

Playground Blueprint

4th Grade Math Project · Building & Design

Grade 4 · Advanced

Name: _____ Date: _____ Class: _____

The Challenge

The school has money for a new playground, and the principal wants YOUR blueprint. Builders need exact measurements, so every number on your plan matters.

You will make: Playground Blueprint

What you will learn

- Use the area and perimeter formulas for rectangles.
- Find an unknown side length.
- Convert from a larger unit to a smaller unit.
- Solve measurement word problems about time, money and liquid volume.

Materials

- Grid paper
- Ruler
- Colored pencils

How to do it

1. Part 1: The Play Area
2. Part 2: The Sandbox
3. Part 3: Fence and Units
4. Part 4: Building Day
5. Check your work and share your playground blueprint.

Part 1: The Play Area

The main play area is a rectangle 36 meters long and 28 meters wide.

1. What is the area? Write the formula you used.

2. What is the perimeter?

3. Which measurement tells how much rubber matting to buy: area or perimeter? Why?

Part 2: The Sandbox

The sandbox is a rectangle with an area of 182 square meters. One side is 14 meters long.

4. How long is the other side? Write an equation with a letter.

5. What is the perimeter of the sandbox?

Part 3: Fence and Units

A fence goes all the way around the main play area (128 meters). Fencing costs $12 for each meter.

Meters	1	2	5	10
Centimeters	100			

6. How much does the fence cost?

7. How many centimeters long is the fence? (1 meter = 100 centimeters)

8. Complete the conversion table.

Part 4: Building Day

Workers start at 7:45 AM. The job takes 5 hours 50 minutes.

9. How many minutes does the job take?

10. What time do the workers finish?

11. The workers drink 15 liters of water. How many milliliters is that?

12. Draw your blueprint on grid paper. Label every length, the area and the perimeter.

⭐ Extension Challenge

You have 40 meters of fence for a rectangular garden with whole-number sides. What side lengths give the greatest area? Explain the pattern you see.

How your project will be scored

Category	4 Excellent	3 Good	2 Developing	1 Beginning
Math accuracy	All answers correct	Most answers correct	Some answers correct	Few answers correct
Shows work	Clear work for every step	Work for most steps	Some work shown	Little work shown
Explains thinking	Clear, complete explanations	Mostly clear explanations	Some explanation	Little explanation
Final product	Complete, neat and creative	Complete and neat	Partly complete	Not complete