All Over the Map

A Closer Look at Maps

As science and technology advance, maps become more advanced and more readily available. Things like GPS devices and customized online map searches have become part of our daily lives. Consequently, students are curious about maps and their uses. The *All Over the Map* Teacher Guide serves to fuel further exploration of geography and map skills. By using this guide, you have an opportunity to tap into high student interest while exposing students to broader social studies issues.

Participation in these lessons will lead students to make global connections and understand higher-level concepts, such as classifying, reading, and analyzing different types of maps. Students will become aware of some of the issues involved in making and using maps. They will realize that maps can be used to share a variety of geographical, political, and social information.

The lesson plans in this guide are tailored for grades 3-4 and address various subjects, such as language arts, mathematics, and social studies. Each lesson plan is designed to stand alone. As such, they do not need to be presented in sequential order. Helpful reproducible worksheets and rubrics appear at the end of the guide. The book titles referenced in this guide include:

Drawing Maps

Map Parts

Map Types

Reading Maps

As students investigate the topics addressed in the guide and become more aware of maps and their uses, they will sharpen their critical thinking skills to work towards creative solutions to worldwide problems. We invite you to jump in and ask questions with your class as you have fun learning more about maps.

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National Standards Correlation

Lesson Plan Title	Correlation to National Standards
Symbol Sense	**Language Arts** Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works. **Social Studies** The learner can interpret, use, and distinguish various representations of the earth, such as maps, globes, and photographs. The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information.
Read Between the Lines	**Language Arts** Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works. **Mathematics** Students should make and use coordinate systems to specify locations and to describe paths. **Social Studies** The learner can interpret, use, and distinguish various representations of the earth, such as maps, globes, and photographs. The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information.
Which Map Do I Use?	**Language Arts** Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works. **Social Studies** The learner can interpret, use, and distinguish various representations of the earth, such as maps, globes, and photographs. The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information.
Where in the World?	**Language Arts** Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works. **Social Studies** The learner can interpret, use, and distinguish various representations of the earth, such as maps, globes, and photographs. The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information.

Lesson Plan Title	Correlation to National Standards
Follow the Directions!	**Language Arts** Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes. **Social Studies** The learner can create, interpret, use, and distinguish various representations of the earth, such as maps, globes, and photographs. The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information.
Going the Distance	**Mathematics** Students should understand such attributes as length, area, weight, volume, and size of angle and select the appropriate type of unit for measuring each attribute. Students should recognize and apply mathematics in contexts outside of mathematics. **Social Studies** The learner can estimate distances and calculate scale.
Road Trip	**Language Arts** Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works. **Mathematics** Students should select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and the size o.f angles. Students should recognize and apply mathematics in contexts outside of mathematics. **Social Studies** The learner can interpret, use, and distinguish various representations of the earth, such as maps, globes, and photographs. The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information. The learner can estimate distances and calculate scale
The Evening News	**Language Arts** Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes. Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information). **Social Studies** The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information. The learner can work independently and cooperatively to accomplish goals.

For state specific educational standards, please visit www.crabtreebooks.com/.

Overview and Scope of Lesson Plan Activities

Lesson Plan Title	Subject Areas	Major Concepts
Symbol Sense	Language Arts Social Studies	• map parts • interpreting maps
Read Between the Lines	Language Arts Math Social Studies	• longitude and latitude • interpreting maps
Which Map Do I Use?	Language Arts Social Studies	• map types • problem-solving
Where in the World?	Language Arts Social Studies	• interpreting maps • completing maps
Follow the Directions!	Language Arts Social Studies	• compass directions • interpreting maps
Going the Distance	Math Social Studies	• scale • drawing maps • multiplication
Road Trip	Language Arts Math Social Studies	• interpreting maps • scale • division
The Evening News	Language Arts Social Studies	• drawing maps • speaking skills • cooperation

Pacing Chart and Vocabulary

One class period is approximately 40 minutes.

Lesson Plan Title	Pacing	Vocabulary	Assessment
Symbol Sense	1 class period	cartographer legend represent symbol	Evaluate student reproducibles and maps for understanding of major concepts.
Read Between the Lines	1 class period	horizontally latitude longitude vertically	Check student reproducibles for thoughtful questions and accurate answers.
Which Map Do I Use?	1 class period	physical map political map road/street map topographic map weather map	Monitor students for participation and accuracy of responses.
Where in the World?	1–2 class periods	atlas continent equator ocean prime meridian	Evaluate student reproducibles for completion and accuracy.
Follow the Directions!	1–2 class periods	cardinal directions compass rose intermediate directions landmarks	Evaluate students' written directions for accuracy and clarity.
Going the Distance	2–3 class periods	centimeters inches kilometers miles scale	Evaluate student reproducibles for completion and understanding of using a scale.
Road Trip	2–3 class periods	destination distance visitor map	Evaluate student reproducibles for completion and accuracy.
The Evening News	2–3 class periods	illustrate visual aids	Collect and review student reproducibles. Evaluate student performances for participation and understanding of major concepts.

Symbol Sense

A Lesson on Map Symbols

Content

Students will learn how to draw a legend using symbols. They will then use a legend to find places on a map.

National Standards

The following standards will be addressed in the lesson:

Language Arts

Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.

Social Studies

The learner can interpret, use, and distinguish various representations of the earth, such as maps, globes, and photographs.

The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information.

Multiple Intelligences

The following intelligences will be activated throughout the lesson:

 Linguistic

 Visual-Spatial

Prerequisites

Students should read the books *Map Parts* and *Reading Maps* to familiarize themselves with symbols and legends before starting the lesson.

Materials

- *Map Parts* and *Reading Maps* books
- chalkboard and chalk or whiteboard and markers
- student copies of the *Symbol Sense* reproducible
- a collection of complex maps that have complex legends (1 per group of 2 students)
- pens or pencils (1 per student)
- colored pencils or markers

Instructional Procedure

Anticipatory Set

Draw a simple picture of a book on the board. Ask: *What could this book represent?* (a book; reading; learning) *If you saw this drawing of a book on a map, what could it mean?* (It could show the location of a library, a bookstore, or a school.) Tell students that a *symbol* is something that represents something else. Symbols on a map are pictures that represent places or things.

