March 12-14, 1998

Where Am I?
Navigating Around the Globe

Grade Level: Third
Presented by: Jan Read and Kimberly Lullie, Joella C. Good Elementary School Miami, FL
Length of Unit: Eight Lessons

I. ABSTRACT

The focus of this unit is on understanding how to read and use maps. Students will review spatial sense learned in grades one and two. They will measure distances using map scales. The students will use atlases, and on-line sources to find geographical information. They will also review geographical features and terms from grades one and two, and add the grade three terms. The skills will be taught within the context of ancient Roman and early American history units.

II. OVERVIEW

A. The objectives of this unit are to familiarize students with basic map skills, and terminology, and to enable them to use these skills to obtain information about their world.

B. The specific content from the Core Knowledge Sequence, Geography Topics for Grade Three, covers spatial sense, including working with maps, globes and other geographic tools.

1. Review and reinforce topics from grades one and two.

2. Measure straight-line distances using a bar scale.

3. Use an atlas, and, if applicable, on-line sources to find geographic information.

C. Skills to be taught:

1. Locating oneself on maps and globes

2. Knowing one's continent, country, state, and community

3. Using map legends, and indexes

4. Finding directions: east, west, north, south

5. Locating the seven continents, Canada, the United States, Mexico, and Central America

6. Locating the equator; northern hemisphere; southern hemisphere; north and south poles

7. Measuring straight-line distances using a bar scale

8. Using an atlas, and, if available, on-line sources to find geographic information

9. Using geographical terms for land and water forms

III. BACKGROUND KNOWLEDGE

A. For Teachers:

The World Book Encyclopedia, World Book, Inc., Chicago, 1997, M vol. 13, 1997, pages 176-185

Haslam, Andrew, Make It Work! Maps, Two-Can Publishing Ltd., Chicago, 1996

Lye, Keith, Measuring and Maps, Cloucester Press, New York, NY 1991

B. For Students:

Spatial sense: working with maps, globes and other geographic tools

Ancient Rome

Geography of the Mediterranean region

Early exploration and settlement of North America

IV. RESOURCES

A. Atlases:

Lees, Charles W., Jr., The New Comparative World Atlas, Hammond Inc., Maplewood, NJ, 1998

Dempsey, Michael, Student Atlas, Troll Associates, Inc., Mahwah, NJ, 1991

Wright, David and Jill, The Facts on File Children's Atlas, Facts on File, Inc., New York, NY, 1993

Williams, Brian, The Kingfisher Reference Atlas, An A-Z Guide to Countries of the World, Kingfisher Books, NY, 1993

Fagan, Elizabeth C.Ed., Rand McNally Children's World Atlas, Rand McNally, Chicago, 1991

B. Historical Atlases:

Ryan, Peter, Explorers and Mapmakers, Belitha Press, Ltd., London, 1989

Mason, Antony, The Children's Atlas of Exploration, The Millbrook Press, Brookfield, CT, 1993

Adams, Simon, et al, Illustrated Atlas of World History, Random House, NY, 1992

Fagan, Elizabeth C., Rand McNally Children's Atlas of World History, Rand McNally & Co., Chicago, 1991

Reid, Struan, The Silk and Spice Routes, Cultures and Civilizations, Belitha Press, Ltd./UNESCO, New York, NY, 1994

Martell, Mary H., The Age of Discovery, Facts on File, New York, NY, 1993

Corbishley, Mike, Cultural Atlas for Young People, Ancient Rome, Facts on File, Inc., NY, 1989

Lauber, Patricia, Who Discovered America? Random House, New York, NY 1970

C. Activity Books:

Cooper, Kay, Where in the World Are You?, Walker Publishing Co, Inc., New York, NY, 1990

Chapman, Gillian and Robson, Pam, Maps & Mazes, The Millbrook Press, Brookfield, CT, 1993

Haslam, Andrew, Make It Work! Maps, Two-Can Publishing Company Ltd., Chicago, 1996

Kenda, Margaret, and Williams, Phyllis S., Geography Wizardry for Kids, New York, NY, 1997

Leacroft, Helen and Richard, The Buildings of Ancient Rome, Addison-Wesley Publishing Co., Reading, MA, 1969

Unstead, R.J., Ed., See Inside a Roman Town, Warwick Press, New York, NY, 1977

D. Map Skills:

The World Book Encyclopedia, World Book, Inc., Chicago, 1997, M vol. 13, 1997, pages 176-185

