



Math Challenge #1: Veggie Garden

THE STORY:

Viv, Luna, Ron, Grace, Niko and Kai are the Dragonfly Kids. These friends work together to help solve problems in their homes, school and the town of Sun Valley. The mayor wants to help the people of Sun Valley by planting vegetable gardens for the people in town to share. The mayor has asked the Dragonfly Kids to help him plan and plant the gardens. There will be three garden plots of different sizes. The kids will work in teams of 2 to plan and plant one vegetable garden.



Viv and Ron will plan the TOMATO GARDEN. They plan to grow many different types of tomatoes. Tomatoes grow tall, so they need support from cages to keep them from falling over.



Grace and Kai will plan the ZUCCHINI (zoo-kee-nee) AND WATERMELON GARDEN. These vegetables grow on stems and vines. They need plenty of space for the plant and vines to grow.



Luna and Niko will plan the CARROT AND LETTUCE GARDEN. Lettuce grows in bunches close to the soil and carrots grow under the soil with their leafy green tops sticking out above the soil.

YOUR TASK:

You will help the Dragonfly Kids choose plots to plant each garden. You will help them plan the three vegetable gardens and present the garden plans to an audience.

You will:

1. Learn what the plants in each garden need to grow and how they grow.
2. Use measurements of the garden space and the information you have about how much space the plants need to grow to plan the gardens.
3. Draw the design plan (with measurements) for the garden and show where the different plants should be planted.
4. Figure out how many vegetables each garden will yield.
5. Present your plan for the vegetable garden to an audience.

YOUR AUDIENCE

You will present the plans for the vegetable gardens to a Sun Valley town meeting. Your family or your class will pretend to be the people of Sun Valley.

INFORMATION YOU'LL NEED TO GET STARTED

Viv  and Ron's 
TOMATO GARDEN



Tomato cage for support

How Tomatoes Grow

Tomatoes grow on vines from stems that grow taller and taller. Tomato plants need support (cages) to keep them straight.

Height: 6 - 8 feet tall



***Footprint:** 2 feet around

Spacing for planting: 2 feet apart

Harvest: One tomato plant will **yield 100 tomatoes during the summer.

*Footprint means the amount of space the plant takes up on the ground.

** Yield means how many vegetables/fruits you will get from a plant.

Grace  and Kai's 
ZUCCHINI (zoo-kee-nee) and WATERMELON GARDEN



How Zucchini & Watermelon Grow

Zucchini grows close to the ground on plants with large leaves.

Height: 2 feet tall

Footprint: 3 feet around

Spacing for planting: 3 feet apart

Harvest: 15 zucchinis per plant

Watermelons grow on a vine that spreads along the ground.

Height: 2 feet

Footprint: 16 foot vines

Spacing for planting: 6 feet apart with room for vines to grow up to 16 feet long

Harvest: 3 watermelons per plant

Luna  and Niko's 
CARROT and LETTUCE GARDEN



How Carrots Grow

Carrots grow under the soil, but the carrot top leaves poke up from the ground. Carrots are planted in rows.

Height: 12 inches

Footprint: 12 inches

Spacing for planting: 6 inches

Harvest: 1 carrot per plant

How Lettuce Grows

Lettuce grows as a head (or small bush). Lettuce is planted in rows.