Class Discussion

Have students brainstorm a list of ten or more notable sites in your town and record their suggestions on the board. Encourage students to list well-known parks, schools, and businesses. Next, choose two of these places and discuss logical symbols for each of them. For instance, a tree could represent a park, or a menu could represent a restaurant. As students provide symbol ideas, ask them to explain why they chose those symbols to represent those sites.

Objectives

The student will be able to…

- find places or things on a map by referring to a *legend*
- create logical *symbols* and a legend to *represent* notable places in his or her town

Activity

Part I: Create Symbols

Distribute the *Symbol Sense* reproducible. Tell students that they should look at the list on the board and choose 6–8 places in your town. Next, they should create a logical symbol to represent each place. They should then use the *Symbol Sense* reproducible to create a legend that shows the symbols and what they represent.

Model the assignment by drawing students' attention to the example on the reproducible. Explain that in the example, schools are symbolized with a picture of a pencil. Have students follow the example by using colored pencils or markers to draw their symbols and then writing the name of each place next to its corresponding symbol.

Part II: Search for Symbols

Next, tell students that they will practice using a legend to find places on a map. Divide students into pairs, and give a map to each pair. Explain that students should study the legends on the maps, then find and circle 2 examples (if possible) of each symbol on the map. For instance, if the legend includes a symbol for bus stops, then students would locate and circle 2 bus stops on the map.

After pairs circle their examples, instruct them to answer the questions at the bottom of the reproducible

Accommodations and Extensions

Have students include only 3–4 places on their legends. Work with them to brainstorm a logical symbol to represent each place.

As an extension, have students add another 3–5 sites and symbols to their legends.

Closure

Have volunteers present their legends from Part I and explain their reasons for choosing their symbols.

Next, ask groups to share their answers from Part II about the map locations they circled. Then ask: *What are some important points that cartographers should keep in mind while creating their symbols?* (Make the symbols clear, logical, and easy to see on the map.)

Assessment

Evaluate student reproducibles and maps for understanding of major concepts.

Read Between the Lines

A Lesson on Longitude and Latitude

Content

Students will learn the meaning and importance of longitude and latitude. They will use longitude and latitude to identify locations on a map.

National Standards

The following standards will be addressed in the lesson:

Language Arts

Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.

Mathematics

Students should make and use coordinate systems to specify locations and to describe paths.

Social Studies

The learner can interpret, use, and distinguish various representations of the earth, such as maps, globes, and photographs.

The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information.

Multiple Intelligences

The following intelligences will be activated throughout the lesson:

- Linguistic
- Logical-Mathematical
- Visual-Spatial

Prerequisites

Before starting the lesson, students should read the book *Reading Maps*. They should pay particular attention to pages 20–23, which explain the compass rose and directions, and pages 24–25, which explain longitude and latitude.

Materials

- *Reading Maps* books
- chalkboard and chalk or whiteboard and markers
- a large world map with lines of longitude and latitude marked
- student copies of a U.S. map with lines of latitude and longitude marked
- pencils (1 per student)
- student copies of the *Read Between the Lines* reproducible
- scissors (1 pair per 3 students)

Instructional Procedure

Anticipatory Set

Ask student volunteers to define the terms *latitude* (the distance north or south from the equator) and *longitude* (the distance east or west from the prime meridian). Encourage them to refer to their *Reading Maps* books to find the answers. Write the terms and definitions on the board. Then, show students examples of longitude and latitude lines on pages 24 and 25 of *Reading Maps*.

Class Discussion

Show students a world map with the lines of longitude and latitude marked. Explain that the number of each line can be used to describe the location of a particular place. Beginning at the equator, count the lines of latitude going north from 0 to 90 and explain that when describing a line north of the equator, you write the number followed by an N for "north of the equator." Show students how to count the lines of latitude going south from 0 at the equator to 90 at the South Pole, writing numbers followed by an S. Walk students through the same process for lines of longitude: Explain that the numbering for longitude starts at 0 at the prime meridian and goes up to 180 in both directions. Ask students what letter they think should be written after numbers going east and west. (an E or W after each number) Tell students that for both latitude and longitude, the number is always followed by °, the degree symbol, so the number 60°N is read as "sixty degrees north."

Objectives

The student will be able to…

- identify the meaning and importance of *longitude* and *latitude*
- describe locations using the grid numbers of latitude and longitude lines
- identify a location when given its latitude and longitude

Activity

Part I: Latitude and Longitude Location

Walk students through the process of finding the latitude and longitude of a given location. Give each student a U.S. map with the lines of latitude and longitude marked. Tell students to find Chicago on their maps and point to it. Have them run their fingers *horizontally* across the page to find the number of the nearest line of latitude. Explain that sometimes it won't be exactly on a given line, so they can estimate using the line closest to the location. Write that number (it should be around 42°N) on the board. Then have students do the same thing for longitude, running their fingers *vertically* along the page to find the nearest number. Write that number (it should be around 88°W) next to the latitude, and tell students that that entire number, 42°N 88°W, describes the location of Chicago. Then tell students that they can also do the reverse: They can identify a city if they're given its location in latitude and longitude. Write 40°N 74°W on the board and ask students to name the city at that spot (New York City).

Part II: Search for Symbols

Divide students into groups of three, and give each group a copy of the *Read Between the Lines* reproducible. Explain that each group is going to write a 5-question quiz, including an answer key, using what they just learned about latitude and longitude. Explain that for their quiz questions, students can either provide the name of the city and ask for its latitude and longitude, or provide the latitude/longitude and ask for the name of the city. Tell students to write their questions on the "Question" lines on the page, but to leave the "Answer" lines blank. Have the groups write their answers on the "Answer Key" lines at the bottom of the page. Once they've written all their questions and filled in the answer key, have students cut along the dotted line to separate the quiz from the answer key.

Then have each group exchange quizzes with another group, keeping the answer key for their own group's quiz. Students should work with their group members to answer the questions on the other group's quiz. Once each group has completed their new quiz, have them switch back to go over the answers. Have each group use their answer key to evaluate the other groups' responses. If any questions were answered incorrectly, the groups should discuss the questions so that all group members understand the correct answer.

