What is Your GEO?

A Geographic Education Outlook for the 21st Century Student

Rebecca Haapanen

University of Oregon

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Author Note

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Acknowledgements

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Abstract

After completing an action research project in 2009 regarding the lack of intrinsic motivation among high school geography students, I decided to take the research and results one step further. I included strategies from the results not only to give the discipline more respect, but also to attempt to make geography more appealing to students and facilitate an environment where they want to learn for their betterment, not to simply obtain a grade to fulfill credit hours. The overarching goal of this project was to make geography appealing to a geo-uninformed student body by re-writing an outdated Geography I curriculum for the 21st century student. It is my desire to revitalize a struggling elective by utilizing the results gained from the previous project. Included in this paper is a description of the school and community context wherein the project took place, a literature review of related research, and a description of the project itself, along with an appendix with the lessons that I have implemented to achieve my overall goal.
What is Your GEO?

A Geographic Education Outlook for the 21st Century Student

School Context

The school where the project was focused is located in Lake County, Illinois and is unique among the 20 public high schools in the county. Although it is technically a one school district, it is actually two as the high school is a split campus 10 miles from one another in the same village with grades 9-10 at one campus and 11-12 at another campus. The split campus setup began in 1997 when a second high school was built to accommodate increased enrollment and expanding housing developments in the district. The second school was built with the intention that it would eventually be converted into a second four-year school. Ten years late; however, this idea still has not materialized due to an unsupportive community.

According to the Illinois State School Report Card (2009), the combined school served 4,113 students in an 9th through 12th grade. The student population was composed of 58.6% White, 9.8% Black, 17.7% Hispanic, 9.6% Asian/Pacific Islander, 0.3% Native American, and 4% Multiracial/Ethnic. Of the 4,113 students in the district, 14.8% were from low-income families, 3.1% had a limited-English proficiency rate, the high school dropout rate was 0.6%, the chronic truancy rate was 12.2%, the attendance rate was 92.8%, and the mobility rate was 5.4%. The graduation rate was 95.5% and was made up of the following: 93.7% males and 97.3% females. Of those, 96.2% were Whites, 95.4% were Blacks, 92.5% were Hispanics, 96.6% were Asian/Pacific Islanders, and 95.2% were Multi racial/ethnic group. In addition, 90.8% of the students had disabilities and 92.2% were economically disadvantaged.

Many of the students at this high school are high achievers. According to the 2009-2010 School Profile, the class of 2009 had 933 graduation candidates, of which there were six
National Merit finalists, 12 National Merit Commended students, 133 Illinois State Scholars, and 38 President’s Education Award winners. In the 2008-2009 school year, the composite score for the ACT was a 21.9. Students that took the SAT that year scored a 609 in Critical Reading 614 in Math and a 591 in Writing. In addition, 518 students electively chose to take 989 Advanced Placement Examinations last year. 89% of the students received a score of a 3, 4, or 5 signifying a passing grade according to the College Board.

According to the Illinois State School Report Card in 2009, Warren Township High School had 244 teachers on staff. Of the 244 teachers, there were 53.1% female and 46.9 male. Of those, there were 91.9% White, 1.6% Black, 5.6 Hispanic, 0.8 Asian/Pacific Islander, and 0% Native American. The average teaching experience was 10.4 years. Teachers with bachelor’s degrees accounted for 41.3% of teachers, while 58.7% had a master’s degrees or above. The 244 teachers were spread across 10 teaching categories. The pupil-teacher ratio was 1 to 19.2. The average class size was 21.2 students.

According to district statistics, the operating cost per student was $10,065 for the 2008-2009 school year. A portion of this was distributed to various areas such as student services, clubs, and sports. Student services included in-house special education which was composed of 19 teachers and aids, an academic recovery program called ARC with two teachers and a guidance department with twelve counselors, three social workers, three psychologists, and five deans. There were more than 2,600 students involved in the 38 clubs and 24 interscholastic sports during the 2009-2010 school year.

The administrative structure follows a traditional model among Illinois high schools. At the district level, there is a Superintendent, Assistant Superintendent, Director of Business
Services, as well as a Director of Instruction and School Improvement. Located at each campus, is a Principal, an Assistant Principal, a Director of Special Education, and two or three Deans.

Community Context

According to the 2000 U.S. Census, the community where the school is found covers 50 square miles and includes all or part of 12 communities and serves approximately 61,000 residents. Although there are twelve towns located within the district, one town accounts for the majority of the student population. The town is located 40 miles from Chicago, Illinois, a major metropolitan Midwestern city and 10 miles from Lake Michigan, a major body of fresh water. There is ample public transportation that exists throughout the community including commuter rail system, bus system, and a taxi service. The town is also 5 miles from a regional charter airport and 30 miles from an international airport. It is also located within 10 miles of a major international fresh water port and a major interstate highway system runs directly through the town. The school reaps economic benefits from a large tax base generated from major outlet mall and an amusement park located within the community.

According to the 2000 Census Data, the town had a total population of 28,834 citizens covering 13.4 square miles. The population of the county increased at an estimated rate of 6.3% from 2000 to 2003 according to the Census Bureau statistics. The demographic make-up of the community included: 48.5% male and 51.5% female of the population with a median age of 25-44 which accounted for 37.2% of the total population. The ethnic composition of the community at that time was: 82.1% White, 5.1% Black, 0.2% American Indian and Alaska native, 8.3% Asian/Pacific Islander, 6.0% Hispanic, 2.2% Multi-racial/ethnic, and 2.2% other. In 2000, the community was located in the third wealthiest county in the United States.
According to the 2000 Census, the community’s median house value was $199,000 and median rent was $806. The community’s education statistics show that 94.1% were high school graduates and 47.8% had a Bachelor’s degree or higher. The median household income was $75,742 in 2000 with most citizens holding professional, middle class occupations. The number of citizens in the labor force (16 years and over) included 75.4% of this specific population. The most common occupations for males were in management as: farm managers (9%), sales representatives, services, wholesale and manufacturing (7%), top executives (5%), Other sales and related workers including supervisors (5%), computer specialists (5%), engineers (5%), and other production occupations including supervisors (4%). The most common occupations for females were secretaries and administrative assistants (6%), business operations specialists (5%), teachers (5%), other management occupations except farmers and farm managers (5%), information and record clerks except customer service representatives (5%), registered nurses (5%), and other office and administrative support workers including supervisors (5%).