Chapman, Gillian and Robson, Pam, Maps and Mazes, The Millbrook Press, Brookfield, CT 1993

Lye, Keith, Measuring and Maps, Cloucester Press, New York, NY 1991

Weiss, Harvey, Maps, Getting From Here to There, Houghton Mifflin Co., Boston, MA 1991

Cooper, Kay, Where in the World Are You?, Walker Publishing Co., New York, NY 1990

E. Computer Programs:

The 1996 Grolier Multimedia Encyclopedia, Grolier Inc., Version 8.0.3, MacIntosh CD Rom

3D Atlas, Version l.lb, Creative Wonders; Multimedia Corporation, MacIntosh CD Rom, 1995

Illustrated Talking Encyclopedia for Children, Softbit, Inc., CD Rom, 1995

Compton's Interactive Encyclopedia Softkey Multimedia, CD Rom, 1995

F. Internet: See Appendix I

G. Literature Selections:

Neuberger, Richard L. The Lewis & Clark Expedition, Random House, New York, NY, 1951

Las Casas, Bartholomeu, The Log of Christopher Columbus' First Voyage to America in the year 1492, Linnet Books, Hamden, CT, 1989

V. LESSONS

A. Lesson One: Reviewing Map Terms

1. **Objectives:** To review concepts of globe, map, our location on both, and terms connected with maps, such as the equator, north and south poles, northern hemisphere, southern hemisphere

2. **Materials:** A globe, a grapefruit, a small sharp knife, string, tape, a ballpoint pen (black), or a permanent black marker (small point), a Mercator projection map, key vocabulary words on index cards

3. **Prior Knowledge:** spatial sense from grades one and two; continents, oceans

4. **Key Vocabulary:** sphere, globe, hemisphere, equator, north pole, south pole, northern hemisphere, southern hemisphere, the seven continents: Europe, Asia, Africa, North America, South America, Australia, Antarctica; the major oceans: Pacific Ocean, Atlantic Ocean, Indian Ocean

*5. **Procedures/Activities:***

a. Show the globe. Discuss globe as a model of the planet earth. Have students match index cards to correct places on the globe: seven continents, three oceans. Teacher asks student to point to our continent, our state, our city.

b. Teacher presents a grapefruit, asks students to name its shape (sphere) and to imagine that it is the earth. Teacher marks grapefruit with the continents, and the oceans, then asks students to name them.

c. Teacher attaches string to grapefruit around the middle, dividing it in half; asks for vocabulary word for half of a sphere (hemisphere) asks students to name the equator, the northern hemisphere, the southern hemisphere, the north pole and the south pole on the grapefruit.

d. The teacher makes a parallel line on top of the equator, calls it a parallel or a latitude. Teacher makes several more parallels; asks students what they are called. (See Appendix A)

e. Teacher makes meridians from North Pole to South Pole with string (taping the end of the string to the North Pole so that it doesn't slip). Teacher calls these meridians or lines of longitude.

f. Teacher draws lines along the meridians with pen or permanent marker, then removes the string lines. Teacher then cuts the meridian lines on the grapefruit with a sharp knife down to the parallel lines directly above and below the equator. Then teacher carefully removes the skin, showing the flattened shape of the sphere. Teacher discusses the Mercator projection method of making maps, and produces a flat map of the world with a Mercator projection. The teacher discusses the distortion at the top and at the bottom of the map (see Appendix A).

*6. **Evaluation/Assessment:** Students receive a Mercator projection map and label the map with correct continents, oceans, the equator, the northern hemisphere, the southern hemisphere, latitude lines and longitude lines.*

*7. **Standardized Test/State Test Connections:** Teaching Ideas and Performance Strategies (TIPS) Social Studies K-6, (Dade County Public Schools) p.3 Geographic Understanding, Grade 3, I.D.; Strategies to Enhance Social Studies Skills in Grades 3 and 5, Office of Instructional Leadership, Dept. of Social Science Skills, Dade Co. Public Schools, Stanford Social Studies Subtest, Grade 3, Suggested Geography Activities #1, #4*

B. Lesson Two: Plotting Hurricanes

1. Objectives: To understand the use of latitude and longitude lines for locating oneself, and other objects of interest on a map.

