we will be pruning the garlic. Ask students whether they've heard the word "pruning" before, then define pruning as "removing parts of a plant." *Have you ever seen a neighbor trimming the hedges along the sidewalk. That's pruning!* Point out the flower shoot, or scape, emerging from the center of the garlic plant. "This flower shoot is called a *scape*. We remove scapes while they are still young so that the plant can direct its energy back into bulb production. How many scapes can you spot in this bed?" Instruct students to silently count first, then encourage responses. Count together as a group.
- "We are going to use these scapes to make pesto. Pesto is a paste, often used to flavor pasta or bread. The word *pesto* comes from an Italian word meaning *to crush*. In today's lesson we will hear another word that comes from the same root. See if you can identify it!" (*pestle*)
- Introduce the three tasks for the day: harvesting, chopping, and grinding. Eight harvesters will harvest the scapes. Eight choppers will chop them into smaller pieces. Eight grinders will use the mortar and pestle to grind them into a paste. Using a pair of clean pruning shears, demonstrate how to harvest garlic scapes at their base and toss in a harvest bowl. Review safe scissor use and where to place the shears when finished. Distribute shears to the 8 harvesters and direct them to complete their task.

Part 2: Make Pesto

- With a knife and cutting board, demonstrate how to cut the white head off of a garlic scape. Place it into a compost bucket. Then, chop the scape into half-inch pieces and dump it into a mortar and pestle. Only after dumping the cut pieces of one scape into a mortar should students select another scape to cut.
- With the mortar and pestle, demonstrate how to grind the scape pieces. Once they form a smooth, fairly consistent pulp, use a spoon to scoop the contents into one of the harvest bowls (at this point all the uncut scapes can be consolidated into the other bowl). Grinders will continue to grind as more scapes are chopped.
- Distribute cutting boards and nylon knives to the choppers and mortar and pestle to the grinders and direct them to complete their tasks.
- Place the almonds in the manual chopper and have 4 of the harvesters pass it around, chopping the almonds. Ask the other 4 harvesters to take turns grating the parmesan with a side to side motion on the finest setting until there is about 1 cup worth of grated parmesan. Dump these into the grinders' mortars.
- Measure 1 cup of olive oil and dump into the pesto bowl. Stir, seasoning with salt to taste.
- Give students crackers or pieces of sliced, toasted French bread to dip into the pesto. (No double-dipping!)

Pruning Garlic: Is Bigger Better?

Food & Technology

ENGAGE

Discuss in a circle: *When have you heard that bigger is better? Was it true?* If students need prompting, suggest fast food or cars or houses or bureaucracies as topics for consideration.

OBJECTIVES

- Students will be able to explain why the garlic bulb gets bigger when you remove its seed stalk.
- Students will be able to evaluate the saying “Bigger is better” in relation to garlic pruning.

EXPLAIN

Pruning Garlic

At this point in the growing season, garlic plants are in the middle of their life cycle and bulbs are not yet fully developed. Once a flower starts to form, the plant becomes distracted. It diverts its energy from plumping up the bulb and, instead, redirects it to creating a seed stalk and flower head. As food gardeners, we are more interested in big bulbs than pretty flowers. By removing the seed stalks we can trick the plant into directing its energy back into the bulb, and over the next month it will plump up nicely. The plant, realizing that it won't be able to make any seeds this season, sends its energy back into the bulb in hopes that the cloves will survive the winter and produce seeds next season.

Is Bigger Better?

If we keep from pruning the garlic scapes, the plant will get taller (the seed stalk will continue to shoot up from the center). If you judge the garlic on the surface, you might think that the taller garlic is the better garlic. Certainly, it becomes more impressive! But if you look beneath the surface of the soil at the garlic bulb—the part we eat—you will notice that the tallest garlic has the smallest bulb. Which kind of bigger is better? Is the short garlic with the big bulb better? It all depends on the situation. When we prune the garlic, we get a lot of food from it: we can eat the scapes, and we can eat the large bulb. But when the garlic grows tall, we get something else. The scape produces bulbils, which are little seeds that

ADDITIONAL CONTENT INTEGRATION (see previous page)

Leave three plants without pruning. Next week compare the height of the garlic plants that were pruned with the height of the plants that were not pruned. Then, when harvest time comes, compare the diameter of the bulbs from the plants that were pruned with the diameter of the bulbs from plants that were not pruned.

ADDITIONAL MATERIALS

- Chart paper
- Marker

EVALUATE

Journal prompt: Describe a situation when bigger really is better. Now describe a situation when smaller is better.