The high school has undergone a tremendous growth spurt over the last 15 years. For example, the student population in 1990 was 1,413 students; in 2000, the student population was 2,874; and the student population from 2009-2010 school year was 4,113 students. This tremendous growth of over 200% has led to a number of fiscal problems in anticipation of an ever expanding student population. Budgeting became quite complex and an operational deficit of over $6 million has been accrued. The district has recently passed a referendum that would provide funds for building upgrades and expansion of programs. Despite this fact, concessions were made in 2009 to an existing contract between the teachers’ union and the administration to allow the district to remain solvent in areas that impact students.
Literature Review

Research was conducted to support this project which included researchers from a variety of countries, journals, and authors from a variety of backgrounds and experiences. In completing this research, it is interesting to note that few articles were found regarding the importance of geography in schools in the United States. Instead, what was found were large movements to either revamp or increase the importance of geography in other nations such as Turkey, New South Whales, Finland, and England. It was remarkable that there was not more emphasis placed on geography inclusion into the required standards for graduation from public high schools in America. In fact, it was noted by American scholars and professors in a few articles, that there was a minimal amount of quality research in existence in America on geography education. This lack of geography education research on the high school level in America was frustrating and made the following project challenging.

As a result of Goals 2000 from the Educate America Act 1994, more support has been granted to geography education. Specifically, much of this support has been generated as a result of the National Geography Standards Project in 1994, which has caused geography education to thrive in recent years. According to the research of Bednarz, Downs, and Vender in 2003, a shift has occurred in this discipline between the “old geography” and the “new geography” as a result of this new attention. Through their research, they identified archaic geography with traditional pedagogy driven by textbook and rote memorization. After increased attention to the discipline, a “new geography” has evolved and refers more to student centered, applicable, hands-on curriculum that focuses on problem solving (p. 485). “New geography” aligns with the recent pedagogies geared towards student centered classrooms found in schools today throughout the United States.
One common theme stated by many of the authors was the cornerstone that geography needs to be made more relevant to students’ lives (Bednarz & Bednarz, 2004, p. 23). In the era of the No Child Left Behind Act of 2001, the added pressure placed on success from high-stakes testing shows an increased number of schools are turning towards skills-based curriculum such as in the school where this project took place. By making curriculums increasingly skills-based, the geography discipline is now more pertinent to students’ education due to the natural connection it has. Some schools model their skills and curriculums after the College Readiness Standards (CRS) created and maintained by ACT. Many schools have skills inadvertently placed in their curriculums; however, basic skills are now coming to the forefront. This is a result of many schools focusing on college preparation and readying their students for high-stakes testing and teaching a variety of skills. The Rediscovering Geography Committee 1997 found that geography should be applicable to students’ lives after high school, should focus on problem solving strategies, and should formulate strong decision-makers (Bednarz & Bednarz, 2004, p. 23). Despite these new challenges, geography education can benefit from these new implementations and bring success to CRS-based schools where geography can become a strong conduit to implement the basic skills necessary for students to experience increased success on high-stakes exams.

Much of the research focused on the implementation of standards in geography curriculums. By doing this, standards will provide high school geography classes with the credibility needed to be viewed with greater esteem among American high schools. With increasing global political, economic, and social conflict, citizens need to be cognoscente of where these current events are taking place and to embrace the necessary tools to perhaps prevent further conflict. The standards stated in Geography for Life: National Geography
Standards 1994 is a guide for teachers to follow to include structured and researched standards into their curriculums and help geography programs gain respect (Bednarz & Bednarz, 2004, p. 23). In 2004, Bednarz concluded that “the Standards summarize the ‘challenging subject matter’ of geography in terms of ‘what every young American should know and be able to do in geography’ and bring school geography closer to contemporary academic geography in terms of content, perspectives, and skills” (p. 225). Today, the eighteen standards put into place in 1994 are changing to reflect the current world and bring the geography discipline up to date. New National Geography Standards are set to be released in the near future.

As exciting as the updated standards are, there are additional standards established by other organizations such as the National Assessment of Education Progress (NAEP). With differing organizations implementing various standards not aligning to the same goal, it seems counterintuitive to the overall goal of strengthening the presence of geography in America. The previous trends discussed in geography education focused on the smaller scale issues such as skills and standards, but a grander problem was also addressed in the research found.

Another area where authors tended to focus throughout the research, included the fear of a decline in geography education. Bednarz, Downs, and Vender discussed that this downfall is based on cyclical events occurring in geography education. This downfall began with low numbers of students receiving minimal geography educations prior to reaching college, this translated into fewer geography minors, which led to fewer educators with a geography background, which caused fewer classes/units in geography offered in K-12 schools, which ultimately culminated in fewer students receiving a strong background in geography prior to college. (p. 491) This trend makes it even more necessary to strengthen the geography discipline nationally so as not to experience geographic extinction in American schools.
In summation, although the limited research for geography education in America is diverse in perspectives, many researchers are in agreement about one concern. As stated by researchers Van der Schee, Vankan, and Leat in 2003. They believed the importance of geography was to further the development of students as life-long learners and thinkers (p. 331). This alone is what makes geography so valuable to students of the 21st century. The standards by which curriculums are based are important to making the geography discipline significant, but not as important as the skills the discipline teaches students to make them life-long learners in today’s society. Lastly, additional support for geography education and perhaps the most significant was published in 2006 by Gregg & Sekers supporting that the greater the number of opportunities students are given to learn, the more opportunities they will have to make sense of the world (p. 53). Geography would be a particularly fitting realm for this to happen.

**EDGE Project Description**

The focus for the terminal project for the Education in Geography program through the University of Oregon’s Department of Geography was to help make geography appealing to a largely geo-uninformed student body by re-writing an outdated Geography I curriculum for the 21st century student and revitalize a struggling elective. This topic was chosen for a variety of reasons. Largely geography’s place in the school’s curriculum needs to be strengthened. With low enrollment numbers for the class it was getting lost among other archaic social studies electives.

Another reason for choosing the topic was to address cynics’ perspectives that believe the geography discipline is becoming obsolete due to students’ access to technological outlets like Google and Mapquest. While it is true that a student can simply look up the facts that a geography class can teach, they may also do this for any other subject taught. Although the
content associated with the geography curriculum is important, the course is also crucial if not more so, for the valuable skills students obtain from the class that will stay with them long after graduation which encourages them to become life-long learners as Van der Schee, Vankan, and Leat suggested in 2003.

At the onset of the project, six concerns of the course, Geography I, were identified as needing immediate attention to increase the relevancy and longevity of the course. These concerns included the following: geography was not a requirement at the school, there was a low student enrollment in geography classes, many high school students lacked basic geographic content and skills, the outdated curriculum needed to be re-written, students’ interests did not play a large part of what was taught, too much content needed to be taught during the time allotted, and lastly many counselors at the school considered and sold geography as an easy “A” course to lower achieving students. These six concerns were then redefined into goals to accomplish throughout the terminal project.

Six goals were generated to strengthen Geography I and would be achieved by the end of the terminal project process. The goals included the following: increasing student enrollment, developing greater student interest in the field, incorporating National Geography Standards, College Readiness Standards, and the school’s Social Studies Power Skills, making Geography I applicable to today’s students, and lastly culminating with the revision of the Geography I curriculum. By obtaining these goals, the course would achieve the value necessary to become an attractive fixture in the social studies department.

