

Mission 8: Fishing Quota Challenge

Role: Fisheries Ranger **Duration:** 55 minutes

Learning Intentions & Success Criteria

We are learning to:

- Calculate a percentage of a population to find a sustainable catch limit.
- Share an amount equally, and then using a ratio based on group size.
- Use maths evidence to justify a sustainability decision.

Success criteria — I can:

- I can find a percentage of a given number.
- I can divide an amount equally between groups.
- I can share an amount using a ratio based on group size.

Curriculum focus: Number — percentage of an amount, division, and ratio

Materials

- Calculator
- Counters (to model sharing a quota)
- Whiteboard
- Printed worksheet

Lesson Flow & Scripted Questions

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

Stage	Ask students
Context	"Why might a community decide to limit how much fish is taken in a season?" "What could happen if everyone just took as much as they wanted?"
Student Exploration	"If there are about 800 barramundi and we want to take only a small, sustainable share, how would you work out what that share should be?"
Discussion	"What does 'sustainable' mean in this context?" "Why might 10% be chosen instead of 50%?"
Introduce the Maths	"How do we calculate 10% of a number?" "If four groups are sharing that catch equally, how do we work out each group's share?"
Reflection	"Why might sharing equally not always feel fair to everyone?"

Do Not Default To

- Framing this as 'how much can we take' rather than 'how much can we take sustainably'.
- Giving the percentage calculation before discussing why a small percentage is chosen at all.
- Assuming equal sharing is always the fairest option — let the Challenge step raise this properly.



Differentiation

Extra support:

- Use 10 as the number of groups and simple round numbers for a first attempt at percentage and division.
- Model the equal-sharing step with physical counters before using numbers.

Extension / mentor track:

- Introduce the uneven-group-size ratio from the Challenge step earlier as the main task.
- Ask students to investigate what percentage would need to be used if the population halved.



Adapting This Mission To Your Community

- Barramundi is used here as a well-known Top End species — swap in whatever fish or resource is most relevant locally, and check appropriateness with community members first.
- If your community has real seasonal rules or quotas (formal or informal), discuss how they compare to the maths in this mission.
- Invite a local Land Ranger or fisheries officer to discuss how real quotas are set.

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.