

Lesson 2: Maps of All Kinds

Getting Started

A map can be a terrific tool for learning more about the physical environment, but only if it's the right kind of map for your needs. Just as you couldn't effectively use a wrench to try to drive in a nail, you can't use a political map to understand mountain elevations or a contour map to figure out population density. A map is a tool, but, like most tools, each map is designed to meet specific needs.

Stuff You Need

- ✓ *Geography of the World* by DK Publishing
- ✓ *The Geography Book: Activities for Exploring, Mapping, and Enjoying Your World* by Caroline Arnold
- ✓ Camera
- ✓ colored pencils or markers

Ideas to Think About

- How can the physical environment be represented visually?
- How might it be useful to have different ways of representing the physical environment?

Things to Know

- Maps can represent the physical world in a variety of ways.
- The **key** or **legend** of a map explains what the symbols, colors, and patterns on the map represent.
- Maps contain specific kinds of information; when you need to know a particular kind of information, it is important that you consult the right kind of map!

Reading and Questions

Read pages 8-9 in *Geography of the World*, paying particular attention to the description of the maps on page 9. You'll notice that the large maps for each location will often include both natural features like mountains and rivers and human-created features like national borders and major cities. The smaller locator map provides less detail but shows a particular country or region in the context of the countries surrounding it. Answer the following questions:

1. Name at least three kinds of information that you can find in the map pages of this book.

2. When might you want to use the locator map?

3. Can you think of any kinds of maps that you have used that are not like the maps on page 9? (Hint: You may have used one on a car trip or seen one on the TV news when you're checking the forecast.)

Activities

Activity 1: Keys Unlock the Secrets of Maps

Your reading in *Geography of the World* explained the meanings of the symbols used on the maps in that book. The part of a map that tells you what the symbols, colors, or patterns on the map represent is called the key or the legend. In this activity, you'll create your own map of a place you know well, use symbols to identify important features, and create a key to help people who read your map know what those symbols mean.

Read pages 27-28 in *The Geography Book*. Follow the directions on the "The Key to Your Neighborhood" activity sheet to create a map of your neighborhood, create symbols for

features on the map, and fill in the key. The example in *The Geography Book* may give you some ideas for the kinds of symbols you could use in your key, but feel free to be creative and make your own, too. Share your finished map and key with a parent and see if he or she can easily understand the symbols that you chose.

To help make your map more accurate, refer to a printed map that shows your street and the surrounding area. You can use a local road map, or, with a parent's help, you can visit Google Maps or MapQuest and enter your street name, city, state, and zip code to see a map of the streets in your immediate area.

Extension

Since you were the cartographer (mapmaker) for this neighborhood map, you probably used symbols for things that are important to you or for places that you visit often. How might a map of the same place be different if it had been created by someone else? For example, a truck driver for a delivery service might want the map to have a special symbol for the houses on his route, or the family dog might want the map to feature a special symbol to show the locations of all of the other dogs in the neighborhood. Using a different-colored pencil, you could add more symbols to your map with other people's (or other creatures'!) interests in mind.

Google Maps
www.movingbeyondthepage.com/link/117/

MapQuest
www.movingbeyondthepage.com/link/118/

Activity 2: Different Maps for Different Needs

Cartographers create different kinds of maps to meet different needs. Some maps provide a visual representation of different kinds of terrain, such as mountains or deserts, using colors, contour lines, or graphics. Others show roads, train tracks, and subway routes. Maps can show weather patterns, property ownership, or political boundaries. They can provide information about natural resources, animal habitats, or economic trade.

For this activity, you'll examine five different maps of a small, imaginary island. Think of

a name for this island and write that name at the top of each map on the "Different Maps for Different Needs" sheet. Then ask your parent which of the "Using Your Five Maps" pages you should use (Option 1 or 2) and follow the directions on that page.

□ **Activity 3: Panoramic Photograph or Sketch (Optional)**

If you have time, the following activity is a really fun way to demonstrate panoramic photographs.

