BEYOND THE FIFTH CHAPTER:

MAKING WORLD GEOGRAPHY RELEVANT FOR SECONDARY STUDENTS

by

DEBBY SWOPE

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Advisors: Susan Hardwick and Lynn Songer
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Abstract

This project presents four key lessons for a middle school world geography class in which students are actively engaged in relevancy-based geography education. The project demonstrates how to use the textbook as an exploratory reference tool rather than a linear march through weekly chapter readings and activities.

Each lesson serves as a companion to the textbook; layering a geographic concept over the particular region of study, as a component of a year-long island project; which serves as a vehicle for on-going application of each geography concept learned over the course of the year (and can also be used for assessment), and as a catalyst for comparing and contrasting local regions with the world region being studied.

In order to provide a complete picture, I have inserted a brief “synopsis and island connection” for each of four additional lessons not included in the body of this document; the inclusion in the appendices of rubrics/instruction sheets for each of these lessons is indicated by an asterisk*. 
Acknowledgements

    I wish to express my gratitude first to God the Father, Almighty Creator of the majesties, intricacies and layers of geography (and Who helped me figure out where I saved my documents on a regular basis). Thank you, Susan Hardwick and Lynn Songer for your enthusiasm, acumen and empathy that makes the EDGE program one of practical rigor and excellence. I will continue to value the sharpening and camaraderie of my instructors and of my cohort; thank you Erick and Jane; a three-stranded cord is not easily broken.

    For my family in Southern Oregon, Washington, Iowa, Indiana and Oklahoma, I am deeply grateful; thank you for the care packages, letters, prayers, and for doing my chores, over the last two summers.
Context

I teach world geography to seventh graders at Grace Christian Schools in Medford, Oregon. While just north of California, Medford is very much south of everything else, yet it does entertain the freeway. As a result, the region experiences a convergence of cultures, and though both the logging and pear industries are dwindling, the Rogue Valley remains an agrarian society. Three of the high schools have equestrian teams; kids raise pigs, lambs and steer to sell at the spring fair, and large horsemanship belt buckles are worn with pride. Parallel to this runs a strong propensity for sports. It is not unusual for students to be playing on three teams concurrently. These micro-cultures are reflected somewhat in my classroom. I say somewhat, for it lacks representation of the valley’s migrant worker contingency.

Grace Christian Schools is a private school, yet it is not elite. We do have vibrant parent involvement, pre-k through the eighth grade meets on one campus, and our high school is five miles distant. The 6th-8th grade middle school consists of three home rooms per grade level, each with 23-27 students and forty-five minute class periods from bell to bell.

If averaged by straight arithmetic, the socioeconomic status of the families would be middle class; yet we experience a small exodus of families each year to the Hawaiian Islands, while others struggle to meet their financial obligations. Further, the increasing number of families asking for, and receiving, financial assistance, combined with declining enrolment, leaves the school with stretched resources – and somewhat dated textbooks – especially for geography. World geography is a required seventh-grade class at GCS, and I teach three of the four sections.

The geography curriculum is paired with a thirty-six week pacing guide designed to follow the text book which, in turn, approaches the subject systematically. This is done by front-loading the first five chapters with the basic themes and then using the thirty chapters that remain to cover world regions. Out of this disparity was born my project, Beyond the Fifth Chapter, which emphasizes the importance of relevancy by using active learning to layer themes over the study of regional world geography. In this approach, students use the textbook as a tool for
exploring each of the geographic themes (found in chapters one through five) and analyzing its manifestation in a world region. They then compare and contrast this with the United States, their local region, and finally apply the concept to an island they have created. This process is repeated for each of the five themes of geography. As each concept is explored, it is layered over the last so that the students can analyze the integration and interrelationships of systems, identify patterns, and ask and answer geographic questions along the way. Students will search through the textbook and pore over maps to find just the right land feature to place on their island.

“What feature in Asia is most like where I go hunting with my uncle in Harney?

Where is Harney, and what does it look like on a map?

Is it OK if I put it on my island? Stephanie, 7th grade

Lesson Summaries

In the first two lessons, “From Globe to Paper” and “Location, Location, Location!” students learn about projection and distortion, and absolute and relative location. They then apply these concepts to their island by placing it on a world map and recording its coordinates (absolute location) and where it is in relationship to the nearest continent (relative location). In subsequent lessons, not included in this document, students put these concepts into local constructs by mapping their desk and classroom, and then indicating the location of their school and state on a world map.

Physical Features: Lesson synopsis and island connection (“An Island is Formed”)*

Students learn the types of physical features found on the Earth’s surface, and they label the main physical features on a map of the continent or region being studied in the textbook (e.g. Asia). Students can also choose a statistic from the tabular data in the text (e.g. literacy rate, life expectancy) add it to the labeled physical map, analyze the patterns and interrelationships they see, ask and investigate geographic questions and then report their findings to the class. The
island is formed as students draw or trace a closed figure onto the template that includes at least one cape, peninsula, gulf and bay.

**Topography and Relief: Lesson synopsis and island connection***

In the subsequent lesson on topography and relief, students will construct the topography of their island by choosing real-life examples of fifteen types of physical features. They must include a minimum of three types of physical features from each of the following regions: Asia, US, Oregon/state, and their local region within Oregon/state (e.g. Southern Oregon or Willamette Valley). Students color a relief map over the physical features of Asia, analyze the topography of their region/state, and then construct a relief map of their island.