Accommodations and Extensions

Write two model questions on the board to have students copy onto the first two "Question" lines of their reproducibles. Then have students work in groups to answer those questions and to write and answer three more questions of their own.

As an extension, have students write three additional questions using the world map instead of the U.S. map.

Closure

Ask: *Why are lines of latitude and longitude important?* (They help you describe the location of a place very specifically. The numbers are always the same regardless of what map you're looking at.) *In what ways are lines of latitude and longitude helpful when describing a location?* (They tell you how far in a certain direction a location is, and using numbers is more specific than trying to use words to describe the location.)

Assessment

Check student reproducibles for thoughtful questions and accurate answers.

Which Map Do I Use?

A Lesson on Types of Maps

Content

Students will learn about the characteristics of and uses for different types of maps, such as political maps, physical maps, road/street maps, weather maps, and topographic maps. They will learn how to determine which type of map is best suited for a situation and practice choosing maps for a variety of situations.

National Standards

The following standards will be addressed in the lesson:

Language Arts

Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.

Social Studies

The learner can interpret, use, and distinguish various representations of the earth, such as maps, globes, and photographs.

The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information.

Multiple Intelligences

The following intelligences will be activated throughout the lesson:

 Bodily-Kinesthetic

 Logical-Mathematical

 Visual-Spatial

Prerequisites

Students should read *Map Types* to gain the understanding that different maps provide different kinds of information and serve different purposes.

Materials

- *Map Types* books
- chalkboard and chalk, or whiteboard and markers
- a U.S. weather map from the local newspaper
- a U.S. political map
- student copies of the *Which Map Do I Use?* reproducible
- scissors (1 pair per student)

Instructional Procedure

Anticipatory Set

Review with students the purpose of maps. Have students brainstorm a list of map types, using the *Map Types* books as a reference. Write the list on the board. Help the class identify differentiating characteristics of each map type. For example, a *street map* provides the names and paths of roads in a specified area, while a *physical map* shows the landforms and waterways of an area. Add each map type's characteristics to the list on the board.

Class Discussion

Show students the U.S. *weather map* and U.S. *political map*. Have students identify each map type. Ask: *What do these maps have in common?* (They both show the United States.) *How are they different?* (One shows temperatures and one shows only states and cities.) Ask: *Why would you use this weather map?* (to find out the temperature of a city or state) *Why would you use this political map?* (to find out the location of a city or state) Refer students to the list of map types on the board. Help the class to identify situations in which each map type would be useful. Remind students that more than one map type may fit a particular situation. For example, the location of a city can often be determined using a *road map* or a political map and the height of a mountain might be shown on a *topographic map* or a physical map.

Objectives

The student will be able to…

- identify *political maps*, *physical maps*, *road/street maps*, *weather maps*, and *topographic maps*
- identify characteristics of and uses for different types of maps

Activity

Distribute the *Which Map Do I Use?* reproducible and make sure each student has a pair of scissors. Have students cut out the map type and situation cards. Remind students to clean their workspace after they've cut out their cards. They should have only their cards in front of them when the activity begins.

Once all students have their cards cut out, arrange students in groups of four. Have each student put their cards face-down in two separate piles on their desks: one pile of map type cards and one pile of situation cards. Explain that students are going to play a map matching game. The first student will draw one card from each pile. If the map type would be appropriate for the situation, the student must explain why it's a good match. If the rest of the group agrees with the student's reasoning, the student may keep the pair of cards, but if the rest of the group disagrees, then the student must put the cards back in their corresponding piles. Remind students that some situations may have more than one appropriate map type that fits. If the map type does not fit the situation, the student must explain why it's not a match and then put the cards back in their corresponding piles. Students should take turns drawing cards from their piles. The game continues around the circle until one group member has collected five matching pairs

Accommodations and Extensions

Have students line up the cards face-up in two columns on their desks: one column of map type cards and one column of situation cards. Then have students select three matching pairs by choosing one from each column and explaining why they chose those cards.

As an extension, provide students with some blank cards and have them write in their own situations to be incorporated into the matching game.

Closure

When all groups have finished playing, ask: *How do you determine which map to use in a certain situation?* (You figure out what kind of information you need or want.) Then ask volunteers to explain why one of their pairs is a good match.

Assessment

Monitor students for participation and accuracy of responses.

Where in the World?

A Lesson on Understanding and Creating a World Map

Content

Students will learn to use an atlas. They will become familiar with the characteristics of different types of maps, and they will identify various physical and political features shown in maps. Students will then demonstrate their understanding of atlases and maps by labeling and completing their own world maps.

National Standards

The following standards will be addressed in the lesson:

Language Arts

Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.

Social Studies

The learner can interpret, use, and distinguish various representations of the earth, such as maps, globes, and photographs.

The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information.

Multiple Intelligences

The following intelligences will be activated throughout the lesson:


Linguistic


Logical-Mathematical


Visual-Spatial

Prerequisites

Before starting the lesson, students should read the book *Drawing Maps* to familiarize themselves with features and types of maps. Students should have a basic understanding of how to create a map and should reinforce that understanding by rereading the box on page 29 of *Drawing Maps*.

Materials

- *Drawing Maps* books
- atlases (1 for every two students)
- student copies of the *Where in the World?* reproducible
- crayons or colored pencils

Instructional Procedure

Anticipatory Set

Divide students into pairs and give each pair an *atlas*. Explain that an atlas is a book of maps. Have students go on a scavenger hunt through the atlas, using the table of contents and index to find a variety of maps of your choosing, such as a U.S. map, a map of your geographic region, and a map of your state. Ask students to identify at least one item on each map, such as the map scale or locations of cities, waterways, and landforms. The last map for the scavenger hunt should be a physical map of the world. Have students use what they learned in *Drawing Maps* to identify the different parts of the world map, including the labels, compass rose, and legend.