To accomplish the previous goals, six solutions were implemented and carried through during the 2009-2010 school year to hopefully ensure the success of Geography I. The solutions generated included the following: to support the curriculum with relevant standards, to include
additional current events, to increase opportunities for technology implementation, to explore historical geography, to add additional hands-on activities, and lastly to gauge student interest with greater frequency. By implementing each solution, Geography I should be on a future path toward revitalization and becoming more appealing to the 21st century student.

The first solution to improve Geography I was to base the curriculum on credible standards. The rationale behind this was to not only provide a research base for the curriculum to give content additional integrity, but to also align with the school’s recent shifting goals of becoming increasingly standards-based to better prepare students for high-stakes testing. The standards were not only implemented into daily lessons, but also the written Geography I 2010 curriculum. Three different levels of standards were applied to this curriculum including two national standards and one set of school standards.

Among the three types of standards included into the curriculum to increase the validity of the course, the school required College Readiness Standards which have been shaped by ACT creators of a high-stakes college admittance exam commonly used in the Midwest. There are five content areas included in these standards to best prepare students for the ACT including Reading, Writing, English, Science, and Mathematics. The majority of the standards chosen to best align with geographic content included Reading and Writing.

The school also required the implementation of the recently developed Social Studies Power Skills 2010 into the Geography I curriculum. The six Power Skill categories include Note-taking, Test Taking Strategies & Quotation Analysis, Map, Chart and Graph Analysis, Primary Source Evaluation (bias/perspective/point-of-view), Critical Thinking, and Research. The skills were then further broken down throughout grades 9-11 into manageable goals linking each skill towards mastery. There is not a required social studies course for 12th grade, only electives are
offered, thus not necessitating additional goals beyond 11th grade. With the inclusion of these power skills, the course is given greater legitimacy in the social studies department.

The last set of standards that were implemented into the curriculum to improve the overall quality of the course was the National Geography Standards in *Geography for Life* 1994. Although created over 15 years ago, the standards have successfully guided the geography discipline into something much more meaningful as a credible course foundation. The implementation of these three sets of standards is found in the Appendix of this paper.

The next solution to re-creating the Geography I course to become more credible and thus appealing to the students was to focus on current events. The rationale for this is to provide an understanding of place and purpose when addressing modern global issues, in addition to understanding the concept of diffusion throughout space. Various ideas to address current events in the classroom include student current event presentations, student authored news articles in reaction to current events, and lastly discussions or debates regarding global current events.

An example of a current event activity that was implemented this past school year was called the 5 Themes in Reality lesson. This project fit into Unit 1 Physical Geography. Students were to locate a current event online from a reputable source and connect it to the five themes of geography in a written summary and reflection culminating with a five minute class presentation. The corresponding teacher lesson plan and student direction sheet can be found in the Appendix.

The next implemented solution to improve the quality of the Geography I curriculum was to increase the usage of technology in the classroom. The rationale for this decision was to simulate students’ frequent desire to be online. Also, technology would provide additional opportunities to reach out to all types of learners, in addition to being a more current resource than their textbook getting the most up-to-date information available. A variety of product ideas
involving technology inclusion into Geography I involve using GIS software, virtual fieldtrips, accessing the U.S. Census Bureau, Windows Movie Maker, and Microsoft Publisher among others.

The lesson example to address the technology solution not only used technology in the research, but it was more unique in that the research topic itself for the project was technology. The title of this lesson was the Going Green Project and fit into Unit 1 Physical Geography. It was a multifaceted project including a student portfolio and presentation to school administrators to try to “convince” the school to *Go Green* using new technological improvements in energy consumption. The teacher lesson plan and student direction sheet for this project can be found in the Appendix.

The fourth solution to improve the quality of geography education at the school was to include more historical geography. Historical geography is a diverse study focusing not only on the change over time and space of human geography, but also physical geography. The reason for including this solution was that students needed to realize in order to understand the present, one must understand the past. Product ideas for implementation of historical geography include a genealogy project, historical inquiry of urban development and land use, comparative histories project, interviews, and to map migration routes.

A lesson example that has been implemented was the National Park Project located in Unit 1 Physical Geography. This lesson focused on the physical development and histories of the National Parks of the United States. Following an activity where the students chose a park, created a brochure, and presented it, they also completed an activity specific to Yellowstone National Park and its potential life-altering future. The jigsaw activity includes seven stations and one cumulative reflective writing assignment regarding the geologic past, present, and
future. The teacher lesson plan and student direction sheet for this activity can be found in the Appendix.

Another solution to generating greater support for Geography I was to include additional opportunities for hands-on student learning. In addition to addressing additional student learning styles, it is important for students to think outside the textbook for a greater awareness and appreciation for the discipline. Project ideas for becoming more hands-on include getting into the field whenever possible to conduct research, geo-caching, using geography related manipulatives, practicing cartography skills, simulations, creating a culture fair, or creating a diorama.

The project that was implemented to address this hands-on solution was the Road Trip Project in Unit 2 North America. A Road Trip Manual and Road Trip Presentation including a PowerPoint slide show and Fact Sheet were included in the finished products for the lesson. In addition to choosing a destination and route, deciding what to bring, hypothesizing what to do if something goes wrong, and creating a budget, students had to focus on their destination and describe the cultural and physical attributes of that location. Students enjoy this project so much they often got caught up with its real world applications and they begin to think they were actually taking the trip. The teacher lesson plan and student direction sheet for this project can be found in the Appendix.

The final solution to increase student interest in Geography I at the school included harnessing student curiosity about the discipline. The rationale for this was because students enjoy academics more if they have an interest in the subject. In addition, providing opportunities for student opinions gives students ownership and motivation for the subject. Various methods to gather information about student interests included an Initial Student Interest Survey at the start
of the semester, conducting Project Reflection Surveys to gather what students liked or disliked about an activity or project, Mid-term Reflection Surveys, and Semester Reflection Surveys. All data was compared and relative suggestions are implemented to improve for the future units or semesters.

The example that was chosen to gather students’ reflections was the Initial Student Interest Survey. This was distributed and collected toward the start of each semester. Suggestions are used to guide the course within the framework of the curriculum. Such questions included on said survey included the following: What are you hoping to take away from the class? What country in each region are you most interested in learning about? What encouraged you to take this class? What type of geography are you most interested in learning about? Where have you traveled? and lastly, What is your dream travel destination and why? The teacher lesson plan and student survey sheets for this activity can be found in the Appendix.

The six solutions responding to the original Geography I concerns have all been implemented in the classroom and have been added to the curriculum. Although it is too early to tell the effect of the solutions to revitalize Geography I, short term effects of each solution have been positive based on student feedback.

The curriculum that was implemented was centered around Prentice Hall’s *World Geography: Building a Global Perspective* textbook and divided into three six-week units. These units include Unit 1 Physical Geography which covered the five themes of geography, Basics of Physical and Human Geography, and Global Warming. Unit 2 North America included the themes of Canada, the United States, and Mexico. The final unit included into Geography I is Unit 3 Latin America included the Caribbean, Central America, and South America. The above
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Scope and sequence has been applied to create the Geography I 2010 Curriculum, which can be found in the Appendix.

