

## Fencing a Garden (Teacher Directions)

### Objective:

TLW apply area and perimeter concepts to a real world situation.

### Materials for each team:

- Chart paper
- 1-inch grid paper (at least 4 sheets)
- Markers
- Scissors
- Dry erase boards and markers
- 1-inch square tiles, plastic or paper (at least 24 per person)
- Glue sticks
- Fencing a Garden handout (1 per person)

### Lesson Description:

1. Review basic area and perimeter concepts.
2. Say, “Today we are going to apply those ideas to a real-life situation. We are going to imagine that you have been given some bags of topsoil and some money to create a garden on the school grounds. We will need to design the garden, and we’ll need to buy a fence to go around the garden.”
3. Distribute the materials. Have team members discuss the area of the largest garden possible (24 square feet).
4. Have everyone begin designing their gardens. Make sure they understand that they need to use all 24 tiles and that each person needs to design a different garden from everyone else on the team. Have them figure their perimeters and glue on paper.
5. Let each team post their results and share their findings. Ask them if they think it’s possible to have a garden with an even smaller perimeter. Send teams back to tables to work together to complete the assignment.
6. End the lesson by having students do a Think-Pair-Share: “How did we use area and perimeter concepts in today’s lesson?”

# Fencing a Garden

Name \_\_\_\_\_

You have been given 3 bags of topsoil to use in creating a garden. Each bag will cover 8 square feet of space. In addition, you have been given money to buy a fence, and the cost of the fence is \$5.95 per linear foot. What is the largest garden you can create? What are the dimensions of the largest garden that will result in the cheapest fence?



1. What is the area of the largest garden you can create with the topsoil? \_\_\_\_\_

Explain. \_\_\_\_\_

\_\_\_\_\_

2. What are some possible shapes for your garden? Explore using the square tiles and grid paper. Each person on the team needs to design one garden on grid paper, cut it out, and figure out the amount of fence needed to go around the garden. Draw at least 3 different gardens below and give the amount of fence needed for each.

3. Glue your garden on the chart paper and label it with the amount of fence needed to enclose it. Compare the gardens everyone created. Which one would result in the least expensive fence? Is it possible to create a garden with an even cheaper fence? If so, use another sheet of grid paper to create that garden. In the space below, draw the garden that would result in the cheapest fence. Be sure to label the dimensions.

4. Discuss the following questions with your team. Then write your answers on another sheet of paper and staple it to this one.
  - a. How much would it cost to buy a fence for the garden above?
  - b. How do you know the garden above has the cheapest fence?
  - c. How did you figure out the cost of the fence?
  - d. How were the concepts of area and perimeter used in this activity?