**Climate: Lesson synopsis and island connection***

As students learn about climate, they analyze the interrelationships between location (absolute and relative), topography and climate as seen on the continent or region being studied in the textbook (e.g. Africa). They do this by coloring a climate zones over a physical features map of (Africa). They then compare and contrast the aspects of climate, topography and location of (Africa) with their region/state, and then construct an island climate map. *Students can then choose a statistic from the tabular data in the text (e.g. literacy rate, life expectancy) add it to their map, then analyze the patterns and interrelationships they see, ask and investigate geographic questions and report their findings to the class.*

**Land Use/Industry: Lesson synopsis and island connection***

The next layer of study is that of land use/industry, which is greatly influenced by the location of natural resources. As students learn about this concept, they analyze the interrelationships of location (absolute and relative), topography, climate, and land-use as seen on maps of the continent or region being studied in the textbook (e.g. Europe). They can do this by placing symbols on a transparency of the physical features map of (Europe) to indicate deposits of minerals and fossil fuels, and then overlaying it onto other thematic maps of
(Europe). Students record their observations, ask geographic questions, and report to the class. Students can then choose a statistic from the tabular data in the text (e.g. literacy rate, life expectancy) add it to their map, then analyze the patterns and interrelationships they see, ask and investigate geographic questions and report their findings to the class. They then compare and contrast the aspects of climate, topography, location and land use of (Europe) with their own region/state.

Next, students construct an island land use map based upon their regional land use study.

The third and fourth lessons, “Where is Waldo?” and “Over the River and Through the Woods” can be used as an introduction to a unit on the human geography/population of a region, as students identify main physical features and then analyze the relationship between the topography and human migration routes. This lesson is a natural segue into a lesson on population growth and urban places.

**Population Distribution and Density: Lesson synopsis and island connection***

The final island map is one that encompasses all layers of geography, from topography to population. Students color a population density layer over a physical features map of the continent or region being studied in the textbook (e.g. N./S. America). They can use a transparency and a dry-erase marker to compare data from other thematic maps to try analyze influences, patterns and interrelationships of population clusters. Students can then choose a statistic from the tabular data in the text (e.g. literacy rate, life expectancy) add it to their map, then analyze the patterns and interrelationships they see, ask and investigate geographic questions and report their findings to the class. They then compare and contrast the interrelationships of topography, climate, location, land-use and population in (N./S. America) with their region/state, and then with their island.

Next, students construct an island population map. They should be able to explain their island’s population distribution, referring to the influences of physical features, topography, climate, absolute and relative location, natural resources and migration. This can be used as the final assessment piece, and can be done on paper, or students can use paper for planning the first
draft, and the final product can be constructed in the parking lot using side walk chalk and parking slots as map frames.

“I don’t want to put people on my island! They’ll ruin it!” 7th grade student

“Geography is fun! We get to lie on the floor and look at maps and figure stuff out!”
Jake, 7th grade

“A car is parked on my island!” Parker, 7th grade

“We drove through page fifty-five Saturday on the way to California; it was awesome!”
7th grade student

“The bell always rings too soon in geography!” Cody, 7th grade

“I liked learning about other places in geography, because now, when I hear about another place on the news, like Azerbaijan, I know what they are talking about. . . especially when we applied what we learned to our island; it helped me actually understand things like the rain shadow.” Amanda, 7th grade
LESSONS
Teacher: Debby Swope

Grade Level: Fifth - Eighth

Lesson Summary:
In this lesson, students make a flat map of the Earth by making cuts in an inflatable globe so that it lies flat. Students learn that shape, distance, size and direction are all distorted when a sphere is projected onto a flat surface. They will be able to explain why Greenland appears larger than Australia on a Mercator projection and be able to explain why Greenland is classified as an island but Australia as a continent. They will be introduced the main lines of latitude and longitude and locating coordinates on a map.

Curriculum Connection:
This lesson can be the introduction to a world geography class and precedes the lesson on latitude, longitude and absolute and relative location. Students are introduced to terms that will be further explained in the proceeding lesson.

Time Needed:
Two forty-minute class periods

Lesson Status:
I previously taught this lesson using balloons: plastic globes will save time and lend accuracy.

Materials Needed:
8” inflatable globes - 1 per student or student-pair (available at http://www.orientaltrading.com Oriental Trading Company Inc. 4206 South 108th Street, Omaha NE 68137; 1-800-875-8480), scissors, protractor, colored pencils, sharpie, notebook paper, 17”x11” butcher paper, tape, (document camera/iphone with email capabilities to classroom computer - optional)

Geography Standards (State and/or National Standards)
1. How to use maps and other geographic representations, tools and technologies To acquire, process and report information from a spatial perspective.

3. By the end of the eighth grade, the student knows and understands: the relative advantages and disadvantages of using maps, globes, aerial and other photographs, satellite-produced images, and models to solve geographic problems

**Geospatial Thinking Objectives:**

Comparison: How are places similar or different? Compare conditions/connections in one place with another.

Location: Where is the place? And why is it there? Where am I? Tell someone where something is.

**Starting the Lesson:**

I place the students in pairs. Then I give each student-pair an inflatable globe and ask them to inflate it and then respond to the writing prompt on the board, “Why is Greenland an Island and Australia a continent?”

**The Lesson:**

1. First I hand each pair scissors, a protractor, colored pencils, a sharpie and a large piece of Paper.

2. Next I have the students use the Sharpie and the inflatable globe to place dots on each of the grid intersections(points) in northern Greenland. Then I have the students use the protractor to measure and record

   1.) the distance between each point

   2.) the distance between the two points furthest from one another (80° N, 20°W and 80° N, 60°W). I instruct them to label these measurements “Before”.
3. Then I have the students make a flat map of the Earth by making cuts in an inflatable globe so that it lies flat, as follows:

1) Use your scissors to make cuts in your globe so that it lies flat.
2) Keep the equator intact, as it is the baseline for measuring distance N and S.
3) When you are done, the globe should still be in one piece but lying flat on your desk.
4) Tape your flattened globe onto the large paper.

4. After everyone has their globe on a flat surface, I choose one to project onto the white board by taking its picture with an iphone and e-mailing it to my computer, or by using a digital camera, or a document camera.

5. Next I explain that we now have a flat projection of the earth’s surface, and I ask the class to comment on the new flat map.

How is this different from the world map on the wall?