Conclusion

What is the Geographic Education Outlook? As of July 2010, the six solutions have been implemented into the curriculum. The Geography I curriculum will be submitted for school board approval Fall 2010. It is anticipated that the Geography I curriculum will be officially implemented during the 2010-2011 school year. The Geography II curriculum will be completed late summer 2010 and will also be submitted for school board approval Fall 2010. What is also very exciting regarding the geography discipline at the high school is that these subject offerings will gain an even greater interest with the pending approval of Advanced Placement Human Geography planned for the 2011-2012 school year and will be introduced to the 11th and 12th grades level.

Thus, the Geography I offering which existed for many years will be expanded in the future to Geography I and II as well as Advanced Placement Human Geography. The proposed class curriculums will increase social studies class opportunities for students of differing abilities and interests thereby strengthening the geography curriculum.
References


Appendix

This appendix includes the aforementioned materials, which are organized according to each solution for the Geographic Education Outlook to help modify the Geography I curriculum. The slides of the PowerPoint presentation of this project are also included at the end of the appendix.

- GEO Solution 1 Based on Standards
  - Social Studies Power Skills
  - Geography I Curriculum

- GEO Solution 2 Current Events
  - 5 Themes Current Event Activity Lesson Plan
  - 5 Themes Current Event Activity Directions
  - 5 Themes Current Event Activity Guide

- GEO Solution 3 Technology
  - Going Green Global Warming Project Lesson Plan
  - Going Green Global Warming Project Directions
  - Going Green Global Warming Project Rubric

- GEO Solution 4 Historical Geography
  - When Yellowstone Explodes Jigsaw Lesson Plan
  - When Yellowstone Explodes Jigsaw Lesson Readings
  - When Yellowstone Explodes Jigsaw Lesson Student Sheet

- GEO Solution 5 Hands-On
  - Destination: Road Trip North America Lesson Plan
  - Destination: Road Trip North American Directions
  - Destination: Road Trip North America Rubric

- GEO Solution 6 Student Interest
  - Interest Survey
  - Semester Survey

- GEO PowerPoint Presentation Slides
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### 1. History Skills

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<td>Skill reading for information</td>
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<td>Practice different note-taking strategies</td>
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<td>Understand the concept of annotation and use the skill</td>
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<td><strong>Test Taking strategies &amp; Question Analysis</strong></td>
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<td>Refer to the reading passage multiple times prior to answering the question</td>
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<td>Identify the key words in a question through annotation</td>
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<td>Eliminate incorrect options and distractors on multiple choice test questions</td>
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### UNIT: 1 Physical and Human Geography

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<td>Explain the various tools geographers use to understand the world.</td>
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<td>Indentify and explain the 5 Themes of Geography.</td>
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<td>Understand the physical processes and impact of the elements that affect the earth’s crust.</td>
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<td>Decipher the theories of earth’s formation.</td>
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## UNIT: 1 Physical and Human Geography

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### Chapter 1: Climate and Ecosystems

- **RRC07**: Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives
  - **Standard 1.3**: How to analyze the spatial organization of people, places, and environments on Earth's surface.
  - **Standard 1.4**: How to analyze the characteristics and spatial distribution of ecosystems on Earth's surface.

- **Draw conclusions about cause and effect relationships**
- **Describe the connection of weather and climate by the relative position of the earth and sun**

- **Ch. 1 Quiz**
- **Unit 1 Exam**

### Drawing Conclusions from the Data-Based Image

- **RRC06**: Make simple inferences about how details are used in passages
  - **Standard 1.3**: How to analyze the spatial organization of people, places, and environments on Earth's surface.
  - **Standard 1.4**: How to analyze the characteristics and spatial distribution of ecosystems on Earth's surface.

- **Locate and define the world climate regions and their subtypes**
  - Tropical, Dry, Moderate, Continental, Polar, Highlands

- **Ch. 1 Quiz**
- **Unit 1 Exam**

### RRC05: Locate important details in more challenging passages

- **Standard 1.3**: How to analyze the spatial organization of people, places, and environments on Earth's surface.
  - **Standard 1.4**: How to analyze the characteristics and spatial distribution of ecosystems on Earth's surface.

- **Draw conclusions from the data-based image**
- **Understand and define the factors that influence the water cycle**
  - Convectional Precipitation, Geographic Precipitation, Frontal Precipitation, relation to bodies of water, elevation, relation to landforms

- **Ch. 1 Quiz**
- **Unit 1 Exam**

### WCP3: Maintain a focus on the general topic in the prompt throughout the essay and attempt a focus on the specific issue in the prompt

- **Standard 1.4**: How human actions modify the physical environment.

- **Analyze and evaluate sources to ensure credibility**
  - Identify and describe bias
  - Generate an argument based upon identified relationships and categories

- **Ch. 1 Quiz**
- **Unit 1 Exam**

### WCP3: Develop ideas by using some specific reasons, details, and examples

- **Standard 1.3**: How to analyze the spatial organization of people, places, and environments on Earth's surface.
  - **Standard 1.4**: How to analyze the characteristics and spatial distribution of ecosystems on Earth's surface.

- **Utilize the appropriate note-taking strategy without guidance or prompting**
  - **Recognize the components and location of various ecosystems**
    - Ecosystems, Biomes, Forests, Grasslands, Deserts, Tundras, and permafrost

- **Ch. 1 Quiz**
- **Unit 1 Exam**
### UNIT: Physical and Human Geography

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**What is your GEO? 28**
## UNIT: 1 Physical and Human Geography

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<td>Chapter 4 Resources and Land Use</td>
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<td>RCC07 Identify clear cause-effect relationships in uncomplicated passages</td>
<td>Standard V.6 The changes that occur in the meaning, use, distribution, and importance of resources.</td>
<td>Draw conclusions about cause and effect relationships</td>
<td>Identify the difference between renewable and nonrenewable resources. Natural resources, fossil fuels</td>
<td>Ch. 4 Quiz Units 1 Exam</td>
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<td>WCE: Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt.</td>
<td>Standard V.6 How physical systems affect human systems.</td>
<td>Identify and describe bias. Synthesize the ideas together.</td>
<td>Learn what energy sources are available to individuals and nations. Nuclear energy, solar energy, geothermal energy, water power, wind power</td>
<td>Ch. 4 Quiz Units 1 Exam</td>
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<td>RFSo6 Locate and interpret details in complex passages</td>
<td>Standard V.6 How physical systems affect human systems. Standard V.6 The changes that occur in the meaning, use, distribution, and importance of resources.</td>
<td>Annotate various readings without guidance or prompting</td>
<td>Categorize the four different economic activities. Primary, secondary, tertiary, and quaternary activities. subsistence farming, cottage industries, commercial industries</td>
<td>Ch. 4 Quiz Units 1 Exam</td>
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<td>RCC07 Identify clear cause-effect relationships in uncomplicated passages</td>
<td>Standard IV.10 The patterns and networks of economic interdependence on Earth’s surface. Standard V.6 The changes that occur in the meaning, use, distribution, and importance of resources.</td>
<td>Draw conclusions about cause and effect relationships</td>
<td>Describe the significance of trade to the global economy.</td>
<td>Ch. 4 Quiz Units 1 Exam</td>
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<td>WCL06 Show adequate use of language to communicate by correctly employing many of the conventions of standard English grammar usage, and mechanics, but with some distracting errors that may occasionally impede understanding, using appropriate vocabulary, using some varied kinds of sentence structures to vary pace.</td>
<td>Standard VI.18 How to apply geography to interpret the present and plan for the future.</td>
<td>Utilize the appropriate note-taking strategy without guidance or prompting.</td>
<td>Identify the factors that determine a country’s level of development. GDP</td>
<td>Ch. 4 Quiz Units 1 Exam</td>
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<td>RDM05 Understand the overall approach taken by an author or narrator in more challenging passages</td>
<td>Standard 1.1 How to use mental maps to organize information about people, places, and environments in a spatial context.</td>
<td>Eliminate incorrect options and distances on multiple choice test questions.</td>
<td>Assess the key concepts, identifications, and locations of Unit 1.</td>
<td>Units 1 Exam</td>
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# UNIT: 2 The United States and Canada