Class Discussion

Ask students to explain whether the physical map in the atlas is simple or complex. (If the map is simple, students should explain that the map is simple since it doesn't have many features or symbols. If the map is complex, student should explain that it is complex because it has lots of symbols and other features.) Students may wish to review page 8 in *Drawing Maps* to help make their decision. Then, help students compare and contrast the world map in the atlas with the world map on pages 28–29 of *Drawing Maps*. Guide students to look at the content, legend, and scale of each map. Next, have students find a political world map in the atlas and guide them as they compare and contrast the atlas map with the political map on pages 30–31 of *Drawing Maps*. As a class, discuss situations in which one might choose to use a political map over a physical map, or vice versa. For example, students might suggest using a physical map to determine the path of a river but using a political map to identify the capital city of a country.

Objectives

The student will be able to…

- use an *atlas*
- locate the seven *continents* and the four *oceans*
- locate the *equator* and *prime meridian*
- label a world map

Activity

Part I: What's in the world?

Using the world maps in the atlas and *Drawing Maps* to illustrate, explain to students that the world is made up of landmasses and bodies of water. Tell them that the largest landmasses are called *continents* and that the largest bodies of water are called *oceans*.

Have each pair find a political world map in their atlas and use it to create a list of the continents (Africa, Antarctica, Asia, Australia/Oceania, Europe, North America, South America) and the oceans (Arctic Ocean, Atlantic Ocean, Indian Ocean, Pacific Ocean). Ask: *How many continents are there?* (seven) *How many oceans?* (four)

Then have the pairs locate the *equator* and *prime meridian* on the world map. Ask students to use the atlas and *Drawing Maps* to explain the equator and prime meridian. (Both are imaginary lines that divide a globe. The equator wraps around the globe from east to west and the prime meridian from north to south.)

Part II: Where is it?

Give each pair one copy of the *Where in the World?* reproducible and some crayons or colored pencils. Have them use their lists, atlases, and *Drawing Maps* books to complete the reproducible.

Accommodations and Extensions

Divide students into groups of three. Assign each group member two tasks from the *Where in the World?* reproducible.

As an extension, have students add elements to their world maps to make them complex. Students might label the International Date Line, the Tropics of Cancer and Capricorn, bodies of water such as the Caribbean and Mediterranean Seas, or selected countries.

Closure

Have students review their completed reproducibles. Ask: *Is your map simple or complex?* (simple) *Why?* (It does not have a lot of details.) *Is your map physical or political?* (political) *How can you tell?* (It shows the divisions of continents, and it does not show any physical land features.) *Which ocean is farthest north?* (Arctic Ocean) *Which ocean separates North America and Asia?* (Pacific Ocean) *Which continent is east of Europe?* (Asia) *Which continents does the equator pass through?* (South America, Africa) *Which continents does the prime meridian pass through?* (Europe, Africa, Antarctica) Ask volunteers to present their maps.

Assessment

Evaluate student reproducibles for completion and accuracy.

Follow the Directions!

A Lesson on Identifying and Using Directions

Content

Students will review the directions on a compass rose and practice using the directions to identify locations on a map. They will then write directions from their school to another location in their city or town.

National Standards

The following standards will be addressed in the lesson:

Language Arts

Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.

Social Studies

The learner can create, interpret, use, and distinguish various representations of the earth, such as maps, globes, and photographs.

The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information.

Multiple Intelligences

The following intelligences will be activated throughout the lesson:

 Interpersonal

 Linguistic

 Visual-Spatial

Prerequisites

Have students read the books *Map Parts* and *Drawing Maps* before starting the lesson. Students should pay close attention to the sections on the compass rose and on using the compass rose to identify locations and follow a set of directions.

Materials

- *Map Parts* and *Drawing Maps* books
- chalkboard and chalk or whiteboard and markers
- political map of your state (1 per student)
- road map of your city or town (1 per student)
- student copies of the *Follow the Directions!* reproducible
- pens or pencils (1 per student)

Instructional Procedure

Anticipatory Set

On the board, draw a compass rose, but leave out the direction labels. Make sure your compass rose has eight points: four for the cardinal directions, and four for the intermediate directions. For an example, see page 7 of *Map Parts*. Explain to students that the *cardinal directions* are on the top, bottom, left, and right of the compass rose, and ask a student to come to the board and label them. (Labels are *N*, *E*, *S*, *W*.) Then challenge students to explain what the *intermediate directions* might be (the points between the cardinal directions). Have a volunteer come to the board and label them. (Labels are *NE*, *SE*, *SW*, *NW*.)

Class Discussion

Give each student a copy of a political map of your state, and help them identify your city or town on the map. Have students practice using the directions by asking them to name a city *north* of yours. Then have them name cities *south*, *east*, and *west* of yours—and move on to the intermediate directions, as well. Next, call out a city on the map. Have students find the city and then use the directions to tell where that city is located in relation to yours. (For example: Madison is *southwest* of Jamesville, or Lincoln is *east* of Jamesville.) Allow students to name cities and/or directions for their classmates to locate, as well.

Objectives

The student will be able to…

- name the *cardinal directions* and *intermediate directions* on a *compass rose*
- use the directions to identify locations on a map
- write a set of directions from one location on a map to another, and include *landmarks*

Activity

Give each student a copy of the *Follow the Directions!* reproducible and a road map of your city or town. (Consider using an online map program to obtain the map.) Help students identify where your school is located, and ask them to draw it in the appropriate location on their map. Then choose a different location in your city or town, such as a library, a park, or a train station. Help students draw it on their map.

Then, have students use the reproducible to write directions from the school to the other location. Before students begin, have them review page 11 of *Drawing Maps* for a model of how to write a set of directions. Point out that the directions state which road to travel on, and in which direction (example: "Turn west on Park Ave"). They also mention *landmarks*—places or objects that stand out and serve as a guide—to help convey how far to travel (example: "Go past the deli") in any given direction. Students should make sure that any landmarks they include in their directions also appear on their maps (example: they may have to draw the deli on the map).

When students finish writing their directions, have them exchange with a partner and check each other's work. They should then discuss any problems in terms of the accuracy or clarity of the directions, and work together to make improvements.