2. Materials: Hurricane plotting chart, a real hurricane, if possible, a weather radio, or the plotted track of a past hurricane, as may be taken from the Computer Program called "McHurricane"

3. Prior Knowledge: Spatial Sense grades 1 and 2, hurricanes

4. Key Vocabulary: latitude, longitude, north , south, east, west, degrees, minutes, hurricane

5. Procedures/ Activities:

a. Present the hurricane tracking chart, discuss the latitude and longitude lines, degrees and minutes of latitude and longitude, hurricanes, and how to plot a hurricane's course.

b. Every day, have a different student plot the course of the hurricane until it dissipates.

6. Evaluation/Assessment: Watch as students plot the position of the storm and correct any errors. Ask students to state the coordinates of the hurricane, and state which direction it is currently moving in (north, south, east, west, northwest, southwest, etc.).

7. Standardized Test/State Test Connections: Strategies to Enhance Social Studies Skills: Stanford Social Studies Subtest, Grade 3, Suggested Geography Activities, #1 (cardinal and intermediate directions).

C: Lesson Three: Making a Bearing Board

1. Objectives: After reviewing the terms north, south, east, and west, and discussing and demonstrating that a circle has 360 degrees, the students will create a bearing board. They will label the 360 degrees of a circle in 10-degree incremented lines using a drawing compass, and label correctly 0 degrees as north, 90 degrees as east, 180 degrees as south, and 270 degrees as west. The students will also turn in the correct direction, using their bearing boards, when given a verbal direction.

2. Materials: a ruler, foam board, pencil, craft knife, drawing compass, a protractor, black marker, directional compass

3. Prior Knowledge: spatial sense, grades one and two; cardinal and intermediate directions

4. Key Vocabulary: directional compass, drawing compass, bearing board, protractor, circle, directions: north, south, east, west

5. Procedures/Activities:

a. Measure a square on the foam board 15 x 15 inches.

b. Cut the square out.

c. Put the ruler across the square from corner to corner and mark the center point. Do the same across the opposite corners.

d. Using a drawing compass, place the pointed edge on the center that was marked on the square. Open the compass to six inches. Draw the circle.

e. Place the protractor so that its center mark is at the center of the circle. Use a pencil to make a tick mark at each 10 degrees all around the outside of the protractor. When you are finished you should have 36 marks around the circle.

f. With a ruler, draw lines from each 10 degree mark through the center of the circle to the opposite marking. Continue around the circle until you have drawn 18 lines connecting the 36 points (see Appendix C).

g. Starting at the top, label each point on the rim of the circle from 0 degrees to 350 degrees. (Teachers, explain that the circle is 360 degrees around and that the 360 degree mark is the same as the 0 degree mark.)

h. Trace the markings with a black marker.

i. Go outside and use a compass to find north. Then point the bearing board toward north. You may label the 0 degree mark "north." Then turn 90 degrees and label it "east"; turn 180 degrees and label it "south"; finally, turn 270 degrees and label it "west." Give students different verbal degree numbers and have them turn in the correct direction.

6. Evaluation/Assessment: The students will create a bearing board labeling the 360 degrees in 10 degree increments with 100 percent accuracy and the directions north, south, east, west. They will also turn in the correct directions when a verbal degree is called out to them.

7. Standardized Test Connection: Strategies to Enhance Social Studies Skills in Grades Three and Five, Office of Instructional Leadership, Bureau of Instructional Support, Dept. of Social Science Skills, Dade County Public Schools, p. 2, Activity #1.

D. Lesson Four: Creating an Antique Treasure Map

1. Objectives: After reading and discussing Spanish exploration in North America, including Hernando Cortez's conquering of the Aztecs in Mexico and finding riches, the students will use their bearing boards and create an antique treasure map, including their own legend with a scale showing the length of one pace. They will create a compass rose, listing the cardinal and intermediate directions correctly. They will give directions with correct degree markings, show at least five landmarks, and mark off off paces on the map with 100 percent accuracy.

2. Materials: scratch paper and pencil; gray, tan, or cream colored paper; ruler; pens or colored markers; yardstick; directional compass; bearing board; protractor; book or information about Hernando Cortez's exploration and conquest; pictures of scenery in Mexico; example treasure map (see Appendix D); cones or other free-standing objects to position as landmarks

3. Prior Knowledge: spatial sense, grades one, two and three; cardinal and intermediate directions; following directions with a bearing board; Spanish exploration of the New World

4. Key Vocabulary: directional compass, treasure, conquer, landmark, exploration, compass rose, antique, bar scale, pace

5. Procedures/ Activities:

a. Read to students about Cortez's exploration in North America; how he conquered the Aztecs in Mexico; how he found riches there. Be sure to discuss and explain the key vocabulary to students.

