Playground Designer

3rd Grade Math Project · Design & Building

Grade 3 · Remedial

Name: _____ Date: _____ Class: _____

The Challenge

The school is building a new playground, and you are the designer! Fences, sandboxes, play pads and a garden all need careful math.

You will make: Playground Blueprint

I can…

- I can find perimeter and unknown side lengths.
- I can show rectangles with the same perimeter and different areas.
- I can classify quadrilaterals and split a shape into equal areas.

Materials

- Pencil
- Grid paper
- Ruler

Steps

1. Part 1: Fence the Field
2. Part 2: Sandbox Choices
3. Part 3: Play Pads
4. Part 4: Garden Corner
5. Check your work and share your playground blueprint.

Look for the yellow Hint boxes. They show a first step.

Part 1: Fence the Field

The grass field is a rectangle 8 meters long and 5 meters wide.

1. How many meters of fence go all the way around?

Hint: 8 + 5 + 8 + 5.

2. The fence around the climbing area is 20 meters. Three sides are 6, 4 and 6 meters. How long is the fourth side?

Hint: Add the three sides, then subtract from the perimeter.

Part 2: Sandbox Choices

You have 12 meters of border for a rectangular sandbox (whole-number sides).

Length	Width	Perimeter	Area
5	1	12	5
4	2	12	
3	3	12	

3. List the rectangles you can make and the area of each.

Hint: Length + width = 6.

4. Which sandbox has the most space to play?

Hint: Compare the areas.

Part 3: Play Pads

The play pads are shapes: a square, a rectangle, a rhombus and a trapezoid.

5. Which pads are quadrilaterals?

Hint: Count the sides.

6. Which pad is both a rectangle and a rhombus?

Hint: 4 right angles AND 4 equal sides.

7. Draw a quadrilateral that is not a rectangle, rhombus or square.

Hint: Change the angles or side lengths.

Part 4: Garden Corner

A square garden is split into 4 parts with equal area for 4 classes.

8. What fraction of the garden does each class get?

Hint: 4 equal parts.

9. Show two different ways to split it.

Hint: Equal area does not need the same shape.

Extension Challenge

Find two rectangles with an area of 12 square meters and different perimeters.

How your project will be scored

Learning target	4 Exceeds	3 Meets	2 Approaching	1 Beginning
I can find perimeter and unknown side lengths.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can show rectangles with the same perimeter and different areas.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can classify quadrilaterals and split a shape into equal areas.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can explain my thinking with pictures, numbers and words.	Clear for every part	Clear for most parts	Some explanation	Little explanation
My playground blueprint is complete and matches my math.	Complete, neat, accurate	Complete	Partly complete	Not complete