Accommodations and Extensions

Divide students into pairs and have them work together to write out their directions. Help students trace a clear path from the school to the other location before they begin writing.

As an extension, ask students to identify another location in their city or town and write directions to that location.

Closure

As a class, discuss the experience of writing and reading a set of directions. Ask: *What did you find difficult?* (Students may have found it challenging to keep track of the directions if they were working with winding or curving roads.) *What differences did you see in your maps and your partners'?* (Students might have chosen different routes or referred to different landmarks.) *What role did the compass rose play in writing your set of directions?* (Students may have referred to the compass rose frequently to make sure they were describing the route accurately.)

Assessment

Evaluate students' written directions for accuracy and clarity.

Going the Distance

A Lesson on Map Scale

Content

Students will learn how to identify the scale of a map. They will learn how to use scale to determine distance on a map and to convert map measurements to real-life measurements. They will practice using scale by measuring their classroom to create a map.

National Standards

The following standards will be addressed in the lesson:

Mathematics

Students should understand such attributes as length, area, weight, volume, and size of angle and select the appropriate type of unit for measuring each attribute.

Students should recognize and apply mathematics in contexts outside of mathematics.

Social Studies

The learner can estimate distances and calculate scale.

Multiple Intelligences

The following intelligences will be activated throughout the lesson:


Bodily-Kinesthetic


Logical-Mathematical


Visual-Spatial

Prerequisites

Have students read the book *Map Parts* before starting the lesson. Students should review pages 10–11 of *Map Parts* to reinforce their understanding of map scale.

Materials

- *Map Parts* and *Drawing Maps* books
- model car or model plane (to show to the class)
- U.S. political maps with defined scale (1 per student)
- rulers (1 per student)
- chalkboard and chalk or whiteboard and markers
- student copies of the *Going the Distance* reproducible
- yardsticks and/or tape measures (1 for every two students)
- calculators (1 for every two students)
- pencils (1 per student)

Instructional Procedure

Anticipatory Set

Show students a model car or plane. Ask them to compare the size of the model with the real thing. (The model is much smaller.) Point out that the proportions of the model are the same as the proportions in the real thing, which means the model was made to *scale*. Tell students that maps also use scale. Have them define the word *scale*, referring to pages 10–13 and page 32 of their *Map Parts* books for help.

Class Discussion

Ask: *How does scale help you read a map?* (It helps you figure out how far apart things are.) *Does every map use the same scale?* (No) *What would happen if maps didn't use scale?* (They would be too big. Distances would be inconsistent.) *Where do you find the scale of a map?* (usually in one of the corners of the map) *What units of measurement does a map scale use?* (inches or centimeters to represent miles or kilometers) *What tools would you use to figure out the distance between places on a map?* (ruler, calculator)

Objectives

The student will be able to…

- understand the *scale* of a map
- use a map's scale to calculate distance between locations
- convert map measurements in *inches* or *centimeters* to real-life measurements in *miles* or *kilometers*
- find classroom measurements using a yardstick or tape measure and use these measurements to create a scale map of the classroom

Activity

Part I: Using Scale

Tell students that distances on maps are usually drawn in *inches* or *centimeters* and that a map scale shows how many *miles* or *kilometers* are represented by one inch or one centimeter. Distribute one U.S. political map and one ruler to each student. Ask students to use a ruler to help them read the scale of the map. Students should give their answers in the format "one inch equals…" or "one centimeter equals..." Explain that to read a map accurately, they will need to convert the inch or centimeter measurements to real-life measurements, such as miles or kilometers. Walk students through this conversion process by asking them to find Chicago, IL and Nashville, TN on their maps. Then have students use their rulers to measure the distance, in inches or centimeters, between the two cities. Help them convert the inches (or centimeters) into miles (or kilometers) using the scale shown on the map to determine the real-life distance between the two cities. Show students that to make this conversion, they should multiply the number of inches they measured between Chicago and Nashville by the number shown on the scale (which they identified earlier), and this amount will be the distance in miles. Once students understand how to make these conversions, make a list on the board of other distances for students to determine independently.

Part II: Drawing to Scale

Tell students they are going to work in pairs and use scale to draw a simple map of the classroom. Their map should include the room's walls, the door(s), the location of the teacher's desk, and the location of their own desk. Help students determine an appropriate unit of measurement for their map scale. Ask: *Why would miles or kilometers not work very well for a classroom map?* (miles and kilometers are too big.) *What would be a better unit of measurement?* (feet or meters) Remind students that there are 12 inches in one foot and 100 centimeters in one meter.

To make sure students understand the process they will use to create scale, walk them through the first set of measurements. Using a yardstick or ruler, measure the distance between the teacher's desk and the classroom door. Record this distance, in feet, on the board. Then suggest a scale for the students to use for their such as 1 inch = 3 feet, depending on the size of the classroom. Show students that in order to convert the real-life distance to the distance to use on the map, they should divide the distance in feet by the number given by the scale (in this case, 3) to find the distance, in inches, to draw on the map.

Distribute student copies of the *Going the Distance* reproducible. Group students in pairs and give each pair a yardstick or tape measure. Tell students to use their yardstick or tape measure to find the remaining measurements for their map, including distances between items as well as lengths of walls, doors, etc. Remind them that they will need to use an appropriate scale, convert their measurements, and draw the scale on their map. Allow students to use calculators to help with their conversion calculations. Then have the pairs work to draw their maps on the *Going the Distance* reproducible.

Accommodations and Extensions

Work as a class to complete the classroom measurements and to calculate the scale conversions. Then help students as they work in pairs to draw their classroom maps using the scale conversions calculated by the whole class.

As an extension, ask students to create complex classroom maps that include all desks, tables, bulletin boards, and any other classroom items they may want to include. Remind students to create a legend for their maps.

Closure

Have each pair switch maps with another pair and use a ruler to check the distances between items on the other pair's map. Have students compare the other pair's measurements with the measurements on their own maps to make sure they are similar. If the measurements are not exactly the same, have students discuss why they might be a little different.

Assessment

Evaluate student reproducibles for completion and understanding of using a scale.

