

Read the numbers carefully

Fishing mortality estimates: definitions and comparisons

Name: _____ Date: _____

Fishing mortality means deaths associated with fishing. It differs from the number of sharks alive. A 2024 study examined the period 2012-2019. The university summary reports these rounded estimates:

Measure	2012	2019
Reported comparison of annual shark fishing mortality	76 million	80 million
Broader estimate accounting for sharks not properly identified by species	Not supplied here	101 million

An estimate is an informed calculation, not an exact count. Compare figures calculated in the same way. The broader estimate includes an extra adjustment for poorly identified animals. That adjustment does not, by itself, show a change over time. These figures describe 2012-2019.

The study found that measures against finning did not reduce total mortality overall during that period. Results varied among fisheries; some measures were associated with lower mortality.

Examine two invented headlines

- A. "Shark deaths rose from 76 million to 101 million."
- B. "Study estimates fishing killed 80 million sharks in 2019."

Which comparison is misleading, and why? What context should the other headline include?

Science source: Dalhousie University: shark mortality research, January 11, 2024

Test a claim

Use calculations and questions to check an argument

Name: _____ Date: _____

Use 76 million and 80 million. Show each step:

1. Absolute change = later value minus earlier value.
2. Percentage change = (absolute change / earlier value) x 100.

You may use a calculator. Keep the units in your working.

What can these estimates tell us? Name one conclusion they cannot establish.

Examine a proposed response

Consider: "A ban on finning solves shark overfishing." Finning means removing a shark's fins and discarding the rest of the animal at sea. Reducing all fishing deaths is a broader aim. What does the research summary support, and what would you need to investigate?

Hypothetical proposal: stop fishing in one area for part of the year to try to reduce shark deaths. This is an idea to investigate, not a proven solution. Ask who uses the area and whether fishing might move elsewhere. Use this proposal or another action: who could be affected, what could make it difficult, and what would you measure?

Build a visual argument

Try two compositions, then revise

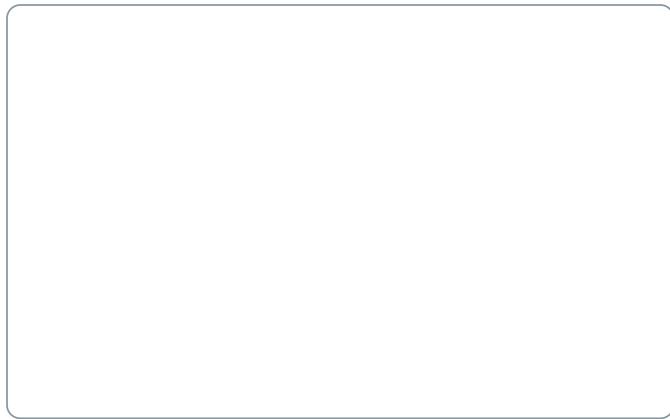
Name: _____ Date: _____

Begin in the first period. Write:

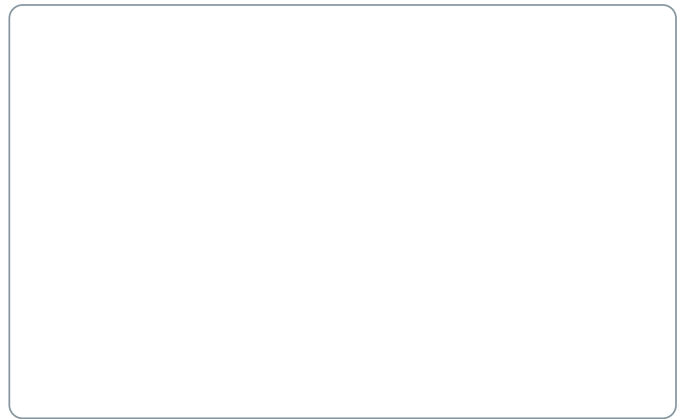
Your claim (the point you want to make), its source, and one limitation (what the evidence cannot tell you). Include the study dates if relevant.

Try two layouts for your artwork. If you use a graph, label its years, units and scale. If you use an image as a comparison or symbol, explain which parts are your invention.

Composition 1



Composition 2



Ask a partner what your image claims. What could someone misunderstand?

After revising: I changed this part of my artwork because:
