

# Citing Evidence and Drawing Inferences in Nonfiction

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 10



## Quick Review

An inference is a careful conclusion the text strongly suggests but does not state outright. Strong evidence is a sentence that, by itself, would convince a careful reader of the inference — without you having to add extra reasoning.

### PART 1 — READ

Read the passage. Then answer the questions.

## The Woman Who Mapped the Ocean Floor

In 1952, a young geologist named Marie Tharp sat in a small office at Columbia University, hunched over a long roll of paper. On the paper she was drawing, line by line, the shape of the bottom of the Atlantic Ocean. Tharp was not allowed on the research ships that collected the depth measurements; in those years, women were not permitted to join most ocean expeditions. So her partner, Bruce Heezen, sailed with the equipment, and Tharp turned his stacks of numbers into careful pictures of a place no one had ever seen.

As she plotted the depths from six separate ship tracks, Tharp noticed something none of the readings alone could show: a deep valley running straight down the middle of the ocean floor, splitting it into two halves. When she pointed it out to Heezen, he dismissed it as "girl talk" and asked her to redraw the maps. Tharp redrew them. The valley was still there. Over the next year she compared her work with reports of underwater earthquakes from a colleague named Howard Foster, and the earthquakes lined up almost exactly with her valley. Together, the two patterns hinted that the seafloor itself might be splitting apart — an idea most geologists at the time rejected.

Tharp's maps, published over the next two decades, slowly forced the scientific community to take seriously the theory of plate tectonics, which is now the foundation of modern geology. Even so, her name appeared only in small print on most of the maps until late in her career. In 1997, the Library of Congress named her one of the four greatest cartographers of the twentieth century. She was eighty-seven years old. "I was so busy making maps," she said in a later interview, "I let them argue. There's truth to the old saying that a picture is worth a thousand words."

### PART 2 — PRACTICE

Use the passage to answer each question. For each inference, find the sentence or detail that proves it best.



1. Which sentence from paragraph 1 BEST supports the inference that Tharp's role was limited by rules she did not choose?
  - A. "In 1952, a young geologist named Marie Tharp sat in a small office at Columbia University, hunched over a long roll of paper."
  - B. "On the paper she was drawing, line by line, the shape of the bottom of the Atlantic Ocean."
  - C. "Tharp was not allowed on the research ships that collected the depth measurements; in those years, women were not permitted to join most ocean expeditions."
  - D. "So her partner, Bruce Heezen, sailed with the equipment, and Tharp turned his stacks of numbers into careful pictures of a place no one had ever seen."
2. A reader concludes that Heezen did not at first trust Tharp's discovery. Which sentence BEST supports this inference?
  - A. "When she pointed it out to Heezen, he dismissed it as 'girl talk' and asked her to redraw the maps."
  - B. "Over the next year she compared her work with reports of underwater earthquakes from a colleague named Howard Foster."
  - C. "Together, the two patterns hinted that the seafloor itself might be splitting apart."
  - D. "Tharp's maps, published over the next two decades, slowly forced the scientific community to take seriously the theory of plate tectonics."
3. Which detail BEST supports the inference that Tharp's valley was a REAL feature and not a drawing mistake?
  - A. She was a young geologist working at Columbia University.
  - B. Her partner asked her to redraw the maps, and she did.
  - C. She redrew the maps, and the valley was still there.
  - D. The Library of Congress later honored her work.
4. Based on paragraph 2, the reader can BEST infer that Tharp combined her work with Howard Foster's data because —
  - A. she wanted to prove Heezen wrong as quickly as possible.
  - B. underwater earthquakes lining up with the valley would be strong outside evidence that the valley was real and important.
  - C. Foster was the only person who believed her.
  - D. geologists at the time required two sources for every map.
5. Which sentence BEST supports the inference that Tharp's discovery was scientifically controversial at the time?
  - A. "On the paper she was drawing, line by line, the shape of the bottom of the Atlantic Ocean."
  - B. "The earthquakes lined up almost exactly with her valley."
  - C. "Together, the two patterns hinted that the seafloor itself might be splitting apart — an idea most geologists at the time rejected."
  - D. "Her name appeared only in small print on most of the maps until late in her career."