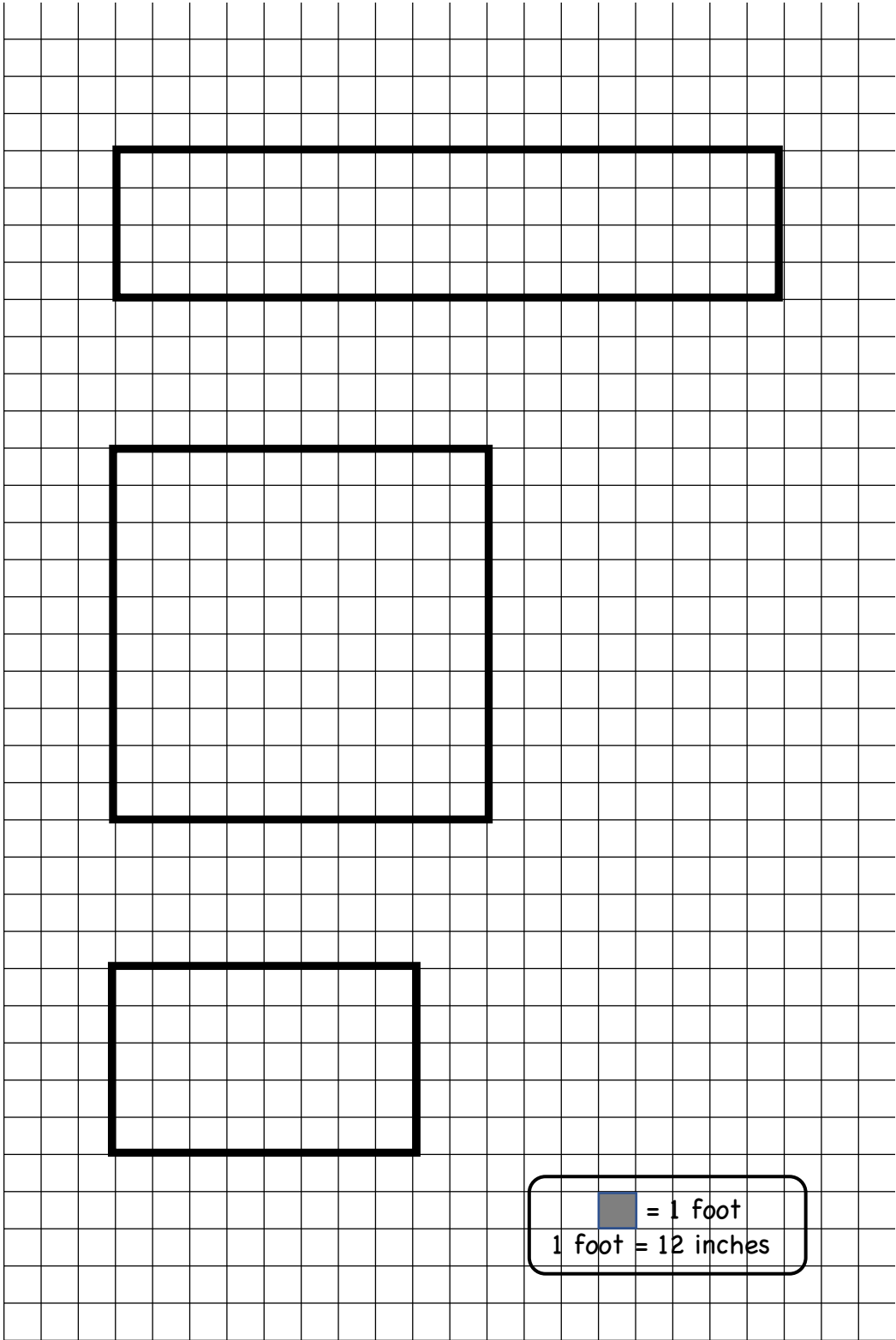
Height: 12 inches

Footprint: 12 inches

Spacing for planting: 12 inches

Harvest: 1 head of lettuce per plant

GARDEN PLOT PLAN



PLANNING THE GARDENS



STEP 1:

The first step in planning the garden is to record how big each garden plot is.

Count the squares for each garden plot and write the measurement for each side of the garden plot.

Remember to look at the key - each square is equal to 1 foot.

STEP 2:

The next step is to use the information about how each vegetable grows to decide which vegetables should be planted in which garden plot.

Think about these questions:

1. How big do the plants get?
2. Do the plants grow up or spread out on the ground?
3. How far apart should the seeds be planted?
4. Which plot is best for each garden?

Label each garden on the garden plot plan on page 2.



STEP 3:

Draw or make a mark on the plan to show where each vegetable plant should be planted in each garden.

You may want to use the name or the first letter of the plant to show each plant. Z for zucchini or T for tomato.

Be sure that you leave space between the plants so they have room to grow. Check the plant growing information to be sure that you know how much space to leave.



STEP 4:

Use a colored pencil to lightly show the plant *footprint* when it is fully grown.

The *footprint* is how much space it will take on the ground when it is fully grown.

The colors you use will be for leaves, vines and the vegetables. (*Orange carrots and green leaves, red tomatoes with green leaves and stems.*)



STEP 5:

How many vegetables can you get from each garden each summer?

Use the information about the vegetables to find out how many vegetables each plant will produce in a summer.

1. Find the total number of vegetables from each plant.
2. Find the total number of the vegetables from the same type of plant. (*How many carrots from all of the plants in the garden plot?*)
3. Challenge: How many vegetables will *all* of the gardens yield in total?



STEP 6:

Show the vegetable garden plot plan to the audience.













Tell the audience:

1. Why you chose each garden plot for those vegetables.
2. How far apart each vegetable should be planted in each garden plot and why.
3. How many vegetable plants of each kind can grow in each garden.
4. How many vegetables you can grow in the gardens each summer.
5. What you learned from helping the Dragonfly Kids plan the gardens.



THINKING ABOUT MY WORK

Color the face that shows how you feel about the work you did on the Veggie Garden Challenge.

I tried my hardest on this challenge.			
My math skills helped me to correctly plan the garden.			
I was neat and careful when drawing and labeling the plants on my plan.			
My presentation was clear and correct.			

What I enjoyed most about this challenge:



WOULD YOU LIKE TO PLANT A VEGETABLE GARDEN OF YOUR OWN?

Use this garden plot plan to help you. Measure the space you have and draw it here.

A large grid for drawing a garden plot. The grid is 20 units wide and 30 units high. A legend in the bottom right corner shows a shaded square representing 1 foot and states "1 foot = 12 inches".

What vegetables will you grow? Draw them on the plan.