

Reef data lab: lesson 4 of 4

Your research question

Use real reef data to answer
a question of your own



MCP survey divers. Photo: MCP



What makes a good research question?

Specific

Names exactly what you will compare.

Answerable

The data you have can answer it.

Comparative

Compares groups, places or times.

Worth asking

The answer would help someone.



Question ideas

Use one of these, or better, make up your own.

Idea 1

Do shallow reefs have more hard coral than deep reefs?

Idea 2

Does visibility affect how many fish divers count?

Idea 3

Are there fewer damselfish where there are more groupers?

Idea 4

Is the water warmer in the wet season than the dry season?

Idea 5

Which site lost the most coral after 2024, and which recovered best?

Idea 6

Is there more algae where there is less coral?

Idea 7

Does enforcement level affect coral cover as well as fish?

Idea 8

Did the number of large fish change between 2022 and 2026?



Plan it

1. Write your question and a hypothesis you can test.
2. Choose your variables: what you compare, what you measure, what you keep the same.
3. Decide which rows to include and which to leave out, and why.
4. Plan your analysis and your graphs before you start.



Write it up

1. Introduction: why the question matters.
2. Method: the data, how it was collected, and what you did to it.
3. Results: tables and graphs, described in words.
4. Discussion: what it means, how confident you are, and the limitations.
5. Conclusion: a clear answer to your question.



Using the data honestly

Say that you used a teaching dataset based on MCP survey records, adjusted for learning.

Report what you left out and why. Don't claim more than the data shows.

Want to work with MCP's real, unadjusted data for a bigger project? Ask your teacher to contact MCP.



Talk about it

What question are you most curious about?

What might make your result unreliable?

Who would want to know your answer?

Well done! You have finished the Reef data lab.



Photos and sources

Photos: survey divers by MCP. All illustrations drawn for this lesson by Marine Conservation Philippines.

Sources:

- Teaching dataset based on MCP survey records, 2018 to 2026, adjusted for learning.

Full links are in the teacher reading. Free to use and share for education. Made by Marine Conservation Philippines. More free lessons: marineconservationphilippines.org/resources/teachers-resources/