6. Which detail BEST supports the inference that Tharp did not receive equal credit for her work for many years?
- A. She drew the seafloor from numbers collected by ships.
  - B. Her name appeared only in small print on most of the maps until late in her career.
  - C. In 1997 the Library of Congress named her one of the four greatest cartographers of the twentieth century.
  - D. She compared her maps with reports of underwater earthquakes.
7. Read this line from paragraph 3: "I was so busy making maps, I let them argue." The quotation BEST supports the inference that Tharp —
- A. regretted that she had not spoken up more for her own work.
  - B. believed her maps would prove her case better than any debate could.
  - C. did not understand why other scientists disagreed with her.
  - D. was unwilling to publish her findings at all.
8. Based on the WHOLE passage, the reader can BEST infer that Tharp's work changed geology because —
- A. she traveled on more research ships than any other scientist of her era.
  - B. her careful drawings made an invisible underwater pattern visible enough for other scientists to confirm and build on.
  - C. she discovered new species along the mid-ocean valley.
  - D. she became the first woman to lead a research ship in the Atlantic.
9. What can the reader infer about WHY Tharp insisted on redrawing the maps after Heezen dismissed her discovery? Support your inference with one quoted detail from the passage.

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10. Find ONE sentence from the passage that BEST supports the inference that Tharp's contribution was eventually recognized as historically important, and explain in one sentence why that sentence proves it.

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## Answer Keys

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Explanations	
<b>1. C</b>	C names a rule ("not allowed," "not permitted") that came from outside Tharp — the exact meaning of "limited by rules she did not choose." A only sets the scene; B describes her work; D describes the workaround Heezen and Tharp used, not the rule itself.
<b>2. A</b>	A captures both the dismissal ("girl talk") and the demand to redo the work — proof of distrust. B shows what Tharp did next, not Heezen's reaction. C names a hypothesis they later shared. D is about the wider scientific community, not Heezen.
<b>3. C</b>	Redrawing and still finding the valley proves it was not an error she could erase. A is biography, not evidence about the valley. B shows the request but not the result that confirmed reality. D is honor decades later — proof of importance, not of the original measurement.
<b>4. B</b>	Matching her valley to an independent dataset (earthquakes) is exactly how a scientist confirms a pattern is not a fluke — the strongest reason in the text. A invents a motive of revenge the passage avoids. C overstates Foster's role; the passage never says he was the only believer. D invents a rule never stated.
<b>5. C</b>	"Most geologists at the time rejected" the idea — the textbook meaning of controversial. A describes the act of drawing. B describes confirming data, not controversy. D shows credit problems, not whether the SCIENCE was disputed.
<b>6. B</b>	"Only in small print until late in her career" directly proves unequal credit. A shows her method, not credit. C is the EVENTUAL recognition, the opposite of being uncredited. D describes her process.
<b>7. B</b>	She "let them argue" while she kept producing the evidence — the maps would do the convincing ("a picture is worth a thousand words"). A reads regret into a calm statement. C invents confusion she does not show. D contradicts the published maps mentioned in the same paragraph.
<b>8. B</b>	The passage shows her drawings revealed a pattern, others confirmed it, and plate tectonics followed — exactly the chain in B. A contradicts paragraph 1 (she was barred from ships). C invents species not mentioned. D invents a leadership role the text never gives her.
<b>9.</b>	<b>Answer:</b> Strong answer: She redrew them to test her own work fairly — and when the valley appeared again, she had evidence stronger than Heezen's opinion. Support: "Tharp redrew them. The valley was still there." Acceptable variations: she wanted to be certain it was not a drawing error; she was being a careful scientist before defending her claim; she used the redraw as proof. NOT acceptable: answers with no quote; answers claiming she was angry or trying to embarrass Heezen (the passage shows calm persistence, not revenge); quotes from paragraph 3 about awards (irrelevant to the redraw decision). A 2-point answer connects WHY she redrew (testing the result) AND quotes the line that shows the second drawing still showed the valley.



10.	<b>Answer:</b> Strongest sentence: "In 1997, the Library of Congress named her one of the four greatest cartographers of the twentieth century." Explanation must connect a NAMED authority (Library of Congress) AND a ranking among the greatest of the century — both halves are needed. Also acceptable: "Tharp's maps, published over the next two decades, slowly forced the scientific community to take seriously the theory of plate tectonics, which is now the foundation of modern geology." — explanation must point to "foundation of modern geology." NOT acceptable: any sentence from paragraph 1 (those describe her job, not recognition); quotes about her name being in small print (that proves the OPPOSITE). Look for an outside authority OR a wide field-changing claim. Reject sentences about her daily work.
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