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<tr>
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<tr>
<td>RC504</td>
<td>Standard 1: How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.</td>
<td>Draw conclusions from the data-based image</td>
<td>Identify and label the significant physical and political locations of Canada and the United States</td>
<td>Map Ch. 5 Quiz Unit 1 Exam</td>
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<td>ECT200</td>
<td>Standard 1: How to apply geography to interpret the past.</td>
<td>Utilize APP ARTS, SOAPS, or some type of standardized source evaluation method.</td>
<td>Compare and contrast the histories of Canada and the United States.</td>
<td>Ch. 5 Quiz Unit 1 Exam</td>
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<td>RD501</td>
<td>Standard 1: How to apply geography to interpret the past.</td>
<td>Draw conclusions about cause and effect relationships</td>
<td>Learn how the landscape has changed through physical processes and environmental change.</td>
<td>Ch. 5 Quiz Unit 1 Exam</td>
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<td>RD502</td>
<td>Standard 3: The characteristics, distribution, and migration of human populations on Earth’s surface. Standard 4: The processes, patterns, and functions of human settlement.</td>
<td>Draw conclusions from the data-based image</td>
<td>Compare and contrast the population patterns of Canada and the United States.</td>
<td>Ch. 5 Quiz Unit 1 Exam</td>
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<td>WCL20</td>
<td>Standard 3: The characteristics, distribution, and migration of human population on Earth’s surface. Standard 4: How human actions modify the physical environment.</td>
<td>Utilize the appropriate note-taking strategy without guidance or prompting</td>
<td>Identify the climate variations of Canada and the United States and its impact on society.</td>
<td>Ch. 5 Quiz Unit 1 Exam</td>
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<td>RC503</td>
<td>Standard 1: How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.</td>
<td>Annotate various readings without guidance or prompting</td>
<td>Summarize the key economic activities and resources of the United States and Canada and their usage</td>
<td>Ch. 5 Quiz Unit 1 Exam</td>
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## UNIT: 2 The United States and Canada

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<tr>
<td>WCO9 Present a discernible introduction and conclusion with a little development.</td>
<td>Standard V:16 The changes that occur in the mapping, use, distribution, and importance of resources.</td>
<td>Synthesize the ideas together.</td>
<td>Explain how natural resources promote the economic success of the United States.</td>
<td>Ch. 6 Quiz Unit 2 Exam</td>
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<tr>
<td>RSSo Locate and interpret details in complex passages</td>
<td>Standard IV:12 How the forces of cooperation and conflict among people influence the division and control of the Earth's surface.</td>
<td>Annotate various readings without guidance or prompting</td>
<td>Identify how the transportation and communication systems in the United States relate to economic development and settlement patterns.</td>
<td>Ch. 6 Quiz Unit 2 Exam</td>
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<tr>
<td>RDSoG Locate important details in more challenging passages</td>
<td>Standard IV:12 The processes, patterns, and functions of human settlement.</td>
<td>Draw conclusions from the data-based image</td>
<td>Understand the relationship and connectedness between cities and urban areas.</td>
<td>Ch. 6 Quiz Unit 2 Exam</td>
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<td>RDSoG Locate important details in more challenging passages</td>
<td>Standard IV:12 The characteristics and spatial distribution of ecosystems on Earth's surface.</td>
<td>Draw conclusions from the data-based image</td>
<td>Demonstrate the significant ecosystems of the United States and Canada.</td>
<td>Ch. 6 Quiz Unit 5 Exam</td>
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<td>RCoG Identify clear cause-effect relationships in uncomplicated passages</td>
<td>Standard IV:11 The patterns and networks of economic interdependence on Earth's surface.</td>
<td>Draw conclusions about cause and effect relationships</td>
<td>Describe the connection between civil liberties and economic prosperity.</td>
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<th>College Readiness Standards</th>
<th>National Geography Standards</th>
<th>WTHS Social Studies Skills</th>
<th>Content Objectives</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCL1c Show adequate use of language to communicate by correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding, using appropriate vocabulary, using some varied kinds of sentence structures to vary pace.</td>
<td>Standard III.3 The characteristics, distribution, and migration of human populations on Earth's surface</td>
<td>Utilize the appropriate note-taking strategy without guidance or prompting</td>
<td>Define and understand the significance of a megalopolis and its connection to economic epicenters</td>
<td>Ch. 7 Quiz Unit 2 Exam</td>
</tr>
<tr>
<td>RFS3c Locate and interpret details in complex passages</td>
<td>Standard II.4 That people create regions to interpret Earth's complexity.</td>
<td>Annotate various readings without guidance or prompting</td>
<td>Identify how the climate, physical characteristics, and resources have defined each region of America, including the Northeast, South West, and Midwest, and affected its economy.</td>
<td>Ch. 7 Quiz Unit 2 Exam</td>
</tr>
<tr>
<td>WDF3 Maintain a focus on discussion of the specific topic and issues in the prompt throughout the text.</td>
<td>Standard V.1c: The changes that occur in the meaning, use, distribution, and importance of resources.</td>
<td>Delineate the relevancy of research to a specific topic.</td>
<td>Identify how historically the Northeast became an early industrial leader while the South became an agricultural epicenter.</td>
<td>Ch. 7 Quiz Unit 2 Exam</td>
</tr>
<tr>
<td>WDF4 Present a thesis that establishes a focus on the writer's position on the issue.</td>
<td>Standard V.3c: The changes that occur in the meaning, use, distribution, and importance of resources.</td>
<td>Generate an argument based upon identified relationships and categories</td>
<td>Understand why historically the Northeast became an early industrial leader while the South became an agricultural epicenter.</td>
<td>Ch. 7 Quiz Unit 2 Exam</td>
</tr>
<tr>
<td>REM1c Infer the main idea or purpose of more challenging passages or their paragraphs</td>
<td>Standard IV.1a: The processes, patterns, and functions of human settlement.</td>
<td>Utilize APPARTS, SOAPs, or some type of standardized source evaluation method.</td>
<td>Explain how the abundance or scarcity of water resources affect natural vegetation and human practices in the West.</td>
<td>Ch. 7 Quiz Unit 2 Exam</td>
</tr>
</tbody>
</table>
## UNIT: 2 The United States and Canada

