Routes and Rain

Use coordinates and rainfall data to plan a supply route.

6.C.1.2 "Integrate visual information to organize understandings about the people and environments of the Western Hemisphere. Apply the concepts of scale, distance..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the sentence that explains how western longitude changes as you move east. Circle the sentence that explains why a flat map may mislead you.

Planning Across the Caribbean

1. Imagine delivering supplies across the Western Hemisphere. A location can be written with latitude and longitude. Latitude measures north or south of the equator; longitude measures east or west of the prime meridian. On a map, two places with the same latitude lie along the same east-west line. Their longitude helps show which lies farther east.

2. The table gives rounded coordinates for four real cities and invented rainfall readings for one day. The readings are practice data, not a weather report. At about 19° N, one degree of longitude spans roughly 105 kilometers. When western longitudes decrease, you are moving east. Use those clues to compare positions and estimate straight-line distances, not driving routes.

CITY LOCATIONS AND INVENTED ONE-DAY RAINFALL

City	Approximate coordinates	Rainfall (mm)
Mexico City	19° N, 99° W	18
Puebla	19° N, 98° W	22
Veracruz	19° N, 96° W	75
Havana	23° N, 82° W	35

3. Maps and tables answer different questions. A map projection flattens Earth's curved surface, so shapes, areas, or distances may look stretched. A rainfall table shows measurements but cannot show every street or predict flooding by itself. A satellite image could reveal cloud cover; a GIS tool could combine rain readings with road and elevation data to help plan deliveries.

2 ANSWER WITH EVIDENCE

Use the passage

1. What are the approximate latitude and longitude of Veracruz?

2. In which direction is Veracruz from Mexico City? About how many kilometers apart are they in a straight line, using the estimate in the passage?

3. Of the cities at about 19° N, which had the most rain? How much more rain did it have than the westernmost city at that latitude?

4. Why might a flat map mislead you about the distance between cities? What data could a GIS tool add to help plan a delivery?

3 YOUR TURN

Your own words

Plan a supply route that starts in Havana and visits two cities at about 19° N. Give the coordinates of each stop, the direction of travel for each leg, and one reason these data alone cannot tell you whether the route is safe.

ANSWER KEY

Routes and Rain

GRADE 6 · 6.C.1.2

PART 1 · READ AND MARK

Underline the sentence that explains how western longitude changes as you move east. Circle the sentence that explains why a flat map may mislead you. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What are the approximate latitude and longitude of Veracruz?	**19° N, 96° W.**
2	In which direction is Veracruz from Mexico City? About how many kilometers apart are they in a straight line, using the estimate in the passage?	**Veracruz is east of Mexico City. Their longitudes differ by 3°, so the estimated straight-line distance is 315 kilometers.**
3	Of the cities at about 19° N, which had the most rain? How much more rain did it have than the westernmost city at that latitude?	**Veracruz had the most rain, 57 mm more than Mexico City.**
4	Why might a flat map mislead you about the distance between cities? What data could a GIS tool add to help plan a delivery?	**A map projection can stretch distances. A GIS tool could add road or elevation data.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would travel from Havana (23° N, 82° W) southwest to Veracruz (19° N, 96° W). Then I would go west to Puebla (19° N, 98° W). The coordinates and rainfall readings do not show road conditions, so I would check those before choosing a safe route.

Accept either pair of cities at about 19° N if both directions match the chosen order. Accept any sound limitation, such as missing road conditions or the fact that one day of rain cannot establish flood risk.