Road Trip

A Lesson on Using Maps

Content

Students will work in small groups and use political and visitor maps to plan a road trip, including choosing a destination and determining travel times and distances.

National Standards

The following standards will be addressed in the lesson:

Language Arts

Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.

Mathematics

Students should select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and the size of angles.

Students should recognize and apply mathematics in contexts outside of mathematics.

Social Studies

The learner can interpret, use, and distinguish various representations of the earth, such as maps, globes, and photographs.

The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information.

The learner can estimate distances and calculate scale.

Multiple Intelligences

The following intelligences will be activated throughout the lesson:

- Interpersonal
- Linguistic
- Logical-Mathematical
- Visual-Spatial

Prerequisites

Students should read the books *Map Types*, *Reading Maps*, and *Map Parts* before starting the lesson to familiarize themselves with the appearance and purposes of different map types. They should be able to identify and use the parts of a map.

Materials

- *Map Types*, *Reading Maps*, and *Map Parts* books
- visitor maps from a variety of cities and states (at least 1 per every 4 students)
- chalkboard and chalk or whiteboard and markers
- calculators (1 per every 2 students)
- pens or pencils (1 per student)
- student copies of the *Road Trip* reproducible
- rulers (1 per student)
- U.S. political maps (1 per every 4 students)

Instructional Procedure

Anticipatory Set

Write the word *destination* on the board. Explain that any place you travel to is called a *destination*. Use the word *destination* in a sentence, such as "If I could go on vacation, I would choose a destination that has a beach." Have students share the locations of places they'd like to visit using the word *destination* in their answer, as in "If I could choose any destination for a vacation, I'd go to Orlando."

Class Discussion

Explain that there are many ways to plan a trip to a destination. Ask: *If you were to plan a trip, what information would you need?* (destination name, distance to destination, cost, time, available means of travel) *Where can you find this information?* (on the internet, in travel books, in maps) *How can maps help you plan a trip?* (Maps show you the location of a destination, how to get there, and what landforms or waterways are near the destination.)

Then divide the class into groups of four students and give a *visitor map* to each group. Explain that this is a special type of map called a visitor map. Ask: *What is the purpose of a visitor map?* (to show places that visitors might want to see in an area) Ask them to identify the title of the map and some symbols on the map. Ask: *What are some special features of these visitor maps?* (Student responses will vary but may include the maps' use of color or symbols.) *How can these maps help you plan a trip?* (They can help you choose destinations.)

Objectives

The student will be able to…

- identify elements and purposes of political and *visitor maps*
- use a variety of types of maps to select *destinations* for a road trip and to calculate *distance* and travel times between locations

Activity

Part I: Getting Ready

Explain that students will use their maps to plan a road trip, or a long trip by car. Ask: *How can maps help you on a road trip?* (Maps tell you how to get to your destination.) Explain that maps can also help you figure out how long it takes to travel to a destination. Write the equation "Time = Distance ÷ Rate" on the board. Ask: *Which of these three items does a map provide?* (distance) Give each group two calculators. Explain that they need to find how many hours it will take to get to a destination if they are traveling 550 miles (885 kilometers) at 55 mph 88.5 kph). Help students identify and fill in each variable. Ask what they are solving for (time), what 550 miles (885 km) represents (distance), and what 55 mph (88.5 kph) represents (rate). Then help them see that they must divide 550 by 55 (or 885 by 88.5) in order to find the time (10 hours). Go through a few more guided examples to help students understand the steps of the calculation.

Part II: Planning a Trip

Distribute the *Road Trip* reproducibles. Make sure every student has a ruler and pencil. Give each group one U.S. political map and tell students that they will use this map, and their visitor maps, to plan a road trip. Explain that the first step in planning a road trip is choosing a destination. Explain that on this trip, students will choose two destinations: They will start at their hometown, travel to their first destination, then travel to a second destination, and finally travel back home. Help each group choose two destinations from their maps; the destinations should be in two different cities. Students should use the maps to determine the distances they need to travel. Using their rulers, they should first find the distance between their hometown and their first destination, then the distance between their first destination and their second destination, and finally the distance between their second destination and their hometown. Remind students that they will need to use the map's scale to convert their measurements from inches to miles. Once they find each distance, help students find the total number of miles travelled over the course of the road trip.

Students should then use their calculators to figure out how long it will take to travel to and from their destinations at a rate of 55 mph (88.5 kph). Help students input each distance measured into the formula Time = Distance ÷ Rate. Once they find the time it takes to travel each distance, help students find the total number of hours travelled by adding the time from each step. Students will record their findings in the *Road Trip* reproducibles.

Accommodations and Extensions

Ask each group to choose only one destination for their road trip and to calculate distances and travel times for only that one destination.

As an extension, ask students to create a map that shows the paths and distances of their road trips.

Closure

Have students share their road trip plans. Ask them why they chose each of their destinations. If destination distances and times seem wrong, ask students to explain their calculations and help them re-calculate.

Assessment

Evaluate student reproducibles for completion and accuracy.

The Evening News

A Lesson on Using Maps for Everyday Purposes

Content

Students will learn about how maps are used to provide everyday information. They will demonstrate using maps for everyday purposes by creating a newscast that relies on maps as visual aids.

National Standards

The following standards will be addressed in the lesson:

Language Arts

Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.

Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

Social Studies

The learner can use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information.

The learner can work independently and cooperatively to accomplish goals.

Multiple Intelligences

The following intelligences will be activated throughout the lesson:

- Interpersonal
- Linguistic
- Visual-Spatial

Prerequisites

Have students read the books *Reading Maps*, *Map Types*, and *Drawing Maps* before starting the lesson. Students should be familiar with choosing an appropriate map type based on information needed and presenting information in map format.

Materials

- *Reading Maps*, *Map Types*, and *Drawing Maps* books
- 6 or more copies of a local newspapers (at least 1 per group)
- chalkboard and chalk or whiteboard and markers
- 6 or more atlases (at least 1 per group)
- 6 or more pieces of poster board (at least 1 per group)
- markers or pencil crayons
- student copies of the *Evening News* reproducible
- video recording equipment (optional, if available)
- television with VCR (optional, if available)

Instructional Procedure

Anticipatory Set

Have students work in pairs to make a list of map types, using the *Maps Types* book for reference. Ask pairs to share their lists with the class. Create a class list of map types on the board. Have the student pairs rank the map types on the class list from "most likely to use every day" to "least likely to use every day." Ask volunteers to share and explain their rankings.