Read pages 25-26 in *The Geography Book*. Follow the directions for creating a panoramic photo, with this modification: take a panoramic photo of the neighborhood you drew in Activity 2. Find a place where you can see a significant part of the neighborhood - it doesn't necessarily have to be a tall building like the one used in the example in *The Geography Book* - and take pictures while turning around in a circle. Try to make sure that there is some overlap between one picture and the next.

This activity is even easier with a digital camera since you won't need to wait for film processing - you can just print out your pictures at home - or, if you're skilled with photo-editing software, you may even be able to create a panoramic photo from individual images on your computer.

After you have had your pictures developed or printed, tape your resulting photos together to make one panoramic photograph. Use the "Photo vs. Map" activity page to compare your panoramic photo to your map of the same place.

Optional Extensions

The following links provide some fun and informative extensions to this activity on maps and panoramic photos.

Google Maps Street View

www.movingbeyondthepage.com/link/4822/

Google Maps offers a Street View feature that shows you what it looks like to be standing on almost any street in America. This is a great way to look at the difference between a map and a photo since you can jump back and forth between the two.

If you are interested in maps and pictures, click on the link above, type in your address, and then go back and forth between the map, satellite, and street views. Ask a parent for help if you need it.

Library of Congress: Panoramic Photos

www.movingbeyondthepage.com/link/4023/

The Library of Congress provides some really neat panoramic photos of historic places and people.

Panoramic Maps

www.movingbeyondthepage.com/link/62/

This site contains more panoramic maps that you can explore.

Shooting Panoramic Photos

www.movingbeyondthepage.com/link/4021/

This site provides an explanation of shooting a panoramic photo with an antique camera.

Wrapping Up

There are many ways of mapping an environment, and you've explored only a few of them in these activities. What other kinds of maps can you imagine? What unique needs would those maps serve?

Life Application

Think about a route that you or your family travel on a regular basis. This could be the trip from your home to the home of a friend or relative, the route you take to the library, the route you take to a favorite park, or some other regularly traveled route. Find a local

road map (you can usually find an inexpensive local road map at a gas station, or you can use an online mapping tool) to identify your usual route. Using the map, plan an alternative route that might save time or mileage, allow you to visit another place along the way (for example, how could you drop off your library books on your way to the park?), or let you try a road you've never taken before. Write out directions for this route using your map and ask a parent if you can take that route sometime just for fun. You can find out more about road maps on pages 33-34 of *The Geography Book*.



Key to Your Neighborhood

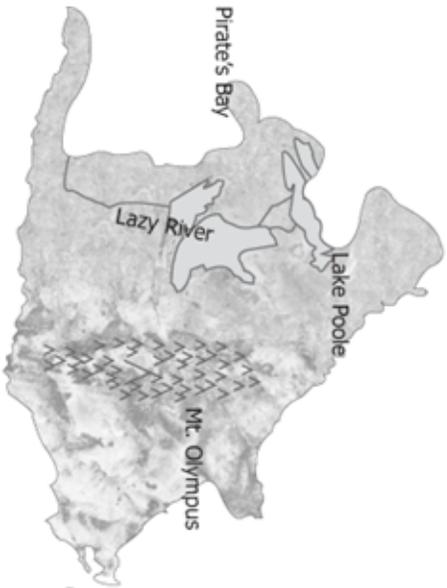
Directions: Draw a map of your neighborhood. Decide what kinds of places or features you want to mark with a special symbol. Be sure to draw each symbol and write its meaning in the Map Key. Create at least four symbols to use on your map.

MAP KEY	



Different Maps for Different Needs

Map I
Geographic Features



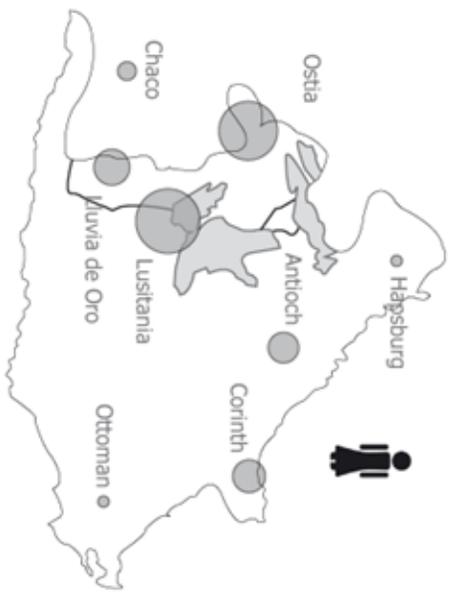
Map II
Cities & Counties



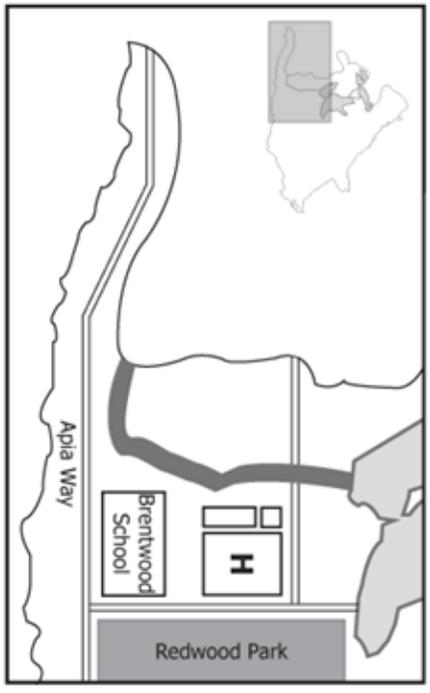
Map III
Industries & Resources



Map IV
Population Density



Map V
Street Map





Using Your Five Maps

Directions: Check the map that corresponds to the following scenarios.

1 2 3 4 5

You are a homeowner who needs to know whether your house is in Edison County or Graham County so that you know where you need to go in order to vote.

You need to figure out the fastest way to get from Brentwood School to Redwood Forest Park.

You are a world-famous mountain climber looking for a challenging climb.

You are a biologist looking for a largely unpopulated area where you can create a wildlife refuge.

You are a newspaper reporter who is planning to visit the island for a story on farming communities, and you need to know where you could go to find interviewees.

You are on Apia Way and need to know how to get to the nearest hospital.

You are a business owner who wants to build a new shopping center in an area with a lot of potential customers.

You are a naturalist who is looking for a rare plant that grows only along the edges of rivers in hilly areas.

You are interested in mining and want to know where that kind of activity takes place on the island.

You are wondering whether Edison County or Carroll County has a larger geographic area.





Using Your Five Maps

Directions: Each of the five different maps provides different information about the island. Think of at least two different scenarios in which you might find it useful to use each map. For example, you might want to use Map 5, which provides city-level details, to figure out where the nearest police station might be.

Map I

1. _____
- _____
2. _____
- _____

Map II

1. _____
- _____
2. _____
- _____

Map III

1. _____
- _____
2. _____
- _____

Map IV

1. _____
- _____
2. _____
- _____

Map V

1. _____
- _____
2. _____
- _____

Bonus Question: Can you think of a scenario in which you might need to consult two or more of these maps in order to gather all of the information that you need?