I guide them to comment on the separation at the both the Arctic and Antarctic Circles and the extent to which both Greenland and Australia have been impacted.

I ask for suggestions about how cartographers put Greenland back together again.

I then have a volunteer cartographer to “fix” the map on the white board as students use colored pencils to fill in the empty spots on their maps.

6. Then I have the students use the protractor to take and record fresh measurements on the now flat map of the grid intersections(points) in northern Greenland; measuring:

1) The distance between each point.
2) The distance between the two points furthest from one another (80°N, 20°W)
and 80°N, 60°W).

I instruct them to label these measurements “After”.

**Discuss distortion: distance, shape, area (size) and direction**

7. Next I lead a discussion of the problems that arise when we attempt to transfer a sphere onto a flat surface, and write the terms distortion: distance, shape, area (size) and direction on the board as student comments express each concept.

**Discussion:** What do you notice?

I include in the discussion a comparison of their before and after measurements; what happened to the distance between the dots and why?

8. I then have the students compare their flat maps to a Mercator projection of the world, and then to a globe, and finally to the land area table of the continents and Greenland.

<table>
<thead>
<tr>
<th>Continent</th>
<th>Area (Sq. Miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The World</td>
<td>57,308,738</td>
</tr>
<tr>
<td>Asia</td>
<td>17,212,000</td>
</tr>
<tr>
<td>Africa</td>
<td>11,608,000</td>
</tr>
<tr>
<td>North America</td>
<td>9,365,000</td>
</tr>
<tr>
<td>South America</td>
<td>6,880,000</td>
</tr>
<tr>
<td>Antarctica</td>
<td>5,100,000</td>
</tr>
<tr>
<td>Europe</td>
<td>3,837,000</td>
</tr>
<tr>
<td>Australia</td>
<td>2,968,000</td>
</tr>
<tr>
<td>Greenland</td>
<td>840,000</td>
</tr>
</tbody>
</table>

End the Lesson:

9. I wrap it up by having students reflect by responding to questions in their geography notebooks, during which time I show pictures of Greenland and Australia while students reflect in their notebooks.
Australia: http://hannesgreim.com/index.htm


**Projection Reflection Questions:**

Describe your strategy as you cut the globe to make it flat.

What did you need to do to make it lie flat?

How well did it work?

What was difficult? Easy?

What were your “before” measurements between the dots in northern Greenland?

What happened to that distance when you flattened the globe onto paper?

Explain the four things that become distorted when we make a flat map of a spherical object like the Earth. Use a specific example of each.

Lastly, explain why Greenland looks larger than Australia on a Mercator Projection (flat map), but on a globe it is smaller.

**References:**

Australia: http://hannesgreim.com/index.htm


Oriental Trading Company Inc. 4206 South 108th Street, Omaha NE 68137; 1-800-875-8480 http://www.orientaltrading.com
Location, Location, Location!
Lat. Long. and Absolute Location

**Teacher:** Debby Swope

**Grade Level:** Primary/Secondary

**Lesson Summary:** On the first day of this lesson students are introduced to interpreting, expressing and using absolute location in terms of latitude/longitude coordinates. It is assumed that the students know the cardinal directions. Students review the four hemispheres

Key terms:
- parallels of latitude, meridians of longitude, Prime Meridian, equator, International Date Line, great circle, hemisphere, coordinates

**On the second day,** students will work in groups using coordinates to locate countries on a map, record the first letter of each country, unscramble the letters to form words, and crack the code.

**Time Needed:** Two forty–minute class periods

**Lesson Status:** This lesson has been taught (to seventh grade students) and refined over a period of ten years.

**Materials Needed:**

**Day 1**

The cardinal directions posted on each wall of the classroom

Student desks in rank and file formation

Masking tape, rope (two pieces; one that will run at least three-fourths of the length of the room and one that will run at least three-fourths of the room’s width) **or** two long things such as stuffed snakes

3x5 cards or small pieces of paper (1 per student)
A picture or Power Point slide showing the equator, the Prime Meridian and the hemispheres

**Day 2**

Labeled world map from day 1
Latitude/Longitude contest sheet (1 copy for each student-pair)
Wall maps of the world – Mercator works best (1 per group)
A transparency of the student world map

**Geography Standards (State and/or National Standards)**

Geography Standard 1: How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective the student knows and understands: 1.) The characteristics, functions, and applications of maps, globes,

**Geospatial Thinking Objectives:**

Location: Where is the place? Where am I? Tell someone else where something is.

**Starting the Lesson: Day 1**

The following scenario is designed to cause students to problem-solve as they try to figure out how to be successful in following my directions. They begin to realize that I have given them no starting point.

I announce to the class that I need the third student, and only the third, to stand (or raise their hand – depending on the comfort level of the group). When this does not happen, (because too many students stand, or the third from the front responds when I am thinking the third from the center, etc.), I change my request to the first . . . then the fourth . . . , and so on, feigning confusion as to why simple directions seem to be so difficult. I finally ask the class what seems to be so confusing.

**The Lesson:**

1. First I lay a ten foot-long stuffed snake between the rows at the horizontal mid-point and tell the students that his name is Eeq *(for those with no snakes, rope or masking tape will suffice)*, and he represents the equator, the main parallel of latitude.
2. Next I establish the Prime Meridian (a snake named Merry) at the vertical mid-point. I explain to students that now we have a starting point, and that directions using lat./long. on a map are north/south of the equator and east/west of the Prime Meridian.

3. Then I ask those whose desks are south of Eq the snake, representing the Equator, to stand; then those north; and then the second row south, then north, and so on.

4. In the same manner, I establish desks east and west, using the vertical marker to represent the Prime Meridian and repeat the process.

5. Next, I write 1S; 1W on the board. I explain that this is a set of coordinates, and that they work like the multiplication table: they meet at a certain location, an absolute location.

I also tell the class that the degrees of latitude (distance from the equator) are always written first.

