



Make a claim you can defend

Lesson plan: reveal the twelve claims, learn what makes a claim trustworthy, then create and peer-review an ocean fact post



Ages	13 to 18 (grades 8 to 12)
Time	60 to 75 minutes
Group	Up to 36 students, in groups of three
Where	Any classroom
You need	The slides, students' twelve claims sheets from lesson 1, coloured pens, one planner per group, and paper or devices for the posts

What students learn

- The answers to the twelve claims, and the reasons behind them.
- What makes a claim trustworthy: a source, the right size of claim, stated uncertainty and context.
- How to create accurate science communication.
- How to give and use peer feedback.

Before the lesson

1. Ask students to bring their **twelve claims** sheets from lesson 1.
2. Print one **planner** per group.

The lesson

- 1** **Vote again and reveal 15 minutes, slides 1 to 4.** Students re-vote in a different colour, then reveal the answers. Ask who changed their mind.
- 2** **Trustworthy claims 5 minutes, slide 5.** Go through the four features.
- 3** **Make it 25 minutes, slide 6.** Groups plan and create their post.
- 4** **Check it 15 minutes, slide 7.** Swap, review with the checklist, fix and display.
- 5** **Wrap up 5 minutes, slide 8.** Discuss one or two questions.

Answers and what to listen for

Answer key

1	A plastic bottle takes 450 years to break down.	Unsupported	Researchers checked 57 infographics with numbers like this and found no credible scientific source for any of them. <i>Ward and Reddy, PNAS, 2020.</i>
2	By 2050 there will be more plastic than fish in the sea.	Unsupported	A 2016 projection. Its fish figure came from a 2008 estimate that the study's own co-author later abandoned. Newer estimates of ocean life are several times higher. <i>AAP FactCheck, 2023.</i>
3	Falling coconuts kill 150 people a year.	Unsupported	Traced to a press release from a British travel insurer. No published study gives a worldwide death toll. <i>The Straight Dope, 2002. Snopes..</i>
4	Coral reefs cover less than 1% of the ocean floor but support about a quarter of ocean species.	Supported	A standard estimate from NOAA and other agencies. Exact reef area varies by method. <i>NOAA.</i>
5	The ocean has absorbed more than 90% of the extra heat from global warming.	Supported	The IPCC found ocean warming accounts for about 91% of the heating of the climate system. <i>IPCC, 2021.</i>
6	Only about 9% of plastic waste is recycled.	Supported	The OECD's global estimate for 2019. <i>OECD, 2022.</i>
7	Young fish prefer to eat microplastics rather than real food.	Retracted	This came from a 2016 study in Science that was retracted in 2017 after investigators found its results were fabricated. <i>Uppsala University. Retraction Watch..</i>
8	'Reef-safe' sunscreen protects coral reefs.	Misleading	There is no regulatory definition of 'reef-safe'. Harm in lab tests used much higher concentrations than those found on reefs. Heat is the main cause of mass bleaching. <i>National Academies, 2022. Smithsonian..</i>
9	All sharks must keep swimming or they die.	Misleading	True for some species. Others, such as bamboo sharks, pump water over their gills and can rest on the seabed. <i>Live Science.</i>
10	When big sharks were overfished, rays boomed and wiped out the scallops.	Unsupported	A famous 2007 claim. A 2016 re-examination found the timing did not match and the chain of events lacked evidence. <i>Grubbs and others, Scientific Reports, 2016.</i>
11	Mantis shrimp see more colours than any other animal.	Misleading	They have 12 types of colour receptor, far more than us, but tests showed they are worse than humans at telling similar colours apart. <i>Thoen and others, Science, 2014.</i>
12	The Pasig River carries more plastic to the sea than any other river.	Supported	That is what a 2021 global model estimated. It is a model estimate, so it comes with uncertainty. <i>Meijer and others, Science Advances, 2021.</i>

Making it easier or harder

- **Younger groups:** make a class poster together instead of group posts.
- **Older groups:** publish the best posts on the school's social media, with the sources in the caption.
- **Share with us:** MCP would love to see what your students make.

Curriculum links

- **English and media literacy:** writing for an audience, evaluating sources.
- **Science:** communicating science accurately.

- **Philippine senior high school:** Effective Communication and research skills.
- **Ocean Literacy Principle 7:** the ocean is largely unexplored, and our knowledge keeps changing.

The teacher reading has the science behind every slide, with links to the sources.

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