b. Tell students they are going to pretend to be Cortez, and that they are going to create an antique map showing where the treasure that he found is hidden. Show the students an example of a treasure map.

c. Explain what landmarks are on a map. Show pictures of scenery in Mexico so students can decide what they want to use as landmarks, making sure they use landmarks that are relevant to the 1500s in Mexico. Have the students choose at least five landmarks and write down what they will be on their scratch paper.

d. Have the students go outside with paper, pencil, and cones (to be used as imaginary landmarks), and role-play. First, they must determine the average length of their pace. (A pace is the normal length of your step or stride as you walk.) Have the students take three paces and measure the total distance, then divide by three for the average.

e. Students need to decide on a scale for their maps. (One pace may represent 1/2 to

to one inch.) Have them write down the scale and average pace on their scratch paper where they noted what their landmarks will be.

f. Decide where north should be on the map. Students draw a compass rose identifying north, south, east, west, and intermediate directions.

g. Students choose a starting point for hunt. At the bottom of the paper, make a pencil mark to show where the hunt begins. Draw first landmark.

h. Position your compass so that its arrow lines up with north. Stand at first landmark (a cone represents it) facing north. Determine where second landmark will be and position a cone. Go back to the first landmark and using bearing board, determine how many

degrees from north first landmark is. On your paper, mark where second landmark is and note the degrees.

i. Pace the distance off from the first to second landmark. Note the number of paces on map.

j. Stand at the second landmark and select a third landmark; position a cone. Mark it on map. Go back to the second landmark; find north again. Note the angle and paces, and mark it on map. Then go to landmarks four, five, and so on, until you get to the treasure.

k. When you finish marking the map with landmarks, degrees, and paces, connect the lines starting with the first landmark to the second, third, and so on, until you get to the treasure. Then you may put an "X" showing where the treasure is hidden.

l. Once the map on plain paper is finished, transfer it to colored paper, and sketch in the landmarks, labels, names, and scale with colored markers.

m. You may want to tear the edges or crinkle the paper to make it look old. You may also mount it on poster board.

6. Evaluation/Assessment: The students will create an antique treasure map, including their own scale, showing the number of paces with 100 percent accurate measurements of pace markings, a compass rose listing the cardinal and intermediate directions correctly, accurate degree markings showing directions on the map, and at least five landmarks.

7. Standardized Test Connection: Strategies to Enhance Social Studies Skills in Grades Three and Five, p. 2, Activities #1 and #3.

E. Lesson Five: Map Legends

1. Objectives: To have children become more familiar with map legends or keys

2. Materials: Mercator projection map, with latitude and longitude grid and topographical features; white construction paper, cut to expand the scale of the map grid; lead pencils, tempra paint or colored pencils in colors: white, light green, dark green, yellow, brown, blue; brushes for painting if desired.

3. Prior Knowledge: spatial sense, grades one, two; geographical terms for land and water forms, grades one and two; continents, oceans

4. Key Vocabulary: north, south, east, west, continent, latitude, longitude, deserts, mountains, grasslands (prairies), forests, ice, rivers, map legend, map key

5. Procedures/Activities:

a. Teacher asks children to transfer the Mercator projection map to a bulletin board, by copying each grid individually, then putting all the squares together.

b. Teacher will discuss the topographical features of the Mercator map with the students, reviewing the landform vocabulary. The map key will be analyzed.

c. Students work together to make large map with legend. They will label the continents, oceans, major seas, rivers, and mountain ranges. They will draw the mountain ranges, and color the forests, grasslands, and deserts the colors shown on the map legend. They will label legend.

6. Evaluation/Assessment: Students complete the assignment, and verbally identify the major features and the legend.

7. Standardized Test Connection: Stanford Social Studies Subtest, Grade Three, Suggested Geography Activities, #5: TIPS, II.

F. Lesson Six: Columbus Finds a New World

1. Objectives: To measure straight line distances using a bar scale.

2. Materials: Map showing Europe and the New World, The Log of Columbus' First Voyage to America, by B. Las Casas; (This course could be plotted on a hurricane tracking map; (Appendix A); 360 degree protractor, compass rose (Appendix F); ruler, marker.