6. Then I ask the student whose desk is at this location indicated on the board to stand. I repeat this as time permits.

7. Now it is their turn. Students will write “spy coordinates”. I give each one a 3x5 card, instructing them to secretly indicate who the spy is by writing the coordinates of a classmate’s desk.

8. Finally, students take turns “outing the spies” by reading their coordinates, and raising their hand when their position is indicated.

**End the Lesson Day 1:**

9. I distribute the world map, and show a Power Point slide which uses time delay to add meridians and parallels to a picture of the Earth.

10. For closure, I instruct students to use a black colored pencil to trace the Prime Meridian on the world map, a blue pencil for the equator, and to label the Northern, Southern, Eastern and Western hemispheres in the map margins.

**The Lesson: Day 2**

First I have those students who did not get their turn in lesson 1 take their turn in “out the spy”

1. Then I project the Power Point as students buddy-check the labels on one another’s world maps - students adjust as necessary.
2. Next I write the set of coordinates for the school on the board, asking students to place a dot on their map at the location indicated. I then have students guess the significance of the coordinates. Students write the school’s name and coordinates on the back of the map.

3. I put the students in groups of four and hand out the Latitude Attitude page and a world map, one of each per group.

4. Then I write the first set of coordinates on the board and project the student world map.

5. Next, I use the laser pointer as the class directs me, using the cardinal directions, to the location indicated. Since there are no labels on this map, students will need to replicate the procedure using their group wall map in order to identify the country.

6. During the course of the activity, I will ask the class which set of coordinates seems most difficult, and then I will guide them to the answer.

7. At any time a group may ask for an accuracy check, and I will tell them which of their answers are accurate.

End the Lesson Day 2:

8. Introduction of the island project: I tell the students to place a red dot on their world map at the location where they would like to place an island. It must be between 50° North and 50° South, and it must be in the ocean. I have them write the coordinates on the back of their world map under the label “island”.

References:


Where is Waldo?
Topography and Human Migration

Teacher: Debby Swope

Grade Level: Seventh - Tenth

Lesson Summary: In this lesson, students analyze the relationship between topography and human migration while learning the major physical features of a region. They will review absolute and relative location and analyze the interaction and interdependence of human and physical systems.

Curriculum Connection: This lesson can be the introduction to a unit on the human geography of regions, and can be applied to trade routes, migration, etc. on a diversity of scales both locally and globally. The 19th-century western migration in the United States is the topic of the sample that follows.

Time Needed: Three forty-minute class periods

Lesson Status: Developed; yet to be taught in its entirety.

Materials Needed:

1. A wall map of the Physical Features of North America

2. Print the following 25 map tiles of the lower 48 from National Geographic Mapping the Americas Toolkit: (download free online at http://www.nationalgeographic.com/geography-action/americas.html #’s 35, 36, 37, 47, 48, 49, 59-60, 61-64, 71-79, 84-89, 94-96

   and the Map Tiles Key.

3. Write a group # on the back of each tile as follows (according to the # of student groups):

   Group 1 Tiles 60, 61, 72, 73, 49

   Group 2 Tiles 62, 63, 74, 75, 84, 85,
Group 3 Tiles 64, 65, 76, 77, 86, 94
Group 4 Tiles 78, 79, 89, 87,
Group 5 Tiles 88, 95, 96, 97
Group 6 Tiles 35, 36, 37, 47, 48

5. Bulletin board or wall onto which the class will attach their tile map.
6. The Physical Features map of North America (1 per student)
7. Physical Features information sheet (1 per student)
8. Physical Features cards cut apart
9. Tape

**Geography Standards:**

1. Identify geographic issues, define geographic problems, and pose geographic questions, as demonstrated by being able to

   - Identify and organize issues that should be considered in tackling a geographic problem (e.g., identify factors involved in plotting the route of a path for western migration).
   - Develop geographic questions about issues on subjects other than geography (e.g. history).
   - *Geography For Life: The National Geography Standards*; Standard #1: How to use maps and other geographic representations, tools and technologies to acquire, process, and report information from a spatial perspective.

**Geospatial Thinking Objectives:**

The Student will use maps and other geographic representations, tools and technologies to acquire, process, and report information from a spatial perspective.

- Location: Where is the place? And why is it there? Where am I? Tell someone else where something is.
- Analog: What distant places are analogous to this one? Is there another place like this? Identify places that are in similar situations on other continents or in other
cities, states, or countries and therefore might also have similar conditions.

- Pattern: Are there imbalances, clusters, strings, doughnuts, other patterns? Describe the spatial pattern of something on a map

Starting the Lesson:
As students enter the room hand each one a tile with group numbers written on the back: After finding their group, students first piece together their group’s map tiles, then each group will piece theirs together onto the wall to form a physical map of the contiguous lower 48 states.

The Lesson:

1. Instruct students to first piece together their group’s map tiles, and then each group will piece theirs together onto the wall to form a physical map of the contiguous lower 48 states. This activity will likely take an entire class period.

2. When a group has finished (or when students enter the classroom the next day) tape a physical features card the back of each person. Next, give each member a copy of the Physical Features information sheet and the Physical Features map. Ask students to deduce the feature on the card and its location by asking “yes or no” questions of other students (they must ask each member of the class a question before consulting someone twice).

3. When a student has successfully identified the physical feature on their own card, they will:
   1. Label the feature on the class tile map by taping their card to it.
   2. Label the feature on their map by printing it neatly on their Physical Features map handout
Assessment Plan:

Self-check, then buddy-check student maps for completion and accuracy
Class competition: Practice identifying physical features using the tile map

References:


Over the River and Through the Woods:

Human Migration and Topography

Teacher: Debby Swope

Grade Level: Seventh - Tenth

Lesson Summary: In this lesson students will analyze the influence of topography on early transportation routes, comparing and contrasting patterns of movement across the face of the planet. Human Geography Theme: Movement - The flow of people, goods, money, ideas, or materials between locations near and far.