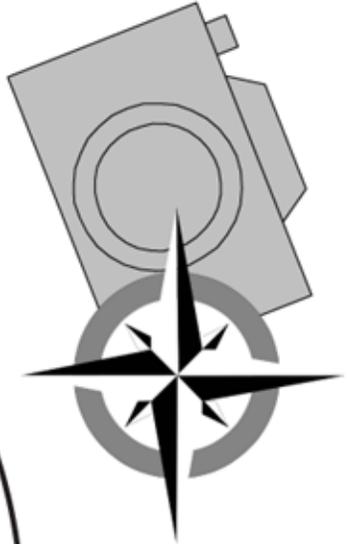
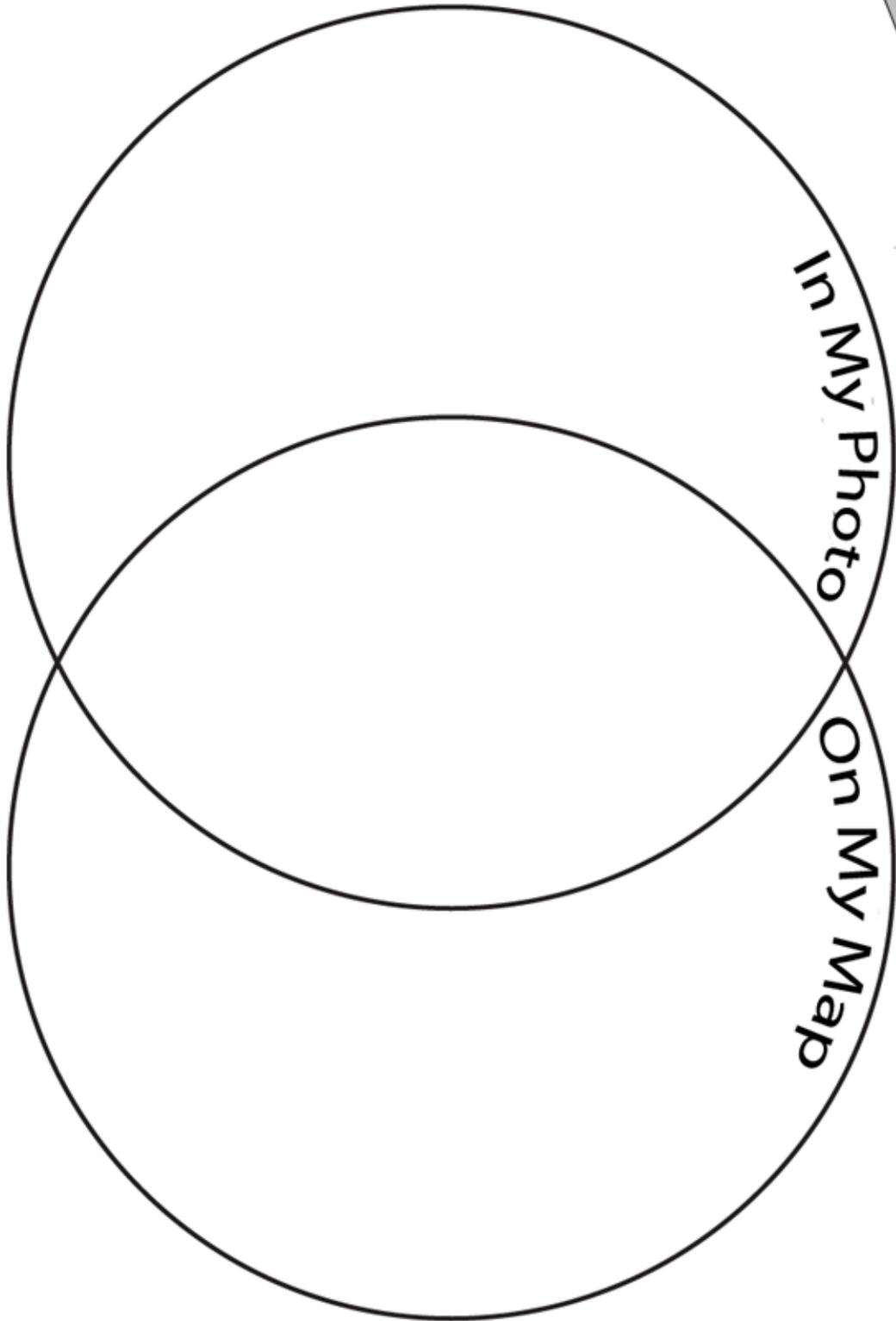


Photo vs. Map

Directions: Use these circles to record things that are in your photo and things that are on your map. If something appears in both the photo and the map, write it in the overlapping area. If you think of something that is neither in your map nor in your photo, write it in the area outside the circles.



