

How Far Is It? Measuring Distances Around the State

Students review measurement skills as they locate and measure distances between cities on an Arizona map.

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Grade Level	2-3
Duration	1 class period

National Geography Standards

ELEMENT ONE: THE WORLD IN SPATIAL TERMS

1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.

Arizona Geography Strand 4

CONCEPT 1: THE WORLD IN SPATIAL TERMS GRADE 2

PO 2 Interpret political and physical maps using the following elements:

c. compass rose

GRADE 3

PO 2 Interpret political and physical maps using the following elements:

c. compass rose

f. scale

Other Arizona Standards

Math Common Core Standards Measurement and Data (MD)

2.MD.1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

3.MD.4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.

Overview

Maps have a wealth of information available for understanding and practicing cardinal directions and locating specific places. Students can gain a better understanding of distance on a map when they actually measure with a ruler to the nearest inch and then compare it to the scale of the map.

Purpose

In this lesson students will gain a better understanding of measuring distances to the nearest inch using a ruler and an Arizona map. They will also become more familiar with the names of some of Arizona's cities and towns.

Materials

- Arizona's Cities, with Latitude and Longitude map (enough for each student to have one) and overhead transparency of this map

- How Far Is It? Student Handout
- How Far Is It? Student Handout Answer Key
- Ruler, Pencil
- How Far Is It? Assessment Sheet
- How Far Is It? Assessment Answer Key

Objectives

The student will be able to:

- Use cardinal directions to locate cities on a map.
- Use cardinal and intermediate directions to describe a city's location relative to another Arizona city.
- Measure how far in inches it is from one Arizona city or town to another.

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Procedures

Students should have had multiple experiences in measuring to inches with a standard ruler. (If not, please use rulers adapted for their appropriate experience level. These rulers usually indicate inch and half-inch marks only.) Prior to class, make one overhead of the map and enough paper copies for one per student. Copy the student handout pages.

SESSION ONE

1. Distribute the “Arizona’s Cities, Latitude and Longitude” map. Discuss the names of any cities the children know.
2. Using the overhead map, locate the cities mentioned on the “How Far Is It?!” student handout. Color the triangles at the city names with the appropriate colors.
3. Review cardinal directions (north, south, east, west) and intermediate directions (northeast, northwest, southeast, southwest) and together answer numbers 1-5 on the student handout.
4. Explain directions for numbers 6-8. As a class measure the distance from the triangle below the city name to the other city’s small triangle. Record the distance on the handout. Explain how measuring distance on a map in inches really means miles in actual distance. On this map one inch is really 50 miles.
5. Explain the directions for number nine. Allow students time to share answers or have students work in small groups to come up with the cities of their choice. (Some students may be able to

multiply the inches times the actual miles according to the scale and determine the distance in miles.)

Assessment

A two-page assessment sheet and answer key is available. The assessment is based on the “Arizona’s Cities, with Latitude and Longitude” map. Students need rulers and familiarity with locating Arizona cities to complete the multiple-choice assessment. Geography is assessed in every problem as students locate cities. Math is assessed on #5-10. Mastery is 80% for both math and geography.

Extensions

For an interesting extension of a dinosaur unit read the National Geographic Reading Expeditions book, *Digging for Dinosaurs* by Paul Sereno. Following the study of this book purchase dinosaur site maps for students to use to practice measuring distances on “real” dinosaur maps.

Have students create their own “treasure hunt” maps of hidden items on the playground or within the classroom. Distances can be measured in actual feet or yards.

Sources

[Digging for Dinosaurs](http://www.nationalgeographic.com/education/readingexpeds) is available to purchase at www.nationalgeographic.com/education/readingexpeds ISBN 0-7922-8887-4

To purchase real dinosaur maps see www.travelguidewarehouse.com