Curriculum Connection: Students should be familiar with the locations of the 48 contiguous states, cardinal directions and the main physical features of the United States.

Time Needed: Two forty-minute class periods

Lesson Status: Partially taught once

Materials Needed:
Attached to a wall: Physical Tile Map (with the major physical features labeled) of the lower 48 from National Geographic Mapping the Americas Toolkit (download free online at http://www.Nationalgeographic.com/geography-action/americas.html) Print tile #'s 35, 36, 37, 47, 48, 49, 59-60, 61-64, 71-79, 84-89, 94-96

Physical Map of the United States (1 copy per student)


States cards cut apart (states in the Union as of 1825)

Transparency of the following: Physical Map of the United States; Routes to the West

Hat (from which to draw states cards)
Geography Standards:

Geography For Life: The National Geography Standards:

Standard #12 The Influence of Physical Geography on the processes, patterns and functions of human settlement

Standard #15 How physical systems affect human systems.

Skill Set 1: Asking Geographic Questions (From Geography For Life) By the end of the eighth grade, the student should know and understand how to

1. Identify geographic issues, define geographic problems, and pose geographic questions, as exemplified by being able to do the following:

   - Identify and organize issues that should be considered in tackling a geographic problem (e.g. identify factors involved in plotting the route of a path for western migration).
   - Develop geographic questions about issues on subjects other than geography (e.g. history).

Geospatial Thinking Objectives:

Condition: Students will analyze how topography influenced routes of the trails west

Connection: Students will compare and contrast patterns of movement across the face of the planet using the early transportation routes as they plot their own routes following or avoiding physical features (relationships that exist between different places and things).

Region and Association: Students will identify the linkages and interdependencies of the pioneers on physical systems by tracing the original routes and analyzing the influence of physical features on the direction of those routes.

Starting the Lesson:

Place the state cards in a hat and have each student, or pair, pull one out. Tell the students it is the 1830’s. They are moving out West. Then tell the students to draw the outline of the state they have chosen onto their copy of the Physical Map of the United States.

The Lesson:

1. Tell students to use a pencil to plot the route they would take to travel from the outlined state to Independence, Missouri.
2. instruct students to write the directions for their route in words, using geographic terms, and giving two reasons for the route they have chosen.

3) Next project an unlabeled copy of the physical map onto the white board on which the pairs will do the following:

4) Indicate the name and location of their state of origin by writing the postal abbreviation with dry-erase marker on the projected map (general location)

5) Draw their route to Independence, MO and explain it using their written directions.

6) Overlay a map showing the early roads; students compare and contrast their routes.

7) Discuss similarities and differences. Which land features did you need to circumvent? Which features would aid your journey? What physical feature did the original transportation routes follow? Avoid? The shortest distance between two points is a straight line; which of the routes is a straight line? Why?

8) Next guide students to look at the physical features map and discuss the importance of independence Missouri to pioneers traveling west (river transportation).

9) Students will then plot a route on their map from Independence, Missouri to California (students with Jan. – April birthdays), Oregon (May-August) and The Great Salt Lake in Utah (Sept.-Dec.).

10) After plotting the route on their map, instruct students to write these directions in words using geographic terms and explaining their choices. Students should be prepared to share, and defend their routes.

11) Then give each student a copy of the Map showing the Santa Fe and Oregon Trails. Students compare and contrast their route with the routes the trails actually followed

12) Discuss similarities and differences. Which land features did you need to circumvent?

Which features did you think would aid your journey?
What physical features did the original transportation routes follow? Avoid?
Which of the routes is the straightest? Why?
What other factors besides physical features may have influenced the routes?

To add a human component to this discussion, show a map of native American tribes at http://s2.hubimg.com/u/243129_f496.jpg; US map in 1821 at
Students may comment on Spanish presence.

13) Next, students use color to trace the path of each original trail onto their physical features map; label it with pencil.

**Assessment Plan:** Completion of map work. Journal writes/discussion of discoveries, comparisons, observations, and conclusions. Write a letter home explaining the best way to get to CA, OR, or Utah. Include what to look for and what to avoid.

**Extension:** Settlements– why/why not there? Use census to plot city population growth place and look for patterns of physical human geographic interaction.

**References:**

- Florida Center for Instructional Technology © 2006
APPENDICES
1. STUDENT HANDOUTS
LESSON 1: FROM GLOBE TO PAPER
FROM GLOBE TO PAPER

Land Area of the Continents and Greenland

<table>
<thead>
<tr>
<th></th>
<th>Sq. Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The World</strong></td>
<td>57,308,738</td>
</tr>
<tr>
<td>Asia</td>
<td>17,212,000</td>
</tr>
<tr>
<td>Africa</td>
<td>11,608,000</td>
</tr>
<tr>
<td>North America</td>
<td>9,365,000</td>
</tr>
<tr>
<td>South America</td>
<td>6,880,000</td>
</tr>
<tr>
<td>Antarctica</td>
<td>5,100,000</td>
</tr>
<tr>
<td>Europe</td>
<td>3,837,000</td>
</tr>
<tr>
<td>Australia</td>
<td>2,968,000</td>
</tr>
<tr>
<td>Greenland</td>
<td>840,000</td>
</tr>
</tbody>
</table>

EnchantedLearning.com

Projection Reflection Questions: Reflect on what you learned about map projections and distortion by responding to the following questions

1. Describe your strategy as you cut the globe to make it flat.
2. What did you need to do to make it lie flat?
3. How well did it work?
4. What was difficult? Easy?
5. What were your “before” measurements between the dots in northern Greenland?
6. What happened to that distance when you flattened the globe onto paper?
7. Explain the four things that become distorted when we make a flat map of a spherical object like the Earth. Use a specific example of each.
8. Lastly, explain why Greenland looks larger than Australia on a Mercator Projection, but on a globe it is smaller.
FROM GLOBE TO PAPER

Name
Date
Geo Notes

Topic: Projection and Distortion

**Essential Question:** Why is Greenland an Island and Australia a continent?

Notes, observations and my questions:

*Sample format for student notes and reflections*
FROM GLOBE TO PAPER

Reflection Questions and Response:

Questions I still have about this topic:

*Sample format for student notes and reflections
LESSON 2: LOCATION, LOCATION, LOCATION!
USE YOUR LATITUDE ATTITUDE TO BREAK THE CODE!