<table>
<thead>
<tr>
<th>College Readiness Standards</th>
<th>National Geography Standards</th>
<th>WTHS Social Studies Skills</th>
<th>Content Objectives</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>WDLa. Show competent use of languages to communicate ideas by correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding, using some precise and varied vocabulary; using several kinds of sentence structure to vary pace and to support meaning.</td>
<td>Standard V.6 The changes that occur in the meaning, use, distribution, and importance of resources.</td>
<td>Utilize the appropriate note-taking strategy without guidance or prompting</td>
<td>Identify the main economic activities of Canada and their relation to population patterns - Province, maritime.</td>
<td>Ch. 8 Quiz, Unit 1 Exam</td>
</tr>
<tr>
<td>RFSa. Locate and interpret details in complex passages</td>
<td>Standard 11.4 The physical and human characteristics of places</td>
<td>Annotate various readings without guidance or prompting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WDDe. Develop most ideas fully, using some specific and relevant reasons, details, and examples.</td>
<td>Standard IV.3 Map, the forces of cooperation and conflict among people influence the division and control of Earth’s surface.</td>
<td>Generate an argument based upon identified relationships and categories</td>
<td>Learn how climate and location has impacted the development of Canada’s regions including the Atlantic Provinces, Great Lakes – St. Lawrence Provinces, Prairie Provinces and British Columbia, and the Northern Territories. - Lock bedrock</td>
<td>Ch. 8 Quiz, Unit 1 Exam</td>
</tr>
<tr>
<td>WEPa. Develop several ideas fully, using specific and relevant reasons, details and examples</td>
<td>Standard IV.13 The patterns and networks of economic interdependence on Earth’s surface.</td>
<td>Utilize the appropriate note-taking strategy without guidance or prompting</td>
<td>Understand the economic relationship between Canada and the United States to the rest of the world - NAFTA, customs, tariff</td>
<td>Ch. 8 Quiz, Unit 1 Exam</td>
</tr>
<tr>
<td>REMa. Understand the overall approach taken by an author or narrator in more challenging passages.</td>
<td>Standard I.1 How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.</td>
<td>Eliminate incorrect options and distractors on multiple choice test questions</td>
<td>Assess the key concepts, identifications, and locations of Unit 1</td>
<td>Unit 1 Exam</td>
</tr>
</tbody>
</table>

What is your GEO? 33
<table>
<thead>
<tr>
<th>College Readiness Standards</th>
<th>National Geography Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCS4: Make simple inferences about how details are used in passages</td>
<td>Standard 11: How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.</td>
</tr>
<tr>
<td>WEPs: Develop several ideas fully, using specific and relevant reasons, details, and examples</td>
<td>Standard V.15: How physical systems affect human systems.</td>
</tr>
<tr>
<td>RDDs: Locate important details in more challenging passages</td>
<td>Standard V.5: The physical and human characteristics of places.</td>
</tr>
<tr>
<td>WDEss: Show competent use of languages to communicate ideas by correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding, using some precise and varied vocabulary, using several kinds of sentence structure to vary pace and to support meaning.</td>
<td>Standard IV.11: The patterns and networks of economic interdependence on Earth's surface.</td>
</tr>
<tr>
<td>RDCs: Identify clear cause-effect relationships in more challenging passages</td>
<td>Standard V.16: The changes that occur in the meaning, use, distribution, and importance of resources.</td>
</tr>
<tr>
<td>RPSc1: Locate and interpret details in complex passages</td>
<td>Standard III.5: The characteristics, distribution, and migration of human populations on Earth's surface.</td>
</tr>
<tr>
<td>WEPs: Develop several ideas fully, using specific and relevant reasons, details, and examples</td>
<td>Standard IV.12: The patterns and networks of economic interdependence on Earth's surface.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WTHS Social Studies Skills</th>
<th>Content Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draw conclusions from the database image</td>
<td>Identify and label the significant physical and political locations of Latin America</td>
</tr>
<tr>
<td>Utilize the appropriate note-taking strategy without guidance or prompting</td>
<td>Compare and contrast the colonial history of the Latin American countries.</td>
</tr>
<tr>
<td>Draw conclusions from the database image</td>
<td>Understand the impact of the physical environment, climate, and plate tectonics on Latin American countries.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment</th>
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<tbody>
<tr>
<td>NAD Ch. 3 Quiz Unit 3 Exam</td>
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<tr>
<td>Ch. 5 Quiz Unit 3 Exam</td>
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<td>Ch. 5 Quiz Unit 3 Exam</td>
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| What is your GEO? 34 |
## UNIT: Latin America

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<tr>
<th>College Readiness Standards</th>
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<th>WTHS Social Studies Skills</th>
<th>Content Objectives</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECEs Understand implied or subtly stated cause-effect relationships in more challenging passages</td>
<td>Standard V1.5 How physical systems affect human systems.</td>
<td>Draw conclusions about cause and effect relationships</td>
<td>How does the physical environment impact populations of Mexico? Plateau, peninsula, sinihole</td>
<td>Ch. 10 Quiz Unit 3 Exam</td>
</tr>
<tr>
<td>RF5c Locate and interpret details in complex passages</td>
<td>Standard V1.4 How to analyze the spatial organization of people, places, and environments on Earth’s surface.</td>
<td>Annotate various readings without guidance or prompting</td>
<td>Identify the differences between the four coastal plains regions: irigation</td>
<td>Ch. 10 Quiz Unit 3 Exam</td>
</tr>
<tr>
<td>WDLo Show competent use of languages to communicate ideas by: correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding, using some precise and varied vocabulary, using several kinds of sentence structure to vary pace and to support meaning.</td>
<td>Standard V1.7 How to apply geography to interpret the past</td>
<td>Utilize the appropriate note-taking strategy without guidance or prompting</td>
<td>Understand the rise of democracy in Mexico: Haciendas, land redistribution, ejido, subsistence farming, latifundio</td>
<td>Ch. 10 Quiz Unit 3 Exam</td>
</tr>
<tr>
<td>WEOc: Provide unity and coherence throughout the essay, often with a logical progression of ideas.</td>
<td></td>
<td>Generate an argument based upon identified relationships and categories</td>
<td>Understand the social concerns that impact Mexico today: Migrant worker, maquiladora</td>
<td>Ch. 10 Quiz Unit 3 Exam</td>
</tr>
<tr>
<td>WEPg: Develop several ideas fully, using specific and relevant reasons, details, and examples</td>
<td>Standard IV.51 The patterns and networks of economic interdependence on Earth’s surface</td>
<td>Utilize the appropriate note-taking strategy without guidance or prompting</td>
<td>Learn about the significant characteristics of the Mexican economy</td>
<td>Ch. 10 Quiz Unit 3 Exam</td>
</tr>
</tbody>
</table>
### UNIT: Latin America

