

WHERE AM I?

Master Teacher: Roni Wymore

Grade Level: 6 - 8

Time: Two 50 minute periods

Overview: Cartographers are mapmakers. Map making requires science, math and artistic ability. Reading maps is easy and much like plotting points on an X and Y-axis. Latitude and longitude are used by cartographers to plot points, thus creating maps.

The activities in this lesson are designed to introduce the students to several American scientists and inventors. Utilizing an Internet site, students will research the birthplaces and accomplishments of several important Americans. By reading maps, the students will be able to locate their birthplaces, identifying them by latitude and longitude.

Subject Matter: Science (Geography)

Learning Objectives: 7.3F History of science and contributions of scientists

Media Components: *Futures with Jaime Escalante*, Cartography #105

Materials:

Per student for Introductory Activity:

Copies of Activity Sheet #1: Introductory Activity

Pen/pencil

Per students: Culminating Activity

Copies of United States Map

Copies of Activity Sheet #2: Learning Activity

Access to Internet site: www.invent.org/book/index.html

Pen/pencil

Teacher:

Vis-à-vis washable pen

Prep for Teachers:

Obtain access to an Internet computer lab for *Culminating Activity*

Cue tape to beginning. Narrator is saying, "They believed the world was flat..." and on the screen is a picture of an old boat with big sails.

Introductory Activity:

The following activity will prepare the students to read maps. Explain to students that the segments of video they will be watching will prepare them to read maps. Following are a series of pauses to be inserted throughout the beginning of the video. Questions will be given to the students prior to the segments in order to check for understanding. The tape is cued to the beginning.

Step 1: Say, "In this small segment you will be viewing, I would like you to listen for at least two things early people believed of the Earth hundreds of years ago." (world was flat, fall off the edge, seas full of dragons and serpents) Start tape at beginning, narrator is saying, "They believed," and the visual on the screen is of a boat with huge sails. Pause after narrator says, "...and dragons." The visual is of a dragon in water. Ask for responses to the previous question.

Step 2: Say, "What guided these early people in their boats?" (sun, moon and stars) Resume tape. Pause after narrator says, "...their only guides." and visual is painting of a boat on stormy seas. Ask for responses to the previous question.

Step 3: Say, "What sort of places did these early people search for? (El Dorado, Fountain of Youth) Resume tape. Pause after narrator says, "...promise of eternal life." and visual is a picture of a fountain. Ask for responses to the previous question.

Step 4: Say, "What do we now call these papers they recorded their detailed observations on and what were these early people called?" (maps and explorers) Resume tape. Pause after narrator says, "...lives on today." and visual is an old world map. Ask for responses to the previous question.

Step 5: For a little humor, resume tape through introduction and include Daffy Duck cartoon. Pause after Porky Pig says, "Oh, sure." Say, "Jaime Escalante is going to tell you what you need to know in order to read maps, give instructions. When you hear this word (points), raise your hand. Pause when he says, "Let me check my instructions and he is switching his bandana for his black cap. Ask for responses.

Step 6: Hand out Activity Sheet #1 and instruct students to turn these sheets over so they may write a few things on the back. Say, "Mr. Escalante will be

drawing 2 lines on the board and he will label them. Follow him and do the same on the back of your Activity Sheet #1." Resume tape. Pause when the girl with long wavy blond hair is writing something with a blue pencil. Check students papers to make sure all have drawn two lines, one horizontal and one perpendicular, and have labeled them X and Y respectively. Rewind and show segment again if necessary.

Step 7: Say, "Now Mr. Escalante will be plotting two points. Listen to his explanation of how to plot them." Stop when Mr. Escalante says, "You got it?" and the visual is a boy with a blue shirt touching his chin. On the overhead projector, draw the X and Y axis and label them. Draw the number lines on both. Along with the students, plot the points (4, 3) together. You may do additional plotting as guided practice.

Step 8: For independent practice, instruct students to turn over their Activity Sheet #1 and plot those given points on the grid provided at the bottom. They must follow all instructions.

Learning Activities:

Step 1: Explain to students that cartographers are map makers and the segments of video that will be shown discuss this topic.

Step 2: **Provide students with a Focus for Media Interaction**, say "Listen for one application of plotting points mentioned by Jaime Escalante." Resume tape where it was stopped in the introductory activity, at a boy with blue shirt and Mr. Escalante is saying, "Do you know what...?" Stop when he says, "Got it?" and the screen displays a map showing White Plains.

Step 3: Fast forward to Carlos Haugen-Lautrup, identified onscreen by name, and pause. Instruct students to turn over Activity Sheet #1 once again. Say, "Mr. Haugen-Lautrup will tell you that in order to read maps you have to understand coordinates. In maps, they are not called X and Y. Label the two new terms he gives you correctly on your horizontal and vertical number lines." Pause after he says "latitude and longitude" and visual is map of United States. Rewind to visual of horizontal, X, and vertical, Y, lines. Ask, "Who can rename these two new lines?" Label on the TV screen, using a vis-à-vis washable pen, X as longitude and Y as latitude. Ask for student responses and check for all labels on their Activity Sheet #1. Stop tape.

Culminating Activity:

Step 1: Provide for each student

United States map with latitude and longitude markings teacher supplied list of American scientists or inventors

Internet web site: www.invent.org/book/index.html

Pencil/pen

Step 2: Students will be locating the birthplace of several American scientist/inventors from the Internet site.

Step 3: Students will be detailing their accomplishments.

Step 4: By using a United States map, students will provide latitudes and longitudes for each birthplace.

Cross Curricular Extensions:

History:

Compare old maps with new maps or even satellite images.

Math:

Have students calculate distances between 2 locations using a map and the legend printed on it.

Community Connections:

Contact your local Chamber of Commerce and ask them for copies of city maps.

Activity Sheet #1
Introductory Activity
Plotting Points

Label the X & Y axis and add number lines

Connect each pair to the pair that follows:

1,1 1,11 3,6 5,11 5,1

Connect each pair to the pair that follows:

6,1 6,6 7,11 9,11 10,6 10,1

(connect 6,6 to 10,6)

Connect each pair to the pair that follows:

11,1 11,6 11,11 14,11 15,10 15,7 14,6

(connect 14,6 to 11,6)

Connect each pair to the pair that follows:

20,10 19,11 17,11 16,10 16,7 17,6 19,6 20,5 20,2 19,1 17,1 16,2

American Scientists and Inventors

Activity Sheet #2

Culminating Activity

Write the following information for each American scientist or inventor listed below.

Use the following web site www.invent.org/book/index.html

Name	Date of Birth	Place of Birth	Latitude Longitude	Accomplishment
George Washington				
Carver				
Charles Goodyear				
Orville Wright				
Wilbur Wright				
Max Tischler				
Philo T. Farnsworth				
Douglas Engelbart				
Percy L. Spencer				
Chester F. Carlson				