It takes geography skills to find the name of the country encrypted in the chart. To the untrained eye the following chart is just a list of coordinates used for locating places on the earth’s surface. But it is actually a code!

1. Decipher the code by using the coordinates of latitude and longitude to locate each place on a map. *Hint: The locations are countries, except within the U.S. and Canada where they are states and provinces.*

2. As you locate each place, write its name in the chart.

3. Circle the first letter of each name.

4. When you have been successful, the circled letters should spell the name of a country.

<table>
<thead>
<tr>
<th>Coordinates</th>
<th>Name of place</th>
<th>Number of letters</th>
<th>First Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. N 46° E103°</td>
<td></td>
<td>(8)</td>
<td></td>
</tr>
<tr>
<td>2. N 28° E 1°</td>
<td></td>
<td>(7)</td>
<td></td>
</tr>
<tr>
<td>3. N 41° E 64°</td>
<td></td>
<td>(10)</td>
<td></td>
</tr>
<tr>
<td>4. N 45° E 24°</td>
<td></td>
<td>(7)</td>
<td></td>
</tr>
<tr>
<td>5. N 31° E 34°</td>
<td></td>
<td>(6)</td>
<td></td>
</tr>
<tr>
<td>6. N 35° W 86°</td>
<td></td>
<td>(9)</td>
<td></td>
</tr>
<tr>
<td>7. N 41° W 93°</td>
<td></td>
<td>(4)</td>
<td></td>
</tr>
<tr>
<td>8. S 32° W 55°</td>
<td></td>
<td>(7)</td>
<td></td>
</tr>
<tr>
<td>9. N 52° W 106°</td>
<td></td>
<td>(12)</td>
<td></td>
</tr>
</tbody>
</table>
USE YOUR LATITUDE ATTITUDE TO BREAK THE CODE!

**Country FAQ sheet for ______________________________**:  

**Absolute Location:**________________________________________________________

**Relative Location:**________________________________________________________

**Size (sq. miles):**______________

**Population Density:**________________________

**Official Language(s):**________________________________________________________________

**Literacy Rate:** ______________________

**Life Expectancy** ______________________

**Sources Used:**________________________________________________________

5. Now conduct a primary investigation of that country by completing the following FAQ sheet:
LATITUDE ATTITUDE ANSWER CODE!

<table>
<thead>
<tr>
<th>Coordinates</th>
<th>Name of place</th>
<th>Number of letters</th>
<th>First Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>N 46° E103°</td>
<td>Mongolia</td>
<td>(8)</td>
<td>M</td>
</tr>
<tr>
<td>N 28° E 1°</td>
<td>Algeria</td>
<td>(7)</td>
<td>A</td>
</tr>
<tr>
<td>N 41° E 64°</td>
<td>Uzbekistan</td>
<td>(10)</td>
<td>U</td>
</tr>
<tr>
<td>N 45° E 24°</td>
<td>Romania</td>
<td>(7)</td>
<td>R</td>
</tr>
<tr>
<td>N 31° E 34°</td>
<td>Israel</td>
<td>(6)</td>
<td>I</td>
</tr>
<tr>
<td>N 35° W 86°</td>
<td>Tennessee</td>
<td>(9)</td>
<td>T</td>
</tr>
<tr>
<td>N 41° W 93°</td>
<td>Iowa</td>
<td>(4)</td>
<td>I</td>
</tr>
<tr>
<td>S 32° W 55°</td>
<td>Uruguay</td>
<td>(7)</td>
<td>U</td>
</tr>
<tr>
<td>N 52° W 106°</td>
<td>Saskatchewan</td>
<td>(12)</td>
<td>S</td>
</tr>
</tbody>
</table>

**Country FAQ sheet for Mauritius**

**Absolute Location:** within **20° 17 S, 57 ° 33 E.**

**Relative Location:** South-east of Madagascar

**Size (sq. miles):** Main island – 720 sq. mi.

**Population Density:** 1,479 per sq. mi.

**Official Language(s):** English (French and Creole)

**Literacy Rate:** 80%+

**Life Expectancy:** 70

**Sources Used:** _____________________________

**References:**
LESSON 3: WHERE IS WALDO?
Flash Cards for US Physical Features

<table>
<thead>
<tr>
<th>Gulf of Mexico</th>
<th>Atlantic Ocean</th>
<th>Pacific Ocean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chesapeake Bay</td>
<td>Dela-ware Bay</td>
<td>Mobile Bay</td>
</tr>
<tr>
<td>The Rocky Mountains</td>
<td>Puget Sound</td>
<td>San Francisco Bay</td>
</tr>
<tr>
<td>Galveston Bay</td>
<td>Seria Nevadas</td>
<td>Coast Range</td>
</tr>
<tr>
<td>Cascade Mountains</td>
<td>Brooks Range</td>
<td>High Alaska Range</td>
</tr>
</tbody>
</table>
Flash Cards for US Physical Features

<table>
<thead>
<tr>
<th>Ouachita Mountains</th>
<th>Ozark Plateau</th>
<th>The Colorado Plateau</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia Plateau</td>
<td>San Joaquin Valley</td>
<td>Sonoran Desert</td>
</tr>
<tr>
<td>Great Basin</td>
<td>Great Salt Lake Desert</td>
<td>Great Plains</td>
</tr>
<tr>
<td>Lake Ontario</td>
<td>Lake Erie</td>
<td>Lake Superior</td>
</tr>
<tr>
<td>Mojave</td>
<td>Central Plains</td>
<td>Coastal Plains</td>
</tr>
</tbody>
</table>
Flash Cards for US Physical Features

<table>
<thead>
<tr>
<th>Lake Michigan</th>
<th>Lake Huron</th>
<th>Great Salt Lake</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson River</td>
<td>Columbia River</td>
<td>Snake River</td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorado River</td>
<td>Rio Grande</td>
<td>Yukon River</td>
</tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Platte River</td>
<td>Ohio River</td>
<td>Mississippi River</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missouri River</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Physical Features

Read the following paragraphs and label the boldfaced physical features on the map. You may consult previous maps for more information.

