



## Planning the Garden

*As a class, come up with a garden plan: choose plants, draw garden layout with spacing/measurements. Plan for the harvest (what do we want to eat?) Make a calendar for planting: what needs to be planted when?*

### Grade Levels

Grades 3-5

### Curriculum Objectives

#### Grade 3

Assess ways in which plants have an impact on society and the environment, and ways in which human activity has an impact on plants and plant habitats; (Grade 3 Science and Technology: Overall Expectation A1)

Investigate similarities and differences in the characteristics of various plants, and ways in which the characteristics of plants relate to the environment in which they grow; (Grade 3 Science and Technology: Overall Expectation A2)

Demonstrate an understanding that plants grow and change and have distinct characteristics; (Grade 3 Science and Technology: Overall Expectation A3)

Estimate, measure, and record length, perimeter, area, mass, capacity, time, and temperature, using standard units; (Grade 3 Math/Measurement Overall Expectation 1)

Compare, describe, and order objects, using attributes measured in standard units; (Grade 3 Math/Measurement Overall Expectation 2)

Describe, extend, and create a variety of numeric patterns and geometric patterns; (Grade 3 Math/Patterning & Algebra Overall Expectation 1)

#### Grade 4

Analyse the effects of human activities on habitats and communities; (Grade 4 Science and Technology: Overall Expectation A1)

Investigate the interdependence of plants and animals within specific habitats and communities; (Grade 4 Science and Technology: Overall Expectation A2)

Estimate, measure, and record length, perimeter, area, mass, capacity, volume, and elapsed time, using a variety of strategies; (Grade 4 Math/Measurement Overall Expectation 1)

Determine the relationships among units and measurable attributes, including the area and perimeter of rectangles; (Grade 4 Math/Measurement Overall Expectation 2)

Identify and describe the location of an object, using a grid map, and reflect two-dimensional shapes ; (Grade 4 Math/Geometry and Spatial Sense Overall Expectation 3)

### Grade 5

Estimate, measure, and record perimeter, area, temperature change, and elapsed time, using a variety of strategies; (Grade 5 Math/Measurement Overall Expectation 1)

Determine the relationships among units and measurable attributes, including the area of a rectangle and the volume of a rectangular prism. (Grade 5 Math/Measurement Overall Expectation 2)

### Materials

- GUO Garden Planning Cards
- Blank paper to cut into 30 cm squares (approximately)
- Tape
- Colouring pencils, crayons or markers
- Rulers
- GUO Garden Planning Calendar

### Activity

#### Part 1: Building your garden

Before starting to plan the garden, take some time to discuss with the students and reflect about why we're planting a school's 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? (We won't be using pesticides)
- Why do you think it might not be a good idea to use pesticides? Where could they end up? (Soil, water, on our food).

To make sure that our garden does well and we get a big harvest in the spring and the fall, let's think about what our plants and garden will need. Discussion points:

- What are some of the things our plants will need to grow? (nutrients [soil], warmth [sun], water, care, etc.)

Have the students pretend to be the tiny seed of their favorite vegetable, bring them together to sit very close and then explain that you will be "adding" the things the students identified as necessary to healthy growth so that they may grow to their full potential. As you "add" these things ("Now the sun is coming out.....and now the clouds are coming in to rain..." etc.) let them to stretch out their legs as their roots grow and then stretch out their arms as their leaves grow.....When they grow up and stretch their arms, ask them "What else do plants need?" – SPACE!

Remind students that plants need different amounts of space.

- What kinds of vegetables might take a lot of room?
- Which ones take very little room?

Have the students pick a vegetable they want to plant in the garden and come get a garden planning card. Let them know that these cards will tell them how much space their particular vegetable will need. Each student follows the instructions on the cards to divide their 30cm square paper into appropriate smaller squares (either by folding or measuring); in the middle of each smaller square students should

draw their vegetable (be creative and use colour!). At the end have students identify what their vegetable is somewhere on the paper, and put their names on the back.

After the students are done drawing their vegetable square, have them come up to fill in the calendar with information on when to plant and harvest the vegetable.

## Part 2: Companion Planting

Something else that plants do for each other is act as companions. Discussion:

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

(see Background Information)

Ask the students to use their garden planning cards to find out what the companions for their vegetable are and to find someone in the class whose vegetable is one of their “companions.” Once they have found their companion, invite them to lay out the squares on the ground in the shape of the bed outside (typically: 3 squares by 8 squares) –making sure to place companions next to each other. Tape them together to form a map of the garden.

## Background Information: Companion Planting

There are different types of ways plants can be each other’s companion:

*Attractors:* Some (like flowers) plants **attract pollinators** (like bees) bringing them close to the garden where they help other plants reproduce. Some plants attract predators (like bugs) so that they stay away from your vegetables. (Examples: Nasturtium, Parsley)

*Confusers:* These are the masked bewilders and tricksters! These plants **confuse pests** away from other vegetables. Parsley for example has the same wispy tops as carrots and so confuses white flies away from carrots.

*Enchanters:* These are the good neighbour plants, they help other vegetables grow, and improve their flavor and size. Basil improves the taste and size of tomatoes.

*Protectors:* These plants are the guardians of the garden and **protect** others from nature’s havoc, like too much wind or sun. For example, peas and bean climbing up poles and nets **provide shade** for vegetables like lettuce that don’t like the heat.