<table>
<thead>
<tr>
<th>College Readiness Standards</th>
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</thead>
</table>
| *WEL*: Show effective use of language to clearly communicate ideas by correctly employing most conventions of standard English grammar, usage, and mechanics, with just a few, if any, errors, using precise and varied vocabulary, using a variety of kinds of sentence structure to vary pace and to support meaning. | *Standard VI.6*: How to apply geography to interpret the present and plan for the future | *Utilize the appropriate note-taking strategy without guidance or prompting* | *Understand the landforms and climates of Central America and the Caribbean*  
- Isthmus, archipelago, coral islands, windward, leeward | Ch. 11 Quiz Unit 3 Exam |
| *WEP*: Show effective movement between general and specific ideas and examples | *Standard VI.6*: How to apply geography to interpret the present and plan for the future | *State and effectively answer a project’s research question* | *Identify the demographic diversity and ethnic groups of Central America and the Caribbean* | Ch. 11 Quiz Unit 3 Exam |
| *ECT*: Determine relevancy when presented with a variety of sentence-level details | *Standard VI.7*: How to apply geography to interpret the past. | *Utilize APARTS, SOAPS, or some type of standardized source evaluation method* | *Understand how the social and economic conditions in Central America and the Caribbean led to political conflicts past and present*  
- Guerilla | Ch. 11 Quiz Unit 3 Exam |
| *WES*: Provide unity and coherence throughout the essay, often with a logical progression of ideas | *Standard III.8*: The characteristics, distribution, and migration of human populations on Earth’s surface.  
*Standard IV.12*: The processes, patterns, and functions of human settlement. | *Generate an argument based upon identified relationships and categories* | *Understand the causes and effects of the population distribution and migration of Central America and the Caribbean* | Ch. 11 Quiz Unit 3 Exam |
### UNIT: 3 Latin America

<table>
<thead>
<tr>
<th>College Readiness Standards</th>
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<th>WTHS Social Studies Skills</th>
<th>Content Objectives</th>
<th>Assessment</th>
</tr>
</thead>
</table>
| RES05 Use details from different sections of some complex informational passages to support a specific point or argument | Standard 1.3 How to analyze the spatial organization of people, places, and environments on Earth’s surface. | Draw conclusions from the data-based image.                                                                                                     | Identify how environment challenges impacts each region of Brazil including the northeast, southeast, highlands, and Amazon River basin.  
  • Escarpment, serra, deforestation, ecotourism                                                                                       | Ch. 12 Quiz Unit 3 Exam                                                                                     |
| RES05 Use details from different sections of some complex informational passages to support a specific point or argument | Standard IV.a. The processes, patterns, and functions of human settlement.                  | Draw conclusions from the data-based image.                                                                                                     | Identify how urbanization impacts each region of Brazil including the northeast, southeast, highlands, and Amazon River basin.  
  • Favelas                                                                                                                                  | Ch. 12 Quiz Unit 3 Exam                                                                                     |
| ETO: Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal. | Standard IV.a. The patterns and networks of economic interdependence on Earth’s surface.  
  Standard V.6 The changes that occur in the meaning, use, distribution, and importance of resources. | Annotate various readings without guidance or prompting.                                                                                       | Identify how the economy differs based on government influences throughout each region of Brazil including the northeast, southeast, highlands, and Amazon River basin.  
  • Plantation, gancho                                                                                                                   | Ch. 12 Quiz Unit 3 Exam                                                                                     |
| RES05: Understand implied or subtly stated cause-effect relationships in more challenging passages | Standard IV.a. How human actions modify the physical environment.                            | Draw conclusions about cause and effect relationships.                                                                                          | Understand how economic development contributes to environmental change.                                                                                                                                                    | Ch. 12 Quiz Unit 3 Exam                                                                                     |
## UNIT: 3 Latin America

<table>
<thead>
<tr>
<th>College Readiness Standards</th>
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<th>WTHS Social Studies Skills</th>
<th>Content Objectives</th>
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</thead>
</table>
| WD1 To show competent use of language to communicate ideas by: correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding, using some precise and varied vocabulary, using several kinds of sentence structure to vary pace and to support meaning. | Standard V.1.7 How to apply geography to interpret the past | Utilize appropriate note-taking strategy without guidance or prompting | Identify the historical roots of the cultural anomalies of South America  
- Brazil, Guyana, French Guiana | Ch. 13 Quiz  
Unit 3 Exam |
| RE5c Use details from different sections of some complex informational passages to support a specific point or argument | Standard V.4.5 How physical systems affect human systems | Draw conclusions from the data-based image | Understand how physical environment and climate influence economies and populations throughout South America  
- Llanos, altiplanos, pampas, selva, pampas, cordilleras, baunke, estuary, piedmont, gauchos | Ch. 13 Quiz  
Unit 3 Exam |
| RE6c Understand implied or subtly stated cause-effect relationships in more challenging passages | Standard V.4.5 How physical systems affect human systems | Draw conclusions about cause and effect relationships | Identify the characteristics that impact the success of agriculture throughout South America  
- Campesinos | Ch. 13 Quiz  
Unit 3 Exam |
| RE6c Understand implied or subtly stated cause-effect relationships in more challenging passages | Standard IV.11 The processes, patterns, and functions of human settlement. | Draw conclusions about cause and effect relationships | Understand how the physical environment and climate influence populations throughout South America  
- Andes Mountains, Amazon River, Patagonia | Ch. 13 Quiz  
Unit 3 Exam |
| ED To identify the focus of a simple essay, applying the knowledge to add a sentence that sharpens the focus or to determine if an essay has met a specified goal. | Standard V.1.8 How to apply geography to interpret the present and plan for the future | Annotate various readings without guidance or prompting | Compare and contrast the politics of the countries throughout South America. | Ch. 13 Quiz  
Unit 3 Exam |
| RDM04 Understand the overall approach taken by an author or narrator in more challenging passages | Standard L.3 How to analyze the spatial organization of people, places, and environments on Earth’s surface. | Eliminate incorrect options and distracters on multiple-choice test questions | Assess the key concepts, identifications, and locations of Unit 3. | Unit 3 Exam |
5 Themes Current Event Activity

Teacher: Rebecca Haapanen

Grade Level: 9th - 12th grade Geography

Lesson Summary: In small groups, students will further research the five themes of geography by applying them to real life events. Using exclusively reputable websites, students will locate a current event about their chosen theme of geography. After reading and researching additional information about the event, students will brainstorm their ideas, then write a reflection and summary based on the article and its connection to the five themes of geography.

Curriculum Connection: This lesson fits into Unit 1 Physical Geography

Time Needed: 2-45 minute class periods

Lesson Status: Has been implemented as an addendum activity for the past three years in Geography I and is now officially a part of Geography I curriculum.

