Tooling Around Arizona: Reading Arizona Maps

Students become acquainted with Arizona cities while learning map skills.

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<th>National Geography Standards</th>
<th>Arizona Geography Strand</th>
<th>Other Arizona Standards</th>
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| **ELEMENT ONE:** THE WORLD IN SPATIAL TERMS | **Grade 4**
| 1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective. | **Concept 1 The World in Spatial Terms**
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| PO 1 Use different types of maps to solve problems (e.g., road maps –distance, resource maps-products, historical maps-boundaries, thematic maps-climates).
| PO 6 Locate physical and human features using maps, illustrations, images or globes.
a. physical - seven continents, four oceans, river, lake, mountain range, coast, sea, desert, gulf, bay, strait
b. human – Equator. four hemispheres, North and South Poles, city, state, country, roads, railroads | **Reading**
| **Grade 5**
| **Concept 1: The World in Spatial Terms**
| PO 1. Interpret information from a variety of maps:
a. contour
b. population density
c. natural resource
d. historical maps | **Informational Text**
| **Concept 2 Places and Regions**
| PO 2. Describe the geographic characteristics of a state in the United States with the assistance of maps, the internet, atlases and other reference materials. | **Integration of Knowledge and Ideas**
| **4.RI.7** Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears. | **4.RI.7** Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. | **5.RI.7** Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. |
| **4.RI.9** Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably. | **5.RI.9** Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. |

**Writing**

**Language**

**Vocabulary Acquisition and Use**

**4.L.6** Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation). **5.L.6** Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., however, although, nevertheless, similarly, moreover, in addition).
Overview

Maps provide us with information about the land around us—including our neighborhood, city, state, country, and world. Maps have a special language all their own. Map language includes numbers, names, and symbols. These names, numbers, and symbols all represent real things that are usually too big to put on a piece of paper.

Purpose

This lesson will provide practice for students in using maps to measure distance and determine direction.

Materials

- AZ Cities with Latitude and Longitude map
- (no compass rose)
- AZ Cities with Compass Rose map
- AZ Topography map
- Landform Regions of AZ map
- World Map and U.S. Map (for extensions)
- Determining Directions Worksheet and key
- Measuring Distance Worksheet and key
- Elevation Worksheet and key
- Sample Venn Diagram
- Possible Brainstorm List
- Tooling Assessment
- Tooling Assessment Answer Sheet

Books: (OPTIONAL TO PROVIDE BACKGROUND INFORMATION FOR STUDENTS RELATED TO MAPS)
- Me on the Map by Joan Sweeney
- Maps and Globes by Harriet Barton

Objectives

The student will be able to:

- Determine map titles, symbols, scale, cardinal and intermediate directions, and elevation using maps of Arizona.
- prepare questions that can be answered and write directions that can be followed by using maps of Arizona.

Procedures

SESSION ONE

1. Have students brainstorm words that describe what is found on maps. The responses need to be recorded on their notebook paper. Use the following questions to help students think about what to write as they brainstorm: What kinds of maps are there? Where do you find maps? What are the parts of a map? What do you find on a map that helps you read and understand it?

2. As a whole class, share information from students’ brainstorm sheets. Organize the information using any type of graphic organizer. Subtitles of organizer could include Kinds of Maps, Purposes of Maps, Map Vocabulary.

3. Based on students’ knowledge, determine appropriate activity to continue lesson. If class has a common knowledge base, you are ready to continue with activities using maps. If class lacks adequate prior knowledge, begin lesson by reading and discussing the book Me on the Map or Maps and Globes to build a knowledge base for students.

SESSION TWO

4. Hand out AZ Cities map (with compass rose added if your students need it), Landform Regions of AZ map, and AZ Topography map. Direct students to find the Salt River. (Do not tell students which map to use.)

5. Give students a few minutes to look at the maps. Then pose the question: Which map would you use to help you find the Salt River? Why?

6. Pose the question: If you wanted someone to use a specific map, how would you decide which map to use? Answer: Use the title to help you decide.

7. Direct students to look at the three maps. Ask, “What are the similarities and differences between these three maps?” With students, make a list of things that they see on each map. You should have three specific lists when you are finished listing.

8. Make a Venn Diagram with the students comparing the three maps. (See Sample Venn Diagram)

9. Say to students, “Maps are drawings that depict the earth or any part of it, large or small. Let’s review the parts of a map. Maps have titles that
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tell the name of the map. The title often tells you specific information that can be found on the map.

10. Look at the three maps. Discuss the titles and purposes of each map. Ask students who would use each of the maps and for what purpose. (Topography maps show changes in elevation as well as water bodies.)

11. Say, “Symbols are representations of important features on the map. Look at each map and study the symbols and meanings.”

13. Say, “A scale on a map is used to measure distances using inches and centimeters. Look at each map and determine what the scale measures.” Review how to use a scale to measure distance.

15. Use the Measuring Distance worksheet to practice measuring distances between two cities in Arizona.

16. Say, “A compass rose shows the directions on a map. Sometimes it includes only cardinal directions. Sometimes it also includes intermediate directions.” Discuss cardinal and intermediate directions.

17. Look at Arizona’s Cities, with Latitude and Longitude map with added compass rose, and determine what kind of directions the compass rose shows. If your students are more advanced, give them the Arizona Cities map without the compass rose.

SESSION THREE
18. Use Determining Directions Worksheet to practice determining direction on map when going from one city in Arizona to another.

19. Say, “Elevation is the measurement of the altitude of the land in relation to sea level. Look at the “Arizona Topography map.” Discuss the key that shows the different elevations in Arizona.

20. Use the Elevation Worksheet to practice recognizing elevations in Arizona.

21. Administer the multiple-choice assessment following completion of the above activities.

22. After reviewing worksheets with students, provide an opportunity for them to write directions/questions for other classmates to follow and complete using AZ maps. Have students use their completed worksheets as a sample for writing directions for other students to follow. Once students have written directions, have them trade and complete.

Assessment

A multiple-choice assessment will be administered to students once the concepts/activities have been introduced and practiced. Mastery will be considered 80% or higher on each worksheet.

Reading skills can be assessed informally using the graphic organizer.

Student directions written for other students can be assessed using the simplified Six Traits Rubric using the trait of organization. Mastery will be considered a score of 4 or higher.

Extensions

Provide students with additional maps including United States and world maps and complete the same activities above.

Sources