These major bodies of water surround the United States: **Atlantic Ocean**, **Arctic Ocean**, **Pacific Ocean**, and the **Gulf of Mexico**. The United States has great access to the world's oceans through: **Chesapeake Bay** 38°N, 76°W, **Delaware Bay** 39°N, 75°W, **Mobile Bay** 300N, 88°W, **Galveston Bay** 30°N, 95°W, **Puget Sound** 48°N, 123°W, and **San Francisco Bay** 38°N, 122°W.

The **Rocky Mountains** run north and south across the western United States. The **Sierra Nevada** run north and south along eastern California. Along the Pacific coast from California to Washington are the **Coast Ranges**. East of the Coast Ranges in Oregon and Washington are the **Cascade Mountains**. The **Brooks Range** crosses northern Alaska, and the **High Alaska Range** crosses southern Alaska. Running northeast from Georgia to Maine are the **Appalachian Mountains**. In eastern Oklahoma and western Arkansas are the **Ouachita Mountains**. Northeast of them, in northern Arkansas and southern Missouri, is the **Ozark Plateau**. The **Colorado Plateau** is in the "four corners" region where Utah, Colorado, Arizona, and New Mexico meet. The **Columbia Plateau** covers much of eastern Oregon.

The area between the Coast Ranges and the Sierra Nevada, the Central Valley of California, is often called the **San Joaquin Valley**. East of the Sierra Nevada is the **Great Basin**. Much of the Great Basin is a desert. The section of the basin just west of the Great Salt Lake is called the **Great Salt Lake Desert**. The **Mojave Desert** is in extreme southeast California and the **Sonoran Desert** is in southern Arizona.

East of the Rocky Mountains, from Canada to Texas, is the **Great Plains**. The **Central Plains** cover much of Illinois, Indiana, and Ohio. The **Coastal Plains** extend along the Gulf of Mexico and southern Atlantic coasts from Texas to Virginia.

There are many large lakes in the United States:

- **Lake Ontario** 44°N, 78°W,
- **Lake Erie** 42°N, 81°W,
- **Lake Superior** 48°N, 90°W,
- **Lake Michigan** 43°N, 87°W,
- **Lake Huron** 45°N, 83°W, and the **Great Salt Lake** 41 ON, 113°W.

There are many large and useful rivers in the United States. The **Hudson River** flows south through the state of New York. The **Columbia River** flows from Canada through Washington to the Pacific Ocean. Its largest tributary, the **Snake River**, flows through Idaho and Washington. The **Colorado River** flows from Wyoming and Colorado to its mouth in Mexico. The **Rio Grande** flows from the Colorado River south through New Mexico and then forms the Mexican border as it flows southeast to the Gulf of Mexico. The **Yukon River** rises in northwest Canada and flows west through Alaska to the Pacific Ocean.

Many of the lower 48 states lie within the Mississippi River Drainage Basin. The **Mississippi River** flows from Minnesota south to the Gulf of Mexico. Its longest tributary, the **Missouri River**, flows from Montana to its mouth in Missouri. The **Platte River** flows from Wyoming and Colorado east through Nebraska. The **Ohio River** carries more water than any other Mississippi tributary; it flows southwest from its head in Pennsylvania.
LESSON 4: OVER THE RIVER AND THROUGH THE WOODS
<table>
<thead>
<tr>
<th>State</th>
<th>State</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mississippi</td>
<td>Connecticut</td>
<td>Delaware</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Louisiana</td>
<td>Maine</td>
</tr>
<tr>
<td>Georgia</td>
<td>Illinois</td>
<td>Indiana</td>
</tr>
<tr>
<td>Maryland</td>
<td>Alabama</td>
<td>Massachusetts</td>
</tr>
<tr>
<td>Missouri</td>
<td>New Hampshire</td>
<td>New Jersey</td>
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<td>------------</td>
</tr>
<tr>
<td><img src="image" alt="Missouri" /></td>
<td><img src="image" alt="New Hampshire" /></td>
<td><img src="image" alt="New Jersey" /></td>
</tr>
<tr>
<td>North Carolina</td>
<td>Pennsylvania</td>
<td>Rhode Island</td>
</tr>
<tr>
<td><img src="image" alt="North Carolina" /></td>
<td><img src="image" alt="Pennsylvania" /></td>
<td><img src="image" alt="Rhode Island" /></td>
</tr>
<tr>
<td>South Carolina</td>
<td>Tennessee</td>
<td>Vermont</td>
</tr>
<tr>
<td><img src="image" alt="South Carolina" /></td>
<td><img src="image" alt="Tennessee" /></td>
<td><img src="image" alt="Vermont" /></td>
</tr>
<tr>
<td>Virginia</td>
<td>New York</td>
<td>Ohio</td>
</tr>
<tr>
<td><img src="image" alt="Virginia" /></td>
<td><img src="image" alt="New York" /></td>
<td><img src="image" alt="Ohio" /></td>
</tr>
</tbody>
</table>
http://www.50states.com/faq.htm
B. ISLAND SUPPLEMENTS
An Island is Formed

1. Refer to your textbook to define the following land features:
   - A bay is ____________________________
   - A peninsula is ____________________________
   - A gulf is __________________________________________
   - A cape is __________________________________________

