

It's A Long Way to Tipperary. But Just How Far?

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Grade Level	4
Duration	2 class periods

National Standards

GEOGRAPHY Element 1: The World in Spatial Terms

1. How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information

AZ Standards

MATHEMATICS

Measurement and Data

4.MD.A.2 Use the four operations to solve word problems and problems in real-world context involving distances, intervals of time (hr, min, sec), liquid volumes, masses of objects, and money, including decimals and problems involving fractions with like denominators, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using a variety of representations, including number lines that feature a measurement scale

Arizona Social Science Standards

GEOGRAPHY

The use of geographic representations and tools help individuals understand their world.

4.G1.1 Use and construct maps and graphs to represent changes in the Americas over time.

Overview

Maps generally include a scale that can be used to measure distance. By learning how to use this map scale, students will better understand the true distance between points on the Earth's surface.

Purpose

In this lesson, students will use a ruler and map scale to measure and calculate distance in order to gain a better appreciation of the size of our planet.

Materials

Note: Answer Keys will need to be verified or perhaps created by the teacher due to issues with copy machines and printers.

- South America's Capital Cities map
<https://geoalliance.asu.edu/sites/default/files/maps/s-america-caps.pdf>
- Capital Cities of Central and Eastern Europe map
<https://geoalliance.asu.edu/sites/default/files/maps/ce-europe-caps.pdf>
- Practice Sheet and Answer Key
- Student Assessment and Answer Key
- Rulers

Objectives

The student will be able to:

1. Use a ruler to measure accurately.
2. Calculate distance on a map using the map scale.

Procedures

Prior Knowledge: Students should know how to read a ruler in both standard and metric units. Teacher will need to determine the answers to the worksheets using the same rulers provided for the students.

SESSION ONE

1. Begin the lesson by projecting the South America's Cities map. Demonstrate how to read the map scale and measure distance on a map. Project YouTube video if desired: Using Map Scale to Calculate Distance (1.27 min)
<https://www.youtube.com/watch?v=V3QxrX0MYu4>
2. Distribute the Practice Sheet and the South America's Cities map to students. For practice, ask students to use a ruler to measure distance between two points on the

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South America map. Instruct students to go to the nearest tenth of an inch when necessary. Repeat using two new locations as much as needed.

3. Then explain how the scale has both inches and kilometers. Challenge students to convert the inches to miles or kilometers. Use either method below depending on ability level of your students:
 - a. Multiply the whole number or mixed number by the miles per inch, for instance 750. (Remember to convert any mixed numbers to improper fractions before multiplying and to convert back.) *Example:* $1\frac{1}{2} \times 750 = \frac{3}{2} \times 750/1 = \frac{2250}{2} = 1125$ miles
 - b. Convert mixed number to a decimal number and multiply by 750 (miles per inch) to get answer. *Example:* $1\frac{1}{2} \times 750 = 1.5 \times 750 = 1125$ miles
4. Have students complete the Practice Sheet. Discuss the answers with students to ensure process is clear.

SESSION TWO

5. Distribute the Capital Cities of Central and Eastern Europe map and the Assessment. Have students complete the assessment.

Assessment

Mathematics and Geography

The Practice Sheet can be graded for accuracy. Questions 1, 2, 3, 4, 6 assess geography and questions 5, 7, 8, 9, 10 assess math. Mastery for geography is 4 or more questions correct. Mastery for math is 4 or more questions correct.

The Assessment can be graded. Questions 1, 2, 3, 4, 6 assess geography, and questions 5, 7, 8, 9, 10 assess math. Mastery for geography is 4 or more questions correct. Mastery for math is 4 or more questions correct.

Extensions

Students could plan a trip in their own state, country, or overseas and figure the mileage. This could include sights they wish to visit, the distance between them, and total mileage for the trip.