Finding the Way

Use evidence to explain how sky observations guide travel.

E.5.8A.4 "Construct scientific arguments to support claims about the importance of astronomy in navigation and exploration, including the use of telescopes, compasses, and star charts."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline one detail about what each tool does: the compass, star chart, and telescope. Circle the claim about why using the tools together helps the crew.

A Night at Sea

1. At dusk, a small research boat leaves an island to study seabirds. Soon the shore disappears in the dark. The crew must choose a safe direction for the trip home. A compass needle points toward magnetic north, giving them a steady direction even when they cannot see land. But a compass alone cannot tell them which bright points in the night sky they are seeing.

2. The crew opens a star chart, a guide that shows where stars appear in the sky at a certain time of year. They match patterns overhead to the chart and find Polaris. In the Northern Hemisphere, Polaris appears close to true north. The compass points toward magnetic north, which may differ from true north. Comparing the two helps the crew check its direction instead of trusting one tool alone.

3. Later, clouds cover some stars, but a clear patch appears. Through a telescope, the crew sees a faint star in that patch more clearly and checks it against the star chart. A telescope gathers light, making faint objects easier to see, but it does not choose a route for them. Together, sky observations, a chart, and a compass give the crew stronger evidence for its heading toward home.

2 ANSWER WITH EVIDENCE

Use the passage

1. What evidence supports the claim that a compass helps the crew when land is out of sight? Explain how it helps.

2. How does using the star chart to find Polaris support the crew's plan to check its direction?

3. Why is the telescope helpful but not enough by itself to choose a route? Use evidence from the passage.

4. Why does comparing the compass with Polaris give the crew stronger evidence about its direction than using the compass alone?

3 YOUR TURN

Your own words

Imagine your group must travel north across a wide, treeless field on a clear night in the Northern Hemisphere. Write four sentences arguing for a plan that uses a compass, star chart, and telescope, and explain why you would compare clues instead of trusting just one tool.

ANSWER KEY

Finding the Way

GRADE 5 · E.5.8A.4

PART 1 · READ AND MARK

Underline one detail about what each tool does: the compass, star chart, and telescope. Circle the claim about why using the tools together helps the crew. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What evidence supports the claim that a compass helps the crew when land is out of sight? Explain how it helps.	**The needle points toward magnetic north, giving the crew a steady direction even when they cannot see land.**
2	How does using the star chart to find Polaris support the crew's plan to check its direction?	**The chart helps the crew identify Polaris, which appears close to true north in the Northern Hemisphere. They can compare that clue with the compass.**
3	Why is the telescope helpful but not enough by itself to choose a route? Use evidence from the passage.	**It makes a faint star easier to see, but the crew still needs the chart to check the star and other clues to choose a direction.**
4	Why does comparing the compass with Polaris give the crew stronger evidence about its direction than using the compass alone?	**Polaris appears close to true north, while the compass points toward magnetic north. Comparing them lets the crew check its direction with two clues.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would use a compass, star chart, and telescope to help my group travel north. The compass points toward magnetic north, and the chart helps us identify Polaris, which appears close to true north. A telescope could help us see a faint star shown on the chart. Comparing these clues would help us check our heading instead of trusting only the compass.

Accept arguments that use accurate evidence from the passage and explain how the evidence supports a direction choice. Do not accept a claim that a telescope alone shows the route or that magnetic north and true north are always the same.