2. Choose either the portrait or the landscape template, and draw the outline of an island as seen
   from the air (birds-eye view). You may make your island any shape that you wish, but be
   sure to include at least one each of the land features defined above as you draw the outline of
   your island’s coast.
      1.) Room must be left for a legend – however, do not draw a legend at this time.
      2.) A minimum of 1” of space needs must remain between the coast of your island
          and the frame.
   b. Elements of a map to include/consider:
      1.) Neatlines
      2.) Meta Data (south of the southern neatline)
      3.) Orientation: You may choose portrait or landscape
   c. Draw lightly with pencil
      1.) You will need to erase and adjust as we add features.
      2.) Tracing a shape onto the template is ok, but only draw the outline
          onto the template.
3. Mark the location of your island on the world map with a red colored pencil
   *Note: Your island must be between the northern and southern 50th parallels.
4. Give your island a name, and write the coordinates of your island and its name on the
   following lines. Use a complete sentence, and spell accurately. ____________________________
Match the physical features in the word bank to their correct locations in the illustration.

Word Bank:
- Basin
- Bay
- Delta
- Gulf
- Isthmus
- Lake
- Mountain range
- Plain
- Plateau
- River
- Strait
- Peninsula
Island Physical Features Log

Name__________________
Section_________ Date_________

**Directions:**
1. In column A, list the 15 types of physical features you plan to include on your island.
2. Use maps and other reference materials to find a real-life example for each feature, and write its name in column B.
3. Place a check mark in column C to indicate where each real-life example is located on the Earth’s surface.
4. Write the elevation of each feature, in feet, in column D.
5. Decide on the name you plan to give this feature when you draw it on your island, and write that name in column E.
6. Use pencil to draw each feature onto your island, and neatly print its name. Then use column F as a self-check for Clarity, Accuracy, and Neatness of each drawn and labeled feature.

<table>
<thead>
<tr>
<th>A. Type of Physical Feature</th>
<th>B. Name of Real-life Example</th>
<th>C. Location on Earth’s Surface</th>
<th>D. Elevation</th>
<th>E. Name on Island</th>
<th>F. Scoring Column for Drawn and Labeled on Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (Example) Canyon</td>
<td>Grand Canyon</td>
<td>✓</td>
<td>6,000' Feet</td>
<td>Canyon of No Return</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
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<td></td>
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<td>15</td>
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</tr>
</tbody>
</table>
Island Climate Key

Name __________________________

Date ________________

Directions:

1. Use your textbook and other resources to complete the climate zones key below. Some entries are missing the term, some are missing the definition and some are missing the symbol.
2. Use colored pencils to shade each box below according to the climate it represents.
3. Cut out the completed key, and use it as the key for your island climate map.

**Climate Zones**

- **ice cap**: very cold all year with permanent ice and snow
- **Mediterranean**: warm all year with dry summers and short, rainy winters
- **tundra**: cold, snowy winters and cool, rainy summers
- **arid**: hot and dry all year with very little rain
- **semiarid**:
- **marine west coast**: warm summers, cool winters, and rainfall all year
- **tropical wet**: warm, rainy summers and cool, snowy winters
- **tropical wet**: hot all year with rainy and dry seasons
- **highlands**: hot, rainy summers and mild winters with some rain
- **highlands**:
## Island Climate Zones Log

### Directions:
1. Plot your island’s climate zones by consulting your climate zones key, your island’s physical features map, the textbook and your climate notes, to complete your island’s climate log.
2. Use the completed log and reference materials to create a climate map of your island.

<table>
<thead>
<tr>
<th>Physical Feature</th>
<th>Real-life Example</th>
<th>Location</th>
<th>Elevation</th>
<th>Climate Zone</th>
<th>Climate is influenced by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crater Lake</td>
<td>✓</td>
<td></td>
<td>6400'</td>
<td>Mt Highland</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
</tbody>
</table>

1. 
2. 
3. 
4. 
5. 
6. 
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9. 
10. 
11. 
12. 
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14. 
15.
Island Population

This worksheet will help you analyze and map your island’s population distribution in its cities. Keep in mind that your island is the size of the state of Oregon (about 90,000 sq. mi.).

According to Portland State University, 40% of the entire population of Oregon lives in its ten most populous cities:

1. Portland: 550,000
2. Eugene: 155,000
3. Salem: 155,000
4. Gresham: 101,000
5. Hillsboro: 89,000
6. Beaverton: 86,000
7. Bend: 81,000
8. Medford: 77,000
9. Springfield: 58,000
10. Corvallis: 55,000

This means that approximately 1.4 million people live in them.

2. List the physical feature that you think may have been a factor in beginning a city in that location (the first one has been done for you).

   1. Portland: 550,000 Columbia River; Willamette Valley
   2. Eugene: 155,000
   3. Salem: 155,000
   4. Gresham: 101,000
   5. Hillsboro: 89,000
   6. Beaverton: 86,000
   7. Bend: 81,000
   8. Medford: 77,000
   9. Springfield: 58,000
   10. Corvallis: 55,000

3. Now place the ten most populous cities on your island. Draw a dot to mark the location of each.
4. Write the name of each city in pencil.
5. Next to the name of each city, write its population.
6. Identify the population density in the areas surrounding the cities. Draw an isoline around each area (refer to the key of a population map in your textbook).
7. Inside each isoline, write the number of people per square mile
8. Referring to the key in your book, write which color you need to use in each area to indicate the population density when you color your final copy.
9. Draw, label, and color the key on your final copy. Use a straight edge when drawing geometric shapes. Include symbols to indicate large city population
10. Now, use a fresh copy of your island and a pencil. Sketch in your island population areas.
11. Finally, use colored pencils to complete your final copy.
C. STUDENT WORK SAMPLES
An Island is Formed: Island Outline

Map of Herschie Island
References


Australia: http://hannesgreim.com/index.htm


