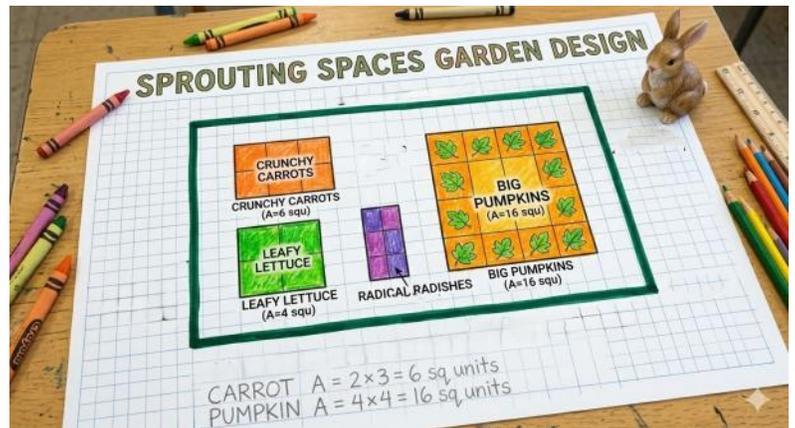


# The "Sprouting Spaces" Garden Design

**Objective:** Students will design a spring vegetable garden on grid paper, calculating the total area for crops and the perimeter needed for fencing to protect their plants.

## Materials Needed

- 1cm or 1/2 inch Grid Paper
- Colored pencils or markers
- Ruler
- "Seed Menu" (see below)
- The "Fence Budget" (The perimeter constraint)



## Student Directions

### 1. Plan Your Plot

Every great gardener starts with a plan! You have been given a piece of "land" (your grid paper). Your total garden must be a rectangle or a square.

The Rule: Your garden's total area cannot be larger than 100 square units.

### 2. Choose Your Crops

Select at least three different items from the Seed Menu to plant. Each crop must be drawn as a rectangle or square on your grid.

Tip: Use different colors for different vegetables so you can tell them apart!

### Seed Menu:

- Crunchy Carrots: Requires an area of 12 square units.
- Leafy Lettuce: Requires an area of 9 square units.
- Radical Radishes: Requires an area of 6 square units.
- Big Pumpkins: Requires an area of 16 square units.

### 3. Map It Out

Draw your crops onto your grid paper. Make sure they don't overlap! You can leave "walking paths" (empty grid squares) between your vegetables.

### 4. Build the Fence

Rabbits love spring gardens! You need to build a fence around the entire outside edge of your garden.

Use a dark marker to trace the outside boundary of your total garden plot.

Count the units along the outside edge to find your Perimeter.

### **The Gardener's Report**

Students must complete a table (included) to prove their math is correct:

### **Reflection Questions**

If you wanted to double the size of your Carrot patch, what would the new area be?

Which measurement (Area or Perimeter) tells you how much dirt you need to cover the ground?

Which measurement (Area or Perimeter) tells you how much wire you need to buy for the fence?

### **Teacher's Modification Tip**

For a Challenge: Give students a "Fixed Perimeter" (e.g., "You only have 30 meters of fencing") and ask them to find the largest possible area they can enclosed with that specific amount of fence.

For Support: Pre-draw several rectangles of different sizes on the grid paper and have students "fill them in" with specific crops.



Name: \_\_\_\_\_

### Student Directions

#### 1. Plan Your Plot

Every great gardener starts with a plan! You have been given a piece of "land" (your grid paper). Your total garden must be a rectangle or a square.

The Rule: Your garden's total area cannot be larger than 200 square units.

#### 2. Choose Your Crops

Select at least three different items from the Seed Menu to plant. Each crop must be drawn as a rectangle or square on your grid.

Tip: Use different colors for different vegetables so you can tell them apart!

#### Seed Menu:

- Crunchy Carrots: Requires an area of 12 square units.
- Leafy Lettuce: Requires an area of 9 square units.
- Radical Radishes: Requires an area of 6 square units.
- Big Pumpkins: Requires an area of 16 square units.

Crop/Item	Shape	Length	Width	Area



Name: \_\_\_\_\_

## Reflection Questions

1. If you wanted to double the size of your Carrot patch, what would the new area be?

\_\_\_\_\_

2. Which measurement (Area or Perimeter) tells you how much dirt you need to cover the ground?

\_\_\_\_\_

3. Which measurement (Area or Perimeter) tells you how much wire you need to buy for the fence?

\_\_\_\_\_