Classroom Discussion

Ask students if they have ever read a newspaper, listened to a news broadcast on the radio, or watched a television news broadcast. Ask: *What kind of information do newspapers and news broadcasts present?* (possible answers: recent events, weather, sports, traffic) Ask: *What are the characteristics of a good news story?* (possible answers: It is short. It gives essential information. It tells who, what, when, where, why, how.) Explain that news broadcasts are one example of how maps are used every day. Maps can be used as *visual aids* that help people understand the information in the story. The maps *illustrate* the information in the story. Have students share examples of recent news stories that used maps. (If students are not familiar with the news, describe a few current news stories and have students explain what types of maps would best illustrate the information from those stories.) Lead students in a discussion of how different types of maps can help people understand each of

Objectives

The student will be able to…

- explain how different types of maps are used for everyday situations
- explain how maps can be used as *visual aids* to *illustrate* a story
- create a map to illustrate a news story
- work in small groups to write and perform a news broadcast

the following types of news stories: international, national, local, weather, sports, traffic. For example, an international news story might use a world political map to show the location of the country where the story occurred, and a weather report might use a local weather map to show the path of a rainstorm.

Activity

Part I: Writing the News

Divide students into six groups. Explain that each group is going to create a story for a news broadcast. Each group will do one type of story, so the class's news broadcast will have six stories: international, national, local, weather, sports, and traffic. Assign each group one category of news. Give each group at least one atlas and one newspaper to use as references for their stories. Each group should look through the newspaper to find a story in their category that has information that can be illustrated in a map. Using the basic information from the story in the paper, students should create a short presentation (5 minutes maximum) that features each of their group members. Guide students as they write scripts that include the necessary background information and details for their stories. If necessary, students can research or make up more details than were provided in the original news story.

Each group should use at least one map as a visual aid in their presentation. Tell students that their presentation should rely on the map—the presentations need to actually use and address the map instead of just displaying it. Students should use their *Map Types* books to help them decide which type of map is best suited to their stories. Distribute the poster board and markers or pencil crayons. Students should use these materials to create their maps, and they should refer to their *Drawing Maps* books for assistance. Remind students that their maps should be large and bright enough for the entire class to see and that every group member should participate in the creation and presentation of the news story. Tell students to plan to dress appropriately the next day for their news presentation.

Part II: Presenting the News

Review with the class the qualities of a good speaker, such as speaking clearly and making eye contact with the audience, and the qualities of a good audience, such as listening respectfully and paying attention. Distribute the *Evening News* reproducible. Tell students that they will be evaluating each group's news story presentation. Review the evaluation criteria on the reproducible. Point out that a zero should be given only if the element was not present in the group's broadcast. For example, if a group does not use any maps at all, they should get a zero in the column "Use of Maps."

Ask each group to present their news story to the class. If video equipment is available, you may want to record the presentations and replay them for the class so students can see their news broadcast on television. Immediately after each presentation, have students evaluate the group's presentation using the *Evening News* reproducible.

Accommodations and Extensions

Divide the class into six groups. Choose a news story from the local newspaper for each group. Have each group draw a map to accompany their assigned story.

As an extension, have students use their newspapers to find another story from their category (international, national, local, etc.). Have students write a paragraph describing what type of map they would use for that story and their reasoning for their choice of map type. In their paragraph, students should point out the similarities and differences between this new story and map choice and the story and map they used in their presentation.

Closure

Ask each group to explain what type of map they chose for their news story and why they chose that type of map.

Assessment

Collect and review student reproducibles. Evaluate student performances for participation and understanding of major concepts.

Name _____ **Date** _____

Symbol Sense

Part 1: Create Symbols

Directions: Draw a symbol to represent each place you choose. Then write the name of the place next to its symbol.

Example:  **= school**

Part 2: Search for Symbols

Directions: After you circle 2 examples of each symbol on your map, answer the questions below.

1. Which were the easiest symbols to find on the map, and why?

_____

2. Which were the most difficult to find, and why?

_____

3. If you were the cartographer, would you change any of the symbols? Why or why not?

_____

_____

_____

Name _____ **Date** _____

Read Between the Lines

Directions: Work with your group to write 5 questions about latitude and longitude. Write your answers in the Answer Key at the bottom. Then exchange papers with another group and answer their questions in the Answer spaces under each question.

Sample Question: What city is located at 39°N 77°W? **Sample Answer:** Washington, D.C.

Question #1: _____

_____

Answer: _____

_____

Question #2: _____

_____

Answer: _____

_____

Question #3: _____

_____

Answer: _____

_____

Question #4: _____

_____

Answer: _____

_____

Question #5: _____

_____

Answer: _____

_____

Answer Key:

Answer #1: _____

Answer #2: _____

Answer #3: _____

Answer #4: _____

Answer #5: _____

Name _____ Date _____

Which Map Do I Use?

Directions: Cut out the cards on this page to use in the activity.

