



# Weighing the evidence

**Lesson plan: sort types of evidence, then investigate four real cases where ocean science went wrong or was misread**



|                 |                                                                       |
|-----------------|-----------------------------------------------------------------------|
| <b>Ages</b>     | 13 to 18 (grades 8 to 12)                                             |
| <b>Time</b>     | 60 minutes                                                            |
| <b>Group</b>    | Up to 36 students, in groups of three or four                         |
| <b>Where</b>    | Any classroom. No internet needed.                                    |
| <b>You need</b> | The slides, one set of evidence cards per group, the case files sheet |

## What students learn

- That different kinds of evidence carry different weight, and why.
- Four common traps: correlation and causation, lab versus real world, over-trusting peer review, and stretching a true fact.
- How science corrects itself through replication, re-analysis and retraction.

## Before the lesson

1. Print and cut one set of **evidence cards** per group.
2. Print the **case files** sheet. Each group needs its own case.

## The lesson

- 1 **Sort the evidence 15 minutes, slides 1 to 3.** Groups sort the cards, then compare orders. There is no single right order, but most agree on the general pattern.
- 2 **Case files 25 minutes, slide 4.** Each group investigates one case and prepares a two-minute report.
- 3 **Report back 15 minutes, slide 5.** Groups share, and the class links each case to how science corrected itself.
- 4 **Wrap up 5 minutes, slide 6.** Discuss one or two questions.

## Answers and what to listen for

**A typical sort, weakest to strongest:** viral post, friend's story, company press release, news article, one lab experiment, one field study, several studies that agree, major review. Accept reasoned alternatives, for example putting the news article below the press release.

## Making it easier or harder

- **Younger groups:** use cases 1 and 4, which need less background.
- **Older groups:** ask each group to find the original paper's abstract and the retraction or re-analysis notice online.

## Curriculum links

- **Science:** the nature of scientific enquiry, evaluating evidence.
- **English and media literacy:** critical reading.
- **Philippine senior high school:** 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.

---

Free to use and share for education. Made by Marine Conservation Philippines. More free lessons:  
[marineconservationphilippines.org/resources/teachers-resources/](https://marineconservationphilippines.org/resources/teachers-resources/) Photo by MCP. Updated September 2026.