Materials Needed:
1. Computer Lab
2. Access to reputable news outlets
3. MS Word
4. Activity direction sheet with rubric

National Geography Standards:
- Standard 14 How Human Actions Modify the Physical Environment
- Standard 15 How Physical Systems Affect Human Systems
- Standard 18 How to Apply Geography to Interpret the Present and Plan for the Future

Geospatial Thinking Objectives:
- Location, Condition, Aura

Starting the Lesson:
1. Pre-Assessment
   a. Students will review the five themes of geography and will provide examples of each theme
   b. Discuss the activities students completed associated with each theme

The Lesson:
1. Pass out activity direction sheet
2. Explain the significance/purpose of activity
3. Students will work the remaining class period in the computer lab on their assignment
End the Lesson:
1. After students have completed their write-ups, student will share their current event with the class.
2. Post-Assessment
   a. Students’ understanding of the content will be assessed through the quality of analysis and connection to the five themes that will be evident through their writing.
   b. Unit Exam 1

References:
- www.cnn.com
- www.msnbc.msn.com
- www.usatoday.com
- www.nytimes.com
- www.npr.org
- www.reuters.com/news
- www.usnews.com
- www.time.com
- www.nationalgeographic.com
5 Themes Current Event Activity
Chapter 1 Exploring Geography

Directions

1. Choose 1 theme of the 5 themes of geography
2. Using exclusively a site listed below, locate a current event about your chosen theme
   a. Current event must be discuss a recent problem/issue associated with your theme
   b. Print article in "print" format from site to turn in
   c. Event must have occurred in the last three months
3. Be sure to read and understand the current event, if not, choose a new article.
4. **Research anything in the article that you are unsure of!! (names, events, locations, etc.)
5. Complete the current event guide on the reverse side
6. Use the current event guide to help you generate a write up about your article. See reverse side for additional directions.
7. Format
   a. Include title of article
   b. Author
   c. Date published
   d. Pictures (3) regarding topic
   e. Easy to read font/size
   f. 1 page in length
   g. Organized!
8. Be prepared to share current event and write up in class.

Reputable Websites

- [www.cnn.com](http://www.cnn.com)
- [www.msnbc.msn.com](http://www.msnbc.msn.com)
- [www.usatoday.com](http://www.usatoday.com)
- [www.nytimes.com](http://www.nytimes.com)
- [www.npr.org](http://www.npr.org)
- [www.usnews.com](http://www.usnews.com)
- [www.time.com](http://www.time.com)
- [www.nationalgeographic.com](http://www.nationalgeographic.com)

5 Themes Current Event Rubric

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Use</td>
<td>Successfully uses suggested internet links to find information</td>
<td>Usually able to use suggested internet links to find information</td>
<td>Occasionally able to use suggested internet links to find</td>
<td>Needs assistance or supervision to use suggested internet links</td>
</tr>
<tr>
<td></td>
<td>and navigates within these sites easily without assistance.</td>
<td>and navigates within these sites easily without assistance.</td>
<td>find information and navigates within these sites easily without</td>
<td>and/or to navigate within these sites.</td>
</tr>
<tr>
<td>Quality of Information</td>
<td>Information in reflection clearly relates to the main topic.</td>
<td>Information in reflection clearly relates to the main topic.</td>
<td>Information in reflection clearly relates to the main topic.</td>
<td>Information in reflection has little or nothing to do with the</td>
</tr>
<tr>
<td></td>
<td>It includes several supporting details and/or examples.</td>
<td>It includes several supporting details and/or examples.</td>
<td>It includes several supporting details and/or examples.</td>
<td>main topic.</td>
</tr>
<tr>
<td>Organization</td>
<td>Information is very organized with well-constructed paragraphs</td>
<td>Information is organized with well-constructed paragraphs.</td>
<td>Information is organized, but paragraphs are not well-constructed.</td>
<td>The information appears to be disorganized. 8)</td>
</tr>
<tr>
<td></td>
<td>and subheadings.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sources</td>
<td>All sources (information and graphics) are accurately documented</td>
<td>All sources (information and graphics) are accurately documented,</td>
<td>All sources (information and graphics) are accurately documented,</td>
<td>Some sources are not accurately documented</td>
</tr>
<tr>
<td></td>
<td>in the desired format.</td>
<td>but a few are not in the desired format.</td>
<td>but many are not in the desired format.</td>
<td></td>
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</tbody>
</table>
Current Event Guide

Directions: After you have found an article and read it, please complete the following.

1. Article Title: ________________________________________________________________

2. Article Author: ______________________________________________________________

3. Date of Issue/Article: _______________________________________________________

4. Publication Title: ____________________________________________________________

5. Summary of Article:

6. Your reaction/perspective:
Teacher: Rebecca Haapanen

Grade Level: 9th - 12th grade Geography

Lesson Summary: Students will research and present green solutions to help their school reduce its carbon footprint. Research will focus on solutions that are available for schools and to see what schools are actually implementing to get ideas. Students will present their green solutions through a portfolio and PowerPoint presentation to school administrators who will vote on the best plan to adapt for the school to become more eco-conscious.

Curriculum Connection: This lesson fits into Unit 1 Physical Geography

Time Needed: 7-45 minute class periods

Lesson Status: Has been implemented as an addendum project for the past two years in Geography I and is now officially a part of Geography I curriculum.

Materials Needed:
1. Computer Lab
2. Word processor program
3. Portfolio materials
4. MS PowerPoint
5. MS Word
6. Activity direction sheet with rubric

National Geography Standards:
- Standard 8 The Characteristics and Spatial Distribution of Ecosystems on Earth’s Surface
- Standard 14 How Human Actions Modify the Physical Environment

Geospatial Thinking Objectives:
- Aura, Spatial Model

Starting the Lesson:
1. Pre-Assessment
   a. Students will discuss the previous lessons and activities regarding Global Warming to review the key information

The Lesson:
1. Pass out activity direction sheet
2. Explain the significance/purpose of activity
3. Students will work the next six days on the activity in their groups in the computer lab

**End the Lesson:**

1. After students have completed their research and assembling the portfolios, students will present their projects to the class and to the administrators to decide the applicability of their Going Green plan at the school.

2. Post-Assessment
   a. Students’ understanding of the content will be assessed through the quality of analysis and connection to related content that will be evident through their portfolio and presentation.
   b. Unit Exam 1

**References:** None
What is your GEO?
A Geographic Education Outlook for the 21st Century Student

Global Warming Unit

Group Presentation

WTHS Goes Green Pitch and Portfolio

**Purpose:** To research and present green solutions for Warren Township High School to help reduce their carbon footprint.

**Directions:** Synthesize all elements you have accumulated thus far and apply them to your final project. Pretend you are a “Green” Company that creates Going Green plans for schools world-wide. Your job is to create a Going Green Plan for WTHS to adopt to assist with their efforts to reduce their schools’