Map Type Cards

Physical Map	**Physical Map**
Political Map	**Political Map**
Road or Street Map	**Road or Street Map**
Topographic Map	**Topographic Map**
Weather Map	**Weather Map**

Situation Cards

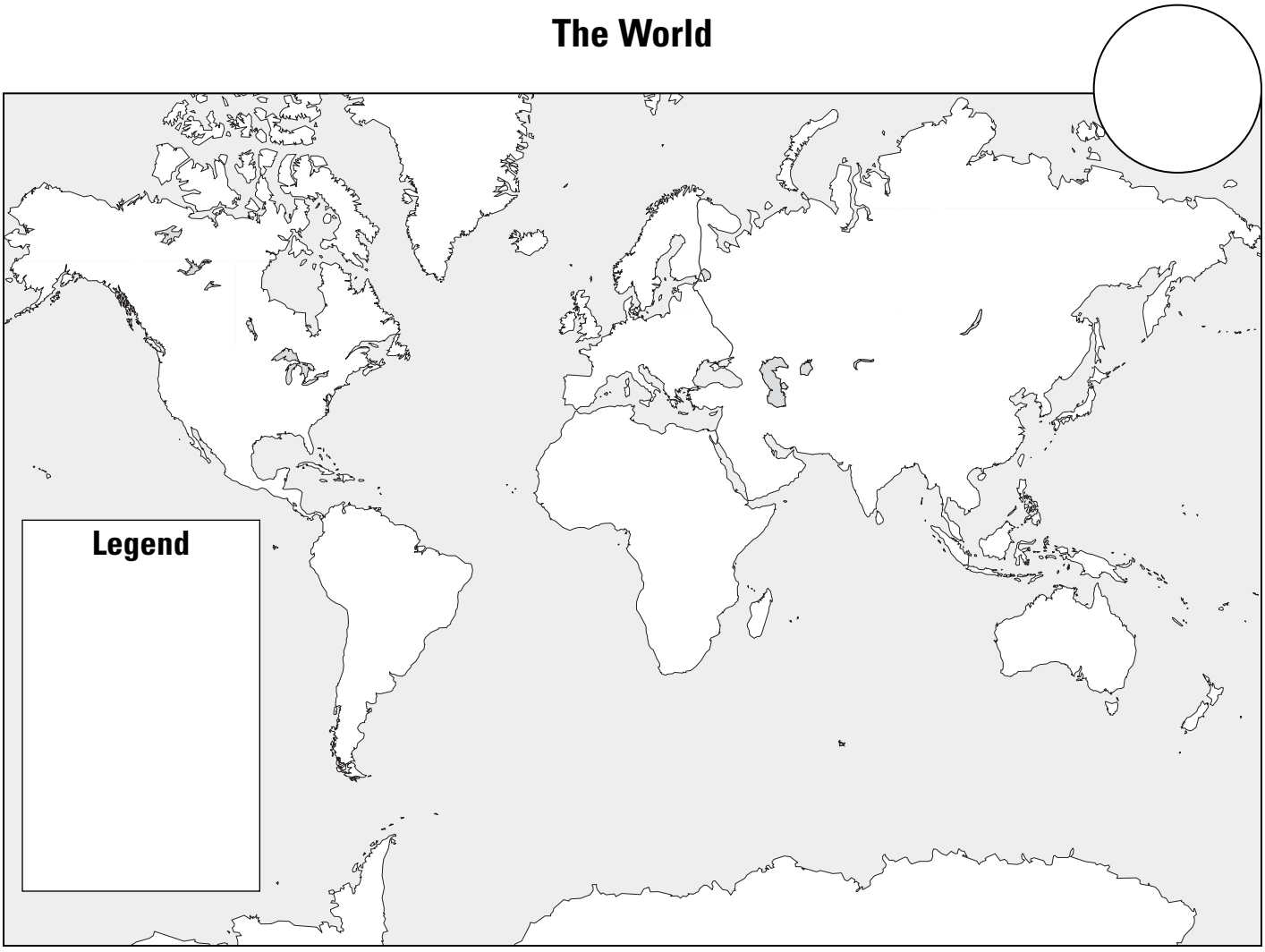
the height of the Rocky Mountains	the path of a hurricane
the distance between Chicago and Detroit	the location of the local dog park
how to drive to the White House	the temperature in New York City
the path of the Mississippi River	the steepest hiking trail in the park
the number of counties in your state	the width of a desert in Nevada

Name _____ Date _____

Where in the World?

Directions: Use an atlas to help you complete the numbered items below to create a map of the world.

The World



1. Find the circle in the top right corner of the map. Use it to draw a compass rose.

2. Find the four oceans on the map. Label them.

3. Identify and label the continents shown on the map.

4. Use a purple pencil or marker to draw the equator on the map.

5. Use an orange pencil or marker to draw the prime meridian on the map.

6. Color the water blue. Then color the continents any way you want. Use the legend to show how the equator, the prime meridian, and the oceans are represented on your map.

Name _____ **Date** _____

Follow the Directions!

Directions: Use your map to write directions from your school to a location in your town. Make sure each step includes street names and the direction you should travel on each street.

Directions from _____
(school name)

to _____
(other location)

1. Start at _____ (school name) on _____ (street).

2.

Name _____ Date _____

Going the Distance

Directions: Convert your classroom measurements to scaled measurements. Use the scaled measurements to draw a map of your classroom in the box below. Be sure to specify the scale of your map.

Title: _____

_____ **ft**

_____ **m**

Name _____ **Date** _____

Road Trip

Directions: Use your maps to find the distances between each of your destinations, and fill in the blanks in your chart for distances and travel times. Then find the total number of miles and hours traveled.

Helpful Hints:

- First find the distance between places in inches (centimeters), and then convert the distance to miles (kilometers) using the map's scale.
- Use the formula Time = Distance ÷ Rate to calculate the number of hours it will take to travel each distance. Use a rate of 55 mph (88.5 kph)
- To calculate totals, add all three numbers in each column.

	Travel Distance	**Travel Time**
Destination #1:	_____ miles (km) from home to destination #1	_____ hours from home to destination #1
Destination #2:	_____ miles (km) from destination #1 to destination #2	_____ hours from destination #1 to destination #2
	_____ miles (km) from destination #2 to home	_____ hours from destination #2 to home
	Total miles (kilometers) traveled:	**Total hours traveled:**

Name _____ **Date** _____

The Evening News

Directions: Evaluate each group's news broadcast. Score each category on a scale of 0 to 5, with 5 being the best score. Remember to score your own group's broadcast.

Group	**News Story** (Was the story complete? Did it give enough information? Was it easy to understand?)	**Use of Maps** (Did the story use a map? Could you understand the map? Was it a good map type for that story?)	**Participation** (Did all group members participate?)	**Presentation** (Did group members speak clearly? Did they make eye contact?)
Group #1:				
Group #2:				
Group #3:				
Group #4:				
Group #5:				
Group #6:				