



Planning the Garden

In this workshop, students work in groups to develop a plan for the garden. We begin to discuss how the garden will differ from most conventional farms – a theme carried through the grade 5 workshops; in particular, we discuss how plant diversity contributes to a sustainable garden. We build on concepts from lower level garden workshops around companion planting to discuss in more detail how we can use a diversity of plants to our benefit in the garden. Students choose the vegetables they wish to plant in the garden and justify their choices with companion planting principles.

Grade Levels

Grades 5

Curriculum Objectives

Grade 5

Science and Technology: Understanding Life Systems

Overall Expectations

Specific Expectations

- Assess the effects of social and environmental factors on human health, and propose ways in which individuals can reduce the harmful effects of these factors and take advantage of those that are beneficial.

Health and Physical Education: Healthy Living

Specific Expectations

- Demonstrate the ability to make connections that relate to health and well-being – how their choices and behaviours affect both themselves and others, and how factors in the world around them affect their own and others' health and well-being.

Mathematics: Measurement

Specific Expectations

- Estimate and measure the perimeter and area of regular and irregular polygons using a variety of tools and strategies;

Materials

- GUO Garden Planning Cards
- Paper roll cut into square segments (2 feet x 2 feet) – one for each group of 3-4 students
- Colouring crayons, markers or pencils
- Rulers
- GUO Garden Planning Calendar
- Companion Planting Slide Deck
- GUO Biodiversity Planning Cards (Section: Plants)

Activity

Part 1: Planning your garden

Before starting to plan the garden, take some time to discuss with the students and reflect about why we're planting a schools garden. Discussion points:

- What is the value of growing our own vegetable gardens at the school?
- What do we mean when we say our garden is organic?

Using the slide deck, present some photos of conventional farms and ask the students what they notice about these photos. What are the words that come to mind? What are some of the risks this type of activity might pose? What solutions do conventional farmers use to deal with pests and disease problems that risk damaging their crops?

- Why do you think it might not be a good idea to use pesticides or synthetic fertilizers? Where could they end up?

Since we'll be planting an organic garden, what are some of the ways we can enrich our soil and keep pests away without using pesticides or synthetic fertilizers.

Together, brainstorm a list of the strategies you will use. Once a preliminary list is complete, begin a discussion about companion planting. Let the students know that they will be using this knowledge to plan where they will plant various vegetables in their garden.

The first way of deterring pests and preventing losses in our garden will be to plant many different varieties of vegetables. Planting many different vegetables is also important for our use of the garden, so that we have vegetables ready to harvest at different times of the year.

Part 2: Companion Planting

Plants, like humans have companions or "friends" they prefer to be next to.

- What do we think that means?
- Think of what a friend does for you? How could plants do this for each other?

Use the slide deck to discuss how different plants help each other in more detail. With each slide add to a list of plants and vegetables that could be included in the garden.

Slide 1. Attracting Beneficial Insects

Some plants are particularly effective at attracting beneficial insects to the garden, including pollinators such as bees and butterflies. These plants tend to be ones that have attractive flower blossoms. To make sure we attract pollinators all season, we have to have blossoms in the spring, summer and fall. Make a list of possible flowering plants to include in the garden.

Slide 2. Deterring Harmful Insects

Instead of using pesticides to deter pest from the garden, we can include plants that are particularly effective at repelling harmful insects. Some plants, like onions, have a strong odour that discourages pests from entering the garden, while others, like nasturtiums, trap pests by attracting them and coaxing them away from other vegetable plants. Add the vegetables listed as examples to your list of possible vegetables to be included in the garden.

Slide 3. Sharing Nutrients

Some plant combinations work well because they allow plants to share nutrients with little competition: shallow rooted plants grow well near deep rooted plants because each can get their nutrients from different levels. Brainstrom a list of shallow and deep rooted vegetables and add them to the list of possible vegetables to include in the garden.

Slide 4. Giving Nutrients

Beans and peas are part of a special plant family called “Legumes” – they are the only plants able to put nutrients back into the ground. Specifically, they are able to take Nitrogen – a very important nutrient that helps plants produce green leaves – out of the air and put it into the soil, where other plants are able to then absorb it. Leafy greens, like lettuce, are particularly in need of nitrogen. Make a list of other leafy vegetables you could include in the garden next to legumes.

Slide 5. Sun and Shade plants

Plants are a lot like people – some love to sun-bathe, while others prefer the shade. Luckily, we can use plant structures to our advantage to be able to provide each plant with the amount of sunlight they prefer. Taller plants, like sunflowers, or climbing vines, like beans, can provide shade for shade-loving vegetables, like lettuce and spinach. Make a list of tall and climbing plants to add to your garden list.

Part 3: Mapping the Garden

Divide the students into small groups of 3-4 students and provide each group with:

- A biodiversity planning card that explains one type of companion plant interaction that was discussed
- One sheet of 2’x2’ paper
- Colouring pencils

Let the groups know that they are to divide their paper into four equal square sections and use allocate each square to a single vegetable, chosen based on the interaction they are portraying. Once the teams have selected which vegetables to include, they can use the garden planning cards to draw each of the 4 square feet with the appropriate number of vegetables depending on the space required of each vegetable. Together students should discuss how the neighbouring plants are helping each other and draw connections onto the map.

Part 4: Sharing the map

Invite groups to present their selection and map to the rest of the class, letting the other students know what they chose and the reasons these plants work well together. Compile a list of all the vegetables selected by the groups to plant for planting and seed starting follow-up workshops.