Crossing Lines

Use degrees to describe exact places on Earth

5.G.1 "Illustrate how lines of latitude and longitude are measured in degrees of a circle. Locate where these lines intersect on a map or globe and describe the precise location using terms of degrees north or south of the equator and east or..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the sentence that tells how many degrees make a full circle. Then circle each degree reading north, south, east, or west for the boat, buoy, and birds.

An Ocean Survey

1. A globe is round, so geographers measure positions with degrees of a circle. A full turn around a circle is 360 degrees. The equator is 0 degrees latitude, and latitude lines run east and west around Earth. Their numbers show how far north or south a place is from the equator. The Prime Meridian is 0 degrees longitude. Longitude lines run from pole to pole.

2. On an ocean survey, a research boat sends two readings: 24 degrees north of the equator and 38 degrees west of the Prime Meridian. The first reading gives its latitude; the second gives its longitude. Those lines cross at the boat's location. Nearby, a drifting buoy is also at 24 degrees north, but it is at 38 degrees east. The boat and buoy share one latitude line.

3. A science team follows two tagged seabirds. Bird Cedar is at 16 degrees south of the equator and 38 degrees west of the Prime Meridian. Bird Willow is at 16 degrees south and 38 degrees east. Each bird's position is where a latitude line crosses a longitude line. The team can tell which side of the equator and Prime Meridian each bird is on, even without a map.

2 ANSWER WITH EVIDENCE

Use the passage

1. How many degrees make a full circle? Which 0-degree line is used to measure north or south?

2. Write the boat's exact location using degrees north or south and east or west.

3. Which object is where 24° north latitude crosses 38° east longitude? How can you tell it is east of the Prime Meridian?

4. Write Bird Cedar's exact location. Which latitude line does it share with Bird Willow?

3 YOUR TURN

Your own words

Invent a location for an ocean sensor using two degree numbers that do not appear in the passage. Write two sentences: give its latitude and longitude with directions, then explain how the lines pinpoint its location.

ANSWER KEY

Crossing Lines

GRADE 5 · 5.G.1

PART 1 · READ AND MARK

Underline the sentence that tells how many degrees make a full circle. Then circle each degree reading north, south, east, or west for the boat, buoy, and birds. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How many degrees make a full circle? Which 0-degree line is used to measure north or south?	**A full circle is 360 degrees. The equator is the 0-degree line for latitude.**
2	Write the boat's exact location using degrees north or south and east or west.	**The boat is at 24° north latitude and 38° west longitude.**
3	Which object is where 24° north latitude crosses 38° east longitude? How can you tell it is east of the Prime Meridian?	**The drifting buoy. Its longitude reading is 38° east of the Prime Meridian.**
4	Write Bird Cedar's exact location. Which latitude line does it share with Bird Willow?	**Bird Cedar is at 16° south latitude and 38° west longitude. Both birds are on the 16° south latitude line.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

My ocean sensor is at 12° north of the equator and 75° west of the Prime Meridian. The 12° north latitude line and 75° west longitude line cross at its exact location.

Accept N, S, E, and W abbreviations in place of direction words. For Your Turn, check that neither degree number appears in the passage and that the student gives one latitude and one longitude that intersect.