In My Photo

On My Map

Parent Overview

Lesson 2: Maps of All Kinds

Getting Started

? Big Ideas

- How can the physical environment be represented visually?
- How might it be useful to have different ways of representing the physical environment?



Facts and Definitions

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Skills

- Identify and use models and maps as ways of representing landforms. (SS)

Introducing the Lesson

In the last lesson, your child created globes and used an orange to figure out how to represent a round object on a flat surface. Explain to your child that in this lesson, he will be exploring more kinds of maps and their different uses. Ask what kinds of maps your family has used before. You may even ask your child to go on a map scavenger hunt and find a few examples of maps around the house (road maps, maps inside the telephone book, maps in an atlas or encyclopedia, maps in a history text, etc.).

Reading and Questions (Answers)

1. Name at least three kinds of information that you can find in the map pages of this book.

- Your child might mention the location of specific places relative to one another, geographical features (mountains, rivers, lakes, deserts), the locations of cities and towns, the capital cities of various countries, borders, national flags, weather information, or other facts.

2. When might you want to use the locator map?

- The locator map shows where a country is located relative to other countries on its continent. This map also allows the reader to see how near the country is to the equator, the Tropics of Cancer and Capricorn, and the poles, allowing the reader to get a rough sense of the climate of the country. So the locator map could be used if you wanted to know where a country is located on its continent, where it is located relative to other nearby countries, or what its climate might be like. Your child may have other creative ideas for how this map might be useful as well.

3. Can you think of any kinds of maps that you have used that are not like the maps on page 9? (Hint: You may have used one on a car trip or seen one on the TV news when you're checking the forecast.)

- Answers may vary, but your child might mention a road map, a weather map, a map of a nature trail or park, a map that they use in a game, or a map that might be found in a book they have read.

Outline of Activities and Answer Keys

Activity 1: Keys Unlock the Secrets of Maps

In this activity, your child will create a map of his neighborhood and create a legend or key to help readers understand the symbols used on the map. Your child may need assistance using a printed road map that shows your street or using Google Maps, MapQuest, or another online mapping website to see a rough map of your vicinity that he can use as the basis for his own, more detailed map. Your child should use at least four symbols on the map. Discuss the map with your

child and ask about why he chose to include certain features or why he used the symbols that he created to represent various features.

Activity 2: Different Maps for Different Needs

In this activity, your child will explore five different maps of an imaginary island to determine how someone might use each of the different types of maps. There are two versions of the "Using Your Five Maps" page. Option 1 asks the student to determine which map would best meet the needs of ten different people. Option 2 requires the student to imagine and write about two different uses for each kind of map. The second option requires greater creative problem solving and more writing than the first. Choose the option that you think will be the best fit for your own child.

Answers for "Using Your Five Maps," Option 1:

1. Map 2
2. Map 5
3. Map 1
4. Map 4
5. Map 3
6. Map 5
7. Map 4
8. Map 1
9. Map 3
10. Map 2

Activity 3: Panoramic Photograph or Sketch (Optional)

For Activity 3, your child will be creating a panoramic photo of the same space that he mapped in Activity 2. He may need your help with the camera or with finding an effective (and safe!) place to stand while taking the photos. He may also need assistance in having prints made, either through a photo developer or, if you're using a digital camera and home computer, by printing them out at home.

Optional Extensions

Your child may need assistance navigating through some of the websites listed for this extension.

Wrapping Up

Questions to Discuss

- Why are there so many different kinds of maps?
- What kinds of maps did you find most interesting? Why?
- How did your panoramic photo compare to your map? Would one be more useful than the other?