



DOGSTAILS: An Introduction to Map Reading Skills

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Grade Level 6-HS
Duration 1 class period

Adapted from a lesson used by the National Geographic Society
Education Foundation Alliance Network
Use TOADS For Grades 2-5 <https://geoalliance.asu.edu/toads>

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

Arizona Standards

ELA

Reading

Informational Text

Key Ideas and Details

6.RI.1, 7.RI.1, and 8.RI.1 Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

9-10.RI.1 and 11-12.RI.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

Integration of Knowledge and Ideas

6.RI.7 Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.

Arizona Social Science Standards

GEOGRAPHY

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

6.G1.1 Use and construct maps, graphs, and other representations to explain relationships between locations of places and regions.

7.G1.1 Use and construct maps and other geographic representations to explain the spatial patterns of cultural and environmental characteristics.

8.G1.1 Use geographic tools and representations to analyze historical and modern political and economic issues and events.

HS.G1.2 Use geospatial tools and related technologies to construct relevant geographic data to explain spatial patterns and relationships.

Overview

Map skills are basic to geographic understanding. Students need a system by which to analyze and evaluate maps. DOGSTAILS provides a standard for such assessment and can be applied to commercial maps used in the classroom as well as to maps generated by students.

Purpose

In this lesson, students will learn 9 essential elements of a good map. With this knowledge, they can evaluate and create maps.

Materials

- DOGSTAILS Elements and Questions or DOGSTAILS PowerPoint
- DOGSTAILS Notetaking Worksheet
- DOGSTAILS Arrows--copied in different colors of paper (1 set for every 2-3 students)

DOGSTAILS

- Sandwich bags to hold sets of arrows
- Variety of maps (campus, road, physical, political, etc.)
- Removable sticky dots (ex: Avery 06-167) Dots come in 2 types-removable and permanent. Permanent dots will ruin the maps and arrows.
- DOGSTAILS Assessment
- Map for Assessment (same map for every student)

Objectives

The student will be able to:

- Name, locate, and use the essential parts of a map.

Procedures

Background for Instructor: *Not all maps may have the 9 elements to be learned in this lesson, but it is a way to judge the usefulness of maps. Reassure students that it is okay if they have a map without all 9 elements. Once the students can identify the elements on a printed map, they can then be responsible for including the elements on any maps that they create.*

Preparation: *Copy DOGSTAILS arrows on different colors of paper (1 set for every 2-3 students). (Different colors of paper help sort the arrows if loose arrows are found.) If possible, laminate the arrows for durability. Put sets of arrows in sandwich bags. Gather a variety of maps including those for countries, states, attractions, campuses, cities, national parks, etc.). While road maps work the best for this activity because they usually have an index of place names, an interesting legend, and a grid, a good assortment of maps will reflect what students will encounter in real life. Buy **removable** sticky dots such as Avery #06-167. Permanent dots will ruin the maps for use by future classes.*

1. Distribute the same paper map to the students or point to a projected map. Ask the students, "What do you see on this map?" Write their comments on the whiteboard. Then ask, "Why is it important to gain as much information from a map as you can?" (Possible answers include: so they can use the map to get to the right place, so they can make accurate spatial judgements about where things are, so that they can evaluate the map for accuracy, so they can figure out where it's from or why it was made, etc.).
2. Then ask the students, "What is an acronym and why do we use acronyms?" (A word formed

from taking the initial letter of a group of words which aids in memory retention.) Explain that DOGSTAILS is an example of an acronym that they will be learning today. DOGSTAILS is an analysis process that should be used whenever a person deals with a map--even Google Maps--to gain as much information as they can from the map. Distribute the DOGSTAILS Notetaking Worksheet.

3. Project DOGSTAILS PowerPoint. (Note: The PowerPoint is set up as asking students to guess what the letters in the acronym stand for and then gives the correct answer.) Explain the elements using the slideshow. Students should be recording pertinent information on their notetaking worksheet.
4. Have students return to their comments on the whiteboard. How many of these comments were elements of DOGSTAILS?
5. Divide the students into groups of two or three. Give each group a different map and a bag of arrows. Model for the students how to find one of the elements on a map and affix the arrow with the sticky dot at the tip of the arrow. Give students about 5-10 minutes to find as many elements as they can. Remind students that not every map will have every element.
6. Have student take their arrows off and switch maps with another group. Repeat the process of labeling the map with the arrows.
7. When students seem proficient at working in groups to find the map elements, give them the DOGSTAILS Assessment and a map as a practice test. Have the students work independently or in small groups to answer each of the guiding questions. Discuss as a whole class what the answers could be. When students seem proficient at answering the guiding questions, choose another map and give the summative assessment using the DOGSTAILS Assessment.

Assessment

Geography and ELA

The worksheet and assessment can be graded for accuracy. Mastery would be considered a score of 80% or higher.

Extensions

Reinforce the procedure whenever new maps are used.

DOGSTAILS

Whenever students create their own maps, have them include some or all of the elements of DOGSTAILS.

Sources

This lesson originally distributed using the acronym "TOTALSIGs" and was very popular with geography educators. Mary Ann Polve and Gale Olp Ekiss switched the letters to make DOGSTAILS. All credit is due the originator(s) of this lesson.

Originators:

Anderson, Jeremy. Teaching Map Skills Through an Inductive Approach. Indiana, PA: National Council for Geographic Education, 1986
Smothers Marcello, Jody. Teaching Map Skills: An Active Learning Approach. Revised and Expanded by Jody Smothers Marcello. Washington, DC: National Council for Geographic Education, 2007. (Map Elements Lesson, pages 9-16.)

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