

How do we know?: lesson 1 of 3

Trace the number

Where do famous ocean facts come from?



Beach clean-up in the Philippines. Photo: MCP



Twelve ocean claims

Vote on your sheet before we check anything: supported, misleading, unsupported or retracted?

1

A plastic bottle takes 450 years to break down.

2

By 2050 there will be more plastic than fish in the sea.

3

Falling coconuts kill 150 people a year.

4

Coral reefs cover less than 1% of the ocean floor but support about a quarter of ocean species.

5

The ocean has absorbed more than 90% of the extra heat from global warming.

6

Only about 9% of plastic waste is recycled.



Twelve ocean claims, continued

7

Young fish prefer to eat microplastics rather than real food.

8

'Reef-safe' sunscreen protects coral reefs.

9

All sharks must keep swimming or they die.

10

When big sharks were overfished, rays boomed and wiped out the scallops.

11

Mantis shrimp see more colours than any other animal.

12

The Pasig River carries more plastic to the sea than any other river.



Why do shaky numbers spread?

Even good causes spread bad numbers. Many of the claims you just voted on are shared by people trying to protect the ocean.

- A precise number sounds scientific, even when it isn't
- People repeat what trusted people say
- A surprising fact is fun to share
- Checking takes longer than sharing



Four moves for checking a claim

1. Stop. Before you share or believe it, notice how it makes you feel.
2. Investigate the source. Who is saying this, and what do they know?
3. Find better coverage. What do other trustworthy sources say?
4. Trace it back. Follow the claim to where it first came from.

SIFT

These four moves are called SIFT, a method developed by the digital literacy researcher Mike Caulfield.



Your mission: follow a trail

1. Your group gets one trail card: a famous claim and four places it has appeared.
2. Read each step, from the newest to the oldest.
3. At each step ask: who says this, and what is their evidence?
4. Find the step where the trail breaks. Is the claim supported?



What did the trails show?

The coconut trail

A number from an insurance press release, repeated by an expert, became a 'fact'.

The plastic and fish trail

A real report, but built on a fish estimate its own author abandoned.

The plastic bottle trail

Copied from poster to poster with no original source at all.



The problem is real, the number is not

Plastic pollution is a serious and growing problem. Shark bites really are rare. But shaky numbers make good causes easier to attack.

Using accurate numbers, and saying when we don't know, makes people trust us more, not less.

How would you rewrite the plastic bottle claim so it is true?



Microplastics. Photo: Da Shika



Talk about it

Which trail surprised you most?

Why might an expert repeat a number without checking it?

What will you do next time you see a shocking ocean fact?

Next time: weighing the evidence



Photos and sources

Photos: beach clean-up by MCP. Microplastics by Da Shika. All illustrations drawn for this lesson by Marine Conservation Philippines.

Sources:

- Ward, C.P. and Reddy, C.M. (2020). PNAS.
- AAP FactCheck (2023). Fishy figures underpin minister's ocean plastic warning.
- The Straight Dope (2002). Are 150 people killed each year by falling coconuts?
- Snopes. Coconuts kill more people than sharks?
- Caulfield, M. SIFT (the four moves).

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/

