

MATHS MISSION

Junior Ranger: Land Care Patrol

 YOUR ROLE: JUNIOR RANGER Your Mission

As a Junior Ranger, you've been asked to help plan the replanting of a section of the school garden that was damaged by erosion.

You need to work out how much space needs replanting, how many seedlings are needed, and whether the fencing budget is enough to protect the new plants from animals.

 Before You Begin

- Why might a damaged area of land need to be fenced off while it's being replanted?
- What's the difference between measuring the space inside a shape and measuring the distance around its edge?

 *Talk with a partner: have you seen fencing used to protect young plants before?*

 Background

Land care and replanting are real jobs on Country — done by Rangers, groundskeepers, and students on farm or garden projects. Replanting the right number of plants, spaced correctly, gives the land the best chance to recover.

 Step 1 – Area of the Plot

The damaged plot is a rectangle, 12 metres long and 8 metres wide.

Draw the plot below and label the length and width.

Draw the rectangle here (label 12 m and 8 m)

Calculate the area of the plot.

- Area = $12\text{ m} \times 8\text{ m} = \underline{\hspace{2cm}}\text{ m}^2$

 Step 2 – How Many Seedlings?

Each seedling needs 2 square metres of space to grow well.

Divide the total area by 2 to find how many seedlings are needed.

- Seedlings needed = $\underline{\hspace{2cm}}\text{ m}^2 \div 2 = \underline{\hspace{2cm}}$

 *Compare your answer with a partner before moving on.*

 Step 3 – Fencing the Plot

To protect the seedlings, the whole plot needs to be fenced.

Calculate the perimeter of the plot, then multiply by the fencing cost of \$8 per metre.

- Perimeter = ____ m
- Fencing cost = perimeter $\times$ \$8 = \$ ____



Make a Decision

The school has a \$500 budget for fencing. Is it enough?

- ☐ Yes, there's enough
- ☐ No, it's not enough

Explain your answer using your fencing cost calculation.

: _____

: _____



Mission Challenge

The plot shape has changed — part of it now juts out in an L-shape. Break it into two rectangles: one $12\text{ m} \times 8\text{ m}$, and an extra piece $4\text{ m} \times 5\text{ m}$ attached to one side.

Draw the L-shaped plot below and label both rectangles.

Draw the L-shape here (label $12\text{ m} \times 8\text{ m}$ and $4\text{ m} \times 5\text{ m}$)

Recalculate the total area, seedlings needed, and new perimeter.

Part	Length $\times$ Width	Area
Rectangle 1	$12\text{ m} \times 8\text{ m}$	_____
Rectangle 2	$4\text{ m} \times 5\text{ m}$	_____
Total	—	_____

Does the L-shaped plot need more or fewer seedlings than the original rectangle? Why do you think that is?

: _____



Extension Challenge

Write a rule connecting a plot's area to the number of seedlings needed, for any spacing rule.

What is your rule?

Talk with a partner before you write your rule.

My idea: _____



Community Connection

Land care happens in all kinds of places — not just school grounds.

- A creek or coastline
- A school garden

- Bushland near your community
- A local park or reserve

What land near you could use some care or replanting? Who do you think looks after it now?

: _____



Reflection

Circle how you felt about today's mission:

😊 Confident 😊 Mostly understood 😊 Needed some help 😊 Found it difficult

What helped you tell the difference between area and perimeter today?

: _____



Bonus Challenge

Design a simple planting map showing where the seedlings would go across the plot.

: _____

: _____