Name: _____ Date: _____

One Fence, Three Gardens

Circle group

A gardener buys 12 feet of fence. She wants a rectangle of soil for her tomato plants. Which rectangle gives the plants the most room?

First, two words. The perimeter is the distance around a shape. Here, the perimeter is the 12 feet of fence. The area is the space inside the shape. It is in square feet. You find it by multiplying the length by the width.

She can make three rectangles with whole-number sides. One is 1 foot wide and 5 feet long. Add 1, 5, 1, and 5 to check the fence. It makes 12. Its area is 1 times 5, which is 5 square feet.

Another is 2 feet wide and 4 feet long. The fence is 12 feet. Its area is 2 times 4, or 8 square feet.

The third is 3 feet wide and 3 feet long. It is a square. The fence is 12 feet. Its area is 3 times 3, or 9 square feet.

The same fence made three gardens. The square held the most. The skinny one held the least.

Questions

1. How much fence does the gardener buy?

_____

_____

2. What is perimeter?

_____

_____

3. How do you find the area of a rectangle?

_____

_____

4. What is the area of the garden that is 2 feet wide and 4 feet long?

_____

_____

5. Which garden holds the most room?

_____

_____

6. Which shape should she pick for the most room, and why?

_____

_____

Words to know

perimeter: the distance all the way around a shape
area: the amount of flat space inside a shape
rectangle: a shape with four sides and four square corners
width: how wide something is from one side to the other

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

One Fence, Three Gardens

Triangle group

A gardener buys 12 feet of fence. She wants to fence in a rectangle of soil for her tomato plants. The question is, what shape of rectangle gives the plants the most room?

First, two words. The perimeter is the distance around the outside of a shape. For her garden, the perimeter is the 12 feet of fence. The area is the space inside the shape. It is measured in square feet, and you find it by multiplying the length by the width.

She can make three different rectangles with whole-number sides. One is 1 foot wide and 5 feet long. Add 1, 5, 1, and 5 to check the fence, and you get 12. Its area is 1 times 5, which is 5 square feet.

Another is 2 feet wide and 4 feet long. Again 2 plus 4 plus 2 plus 4 makes 12 feet of fence. Its area is 2 times 4, or 8 square feet.

The third is 3 feet wide and 3 feet long, a square. The fence is still 12 feet. Its area is 3 times 3, which is 9 square feet.

The same fence made three gardens, and the gardens were not the same size. The square held the most. The long, skinny garden held the least. A shape that is closer to a square usually fits more room inside the same fence.

Questions

1. How much fence does the gardener buy?

_____

_____

2. What is perimeter?

_____

_____

3. How do you find the area of a rectangle?

_____

_____

4. What is the area of the garden that is 2 feet wide and 4 feet long?

_____

_____

5. Which of the three gardens holds the most room?

_____

_____

6. If the gardener wants the most room for her tomatoes, which shape should she choose and why?

_____

_____

Words to know

perimeter: the distance all the way around a shape
area: the amount of flat space inside a shape
rectangle: a shape with four sides and four square corners
width: how wide something is from one side to the other

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

One Fence, Three Gardens

Square group

A gardener purchases exactly 12 feet of fence, and she wants to enclose a rectangle of soil for her tomato plants. The puzzle she faces is deciding which rectangle will give the plants the greatest amount of room.

First, two important words. The perimeter is the distance around the outside of a shape, and for her garden the perimeter is simply the 12 feet of fence. The area is the amount of space inside the shape. It is measured in square feet, and you calculate it by multiplying the length by the width.

She is able to build three different rectangles with whole-number sides. The first is 1 foot wide and 5 feet long. Adding 1, 5, 1, and 5 confirms that it uses 12 feet of fence, and its area is 1 times 5, which equals 5 square feet.

The second is 2 feet wide and 4 feet long. Again 2 plus 4 plus 2 plus 4 totals 12 feet of fence, and its area is 2 times 4, which equals 8 square feet.

The third is 3 feet wide and 3 feet long, which makes it a square. The fence remains 12 feet, and its area is 3 times 3, or 9 square feet.

Although the fence never changed, it produced three gardens of different sizes. The square enclosed the most space, while the long, skinny rectangle enclosed the least. A shape that is closer to a square generally fits more room inside the same length of fence.

Questions

1. How much fence does the gardener purchase?

_____

_____

2. What is the perimeter of a shape?

_____

_____

3. How do you calculate the area of a rectangle?

_____

_____

4. What is the area of the garden that is 2 feet wide and 4 feet long?

_____

_____

5. Which of the three gardens encloses the most space?

_____

_____

6. If the gardener wants the most room for tomatoes, which shape should she select and why?

_____

_____

Words to know

perimeter: the distance all the way around a shape
area: the amount of flat space inside a shape
rectangle: a shape with four sides and four square corners
width: how wide something is from one side to the other

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: One Fence, Three Gardens

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: One Fence, Three Gardens

Easier · 156 words · Flesch-Kincaid grade 1.5

1. 12 feet.
2. The distance around a shape.
3. Multiply the length by the width.
4. 8 square feet.
5. The square, 3 feet by 3 feet.
6. The square, because its area is 9 square feet with the same 12 feet of fence.

Triangle: One Fence, Three Gardens

This passage · 202 words · Flesch-Kincaid grade 2.8

1. 12 feet.
2. The distance around the outside of a shape.
3. Multiply the length by the width.
4. 8 square feet.
5. The square, which is 3 feet by 3 feet.
6. The square, because it has the greatest area, 9 square feet, from the same 12 feet of fence.

Square: One Fence, Three Gardens

Harder · 223 words · Flesch-Kincaid grade 6.3

1. Exactly 12 feet.
2. The distance around the outside of the shape.
3. Multiply the length by the width.
4. 8 square feet.
5. The square, which is 3 feet by 3 feet.
6. The square, because it has the greatest area, 9 square feet, from the same 12 feet of fence.