

Mission 7: Junior Ranger: Land Care Patrol

Role: Junior Ranger **Duration:** 55 minutes

Learning Intentions & Success Criteria

We are learning to:

- Calculate the area of a rectangular and a composite plot of land.
- Use area to work out how many seedlings are needed at a given spacing.
- Calculate perimeter and use it to work out a fencing cost.

Success criteria — I can:

- I can calculate area using length $\times$ width.
- I can calculate perimeter by adding all the sides.
- I can use division to work out how many seedlings fit a given area.

Curriculum focus: Measurement — area and perimeter of rectangles and composite shapes

Materials

- Grid paper
- Ruler
- Calculator
- Measuring tape (optional, for an outdoor extension on the school grounds)

Lesson Flow & Scripted Questions

Use these prompts rather than explaining the maths yourself — let students reason first.

Stage	Ask students
Context	"What might cause land to need replanting?" "What do you think Rangers actually do day-to-day?"
Student Exploration	"Here's the shape and size of a damaged plot. Before I explain anything, sketch it on grid paper with your group."
Discussion	"How did you work out how much space is inside the plot?" "How is that different from working out the distance around the outside?"
Introduce the Maths	"What's the difference between area and perimeter, in your own words?" "If each seedling needs 2 square metres, how would you use the area to find the number of seedlings?"
Reflection	"Why would a Ranger need both area and perimeter for a job like this?"

Do Not Default To

- Introducing the formulas 'Area = $l \times w$ ' and 'Perimeter = add all sides' before students have tried measuring/sketching themselves.
- Treating area and perimeter as interchangeable — confusing the two is the most common error here.
- Skipping the budget check at the end — it's what makes this a real decision.



Differentiation

Extra support:

- Provide a squared grid where each square is already labelled $1\text{ m} \times 1\text{ m}$ so area can be counted directly.
- Use a simple rectangle only, saving the L-shape for the Challenge.

Extension / mentor track:

- Ask students to design their own composite-shaped plot and calculate its area and perimeter.
- Introduce a second spacing rule (1 seedling per 3 m^2) and compare seedling numbers needed.



Adapting This Mission To Your Community

- This mission fits naturally with a school farm, garden, or grounds program — use a real section of school land if one is available to measure.
- Invite a local Land Ranger group, or whoever manages the school grounds, to speak about real land care and replanting projects.
- Use real native species names if appropriate and known, rather than the generic 'seedlings' used here.

This mission uses a placeholder context. Please localise names, places, and any cultural knowledge in consultation with local Traditional Owners, Elders, or community members, and only include specific cultural knowledge that has been given permission to share.