

## MATERIALS

- (12) Basil and (12) Nasturtium seedlings
- Yardsticks
- Hand trowels, stored in a bucket
- Solid compost or revita, stored in a bucket
- Fish emulsion and liquid kelp
- Large watering can and 8 small watering cans

## PREPARATION

- Make sure seedlings have been hardened off
- Consult your garden map to determine planting location (and number) of each seedling.
- Fill the large watering can with water
- Place bucket of hand trowels, compost, and watering cans by tomato bed(s).

## PROCEDURE

### Part 1: Demonstrate Procedure

- As a class, gather around the tomato bed(s): *Tomato plants grow well in the company of basil and nasturtium. When certain plants grow well together, we refer to them as 'companion plants'. The best companions keep pests away and improve the soil.*
- Choose a student volunteer to water all the seedlings
- The nasturtiums will be planted along the long edge facing North-East. This side of the bed will get a little less sun once the tomatoes are full-grown. The basil will be planted along the long edge facing South-West. Use a yardstick to identify the location for planting the first nasturtium seedling: choose a corner and measure 6" in from each edge. Stick a trowel into the ground at this spot. Repeat for the basil. Then, select a few student volunteers to continue measuring down the line, sticking a trowel into the ground every 12". If measured properly, you will have 12 trowels along each 12' edges of the bed.
- Dig a hole where the first trowel was placed. It should be a little deeper than the pot and an inch or so wider. After digging the hole, return the trowel to the trowel bucket.
- Hold up the seedling and demonstrate how to gently tear off the rim of the newspaper pot so that no newspaper will be exposed to the air once the seedling is planted. *Exposed newspaper wicks moisture from the roots and dries them out.* Leave the rest of the newspaper pot intact.
- Put a small handful of compost or Revita into the bottom of the hole and place the seedling on top of the compost. The surface of the seedling's soil should be flush with the surface of the soil around it. Add or remove soil as needed. Once the seedling is positioned properly within the hole, fill in the rest of the hole. Use your hands (not a trowel) to firm the soil around the seedling. This will close any pockets of air around the seedling's roots.

### Part 2: Student Practice

- Each student will have the opportunity to transplant a seedling. Place half the class on the nasturtium side of the bed and half the class on the basil side. On each side, only half the group will plant at a time (to avoid crowding). The first six students on each side will space themselves at every other trowel. While they are digging their holes, the other students in the group can rip the rims off the first 6 seedlings that will be planted, then hand them to the planters. After these are planted, students should switch: the rippers become diggers and the diggers become rippers.
- Mix the fish emulsion and liquid kelp in the large watering can. Pour into the small watering cans. Have students water the seedlings.

# Companion Planting

Food & Technology

## ENGAGE

Gather in the outdoor classroom. Introduce basil and nasturtium seedlings. “Both of these plants serve different functions in the garden. One is classified as an herb. This plant produces edible aromatic leaves that are often used in Italian cuisine.” Introduce basil and pass it around for students to examine. “The other plant is a flower. This plant attracts beneficial pollinators to the garden. It also deters certain types of pests.” Introduce nasturtiums and pass around. For each plant ask: “Which plant parts have formed already? Which parts have yet to form? What parts, if any, can we harvest and eat?”

## OBJECTIVES

- Students will be able to define *companion planting*
- Students will understand the unique benefits of inter-planting tomatoes, basil, and marigold
- Students will understand how to successfully transplant basil and marigold seedlings

## EXPLAIN

### Benefits of Companion Planting

Plants are a picky bunch – some do well in the company of many different plants, while others prefer to be surrounded by a select few. It’s nothing personal, it’s just nature at work. Every plant has its own unique set of growing preferences. While some plants do well in crowds, others need plenty of personal space.

In the garden, as in life, there friends and foes. When designing your planting schemes, it’s important to know which plants go together and which plants don’t. Peas, for example, do not grow well when planted with onions or garlic. Perhaps the picky pea plant is sensitive to the strong odors of the *Allium* family. We can only speculate. Lettuce, on the other hand, can be inter-planted with an endless variety of other crops. Come one, come all! In fact, lettuce has plenty of plant allies and companions, including members of the aforementioned *Allium* family.

Plants that serve and benefit one another in unique ways are known as “companion plants”. In this lesson, we are introduced to three plant companions – tomatoes, basil, and marigold. These plants might come from different plant families, but they all seem to have a special fondness for one another. When planted in close proximity to tomatoes, basil is said to enhance the plant’s growth and flavor. As an added bonus, basil is also rumored to repel select pests, such as mosquitoes and flies. As if that wasn’t enough, marigolds add some extra pest-deterrent muscle to the mix. Below ground, marigold roots secrete a special substance that is said to kill soil parasites, like the tenacious nematode. Marigolds also emit a strong smell that helps to deter whiteflies, a common tomato pest in the garden and greenhouse.

## ADDITIONAL CONTENT INTEGRATION *(see previous page)*

Pair the idea of companion planting with an art project. Provide students with photos of companion plants, and allow students to design gardens using these pairings. Consider including patterning elements into the design process.

For companion planting combinations, visit:

[http://www.seedsofchange.com/newsletter/issue\\_55/companion\\_planting.aspx](http://www.seedsofchange.com/newsletter/issue_55/companion_planting.aspx)

## ADDITIONAL MATERIALS

- Companion plant photos
- Paper
- Paint or other medium for art project

## EVALUATE

**Journal prompt:** What are the benefits of planting marigolds in the garden? What positive effect does basil have on tomato plants?