3. Prior Knowledge: spatial sense and geographical terms, grades one and two: background on Christopher Columbus

4. Key Vocabulary: cardinal and intermediate directions; leagues; Canary Islands: Gomera, Tenerife, Ferro

5. Procedures/Activities:

a. Read the journal a few days at a time. Ask students to locate Columbus' ships on the map according to the log entries.

b. Ask students to use the map scale to figure out how far Columbus had come each day

6. Evaluation/Assessment: Students are able to plot the course on the map, using the compass rose they have made and find out how far Columbus had gone using the bar scale.

7. Standardized Test Connection: Strategies to Enhance Social Studies Skills in Grades Three and Five; Stanford Social Studies Subtest, Grade Three, Suggested Geography Activities, p. 2, Activity #1

G. Lesson Seven: Plotting Trade Routes of Phoenicians in the Mediterranean Region

1. Objectives: To acquaint students with the term "region," to integrate the practice of map skills with third grade history objectives

2. Materials: Map of Mediterranean Region, with a bar scale (see Appendix G), or Illustrated Atlas of World History, p. 31, a piece of paper for measuring

3. Prior Knowledge: background knowledge of early civilizations in the Mediterranean region, especially Phoenician; spatial sense, grades one and two; map legends

4. Key Vocabulary: Phoenicia, Phoenicians, traders, bar scale, miles, kilometers

5. Procedures/ Activities

a. Teacher introduces topic of early traders in the Mediterranean Region, for example, the Phoenicians, presents the region map, and asks students to color code the map to show areas of Phoenician influence. Teacher then models the process of using a piece of paper

to measure the distance from Tyre to Carthage. Teacher and students record the answer to question #1.

b. Students proceed to answer the rest of the questions concerning the distances on the worksheet (see Appendix D).

5. Evaluation/Assessment: Students successfully complete the worksheet

6. Standardized Test Connections: Stanford Social Studies Subtest, Grade Three, Suggested Geography Activities, # 5 re. legends, also mathematics: measuring

VI. CULMINATING ACTIVITY:

A. Lesson Eight: Navigating the Streets of Ancient Rome

1 Objectives: To have students use all of the map skills previously learned, while integrating the skills with the study of Ancient Rome. This culminating activity could coincide with "Ancient Rome Day" in which students dress as Romans, and do Roman activities.

2. Materials: Map of the ancient city of Rome (See Appendix G); materials for making model buildings: cardboard, glue, rulers, pencils, markers or paint, pictures to go by: (See reference books: The Buildings of Ancient Rome, by Helen and Richard Leacroft; See Inside a Roman Town, by R.J. Unstead); a compass; a large piece of paper on which to draw streets.

3. Prior Knowledge: spatial sense, from grades one through three; geographical terms, from grades one through three; early Roman civilization including the city of Rome, the building types, construction techniques, landforms and water forms around the city

4. Key Vocabulary: colosseum, temple, baths, aqueduct, basilica, via, theatre, circus

5. Procedures/Activities:

a. Teacher presents students with handout of the city of Rome. Students review the vocabulary, label the parts with the teacher (it would be helpful to reproduce the map on a clear overhead projector sheet). Students also color the hills green.

b. Teacher shows illustrations of various buildings (see reference books), and invites volunteers to make models of the buildings. Models will not be to scale, as building dimensions are not given in the reference books. It would be a good idea to label each building.

c. Once all the models are complete, they will be laid out on a large floor map of Rome (some students could be selected to transfer the small map to the floor size using a grid pattern).

d. Teacher hides an "artifact" of Ancient Roman origin in one of the buildings. Then directions are given as to compass heading, and number of paces to be walked. (This should be done prior to the commencement of the activity.)

e. Students attempt to follow the directions and find the artifact. Several artifacts could be hidden to provide more turns.

6. Evaluation/Assessment: Students are able to successfully place the buildings on the floor map, and to follow the compass headings for the prescribed number of paces and find the treasure.

VII. HANDOUTS/WORKSHEETS

Appendix A: Pictures of Grapefruit (Lesson 1 - World Model)

Appendix B: Hurricane Plotting Chart (Lesson 2)

Appendix C: Bearing Board (Lesson 3)

Appendix D: Antique Treasure Map (Lesson 4)

Appendix E: Mercator Map Projection (Lesson 5)

Appendix F: Approximate Route of Columbus' First Voyage (Lesson 6)

Appendix G: Map of Phoenician Trade Routes (Lesson 7)

Appendix H: Map of Ancient Rome (Culminating Activity)

Appendix I: Internet Sites Relating to Geography for Children's Usage

VIII. BIBLIOGRAPHY (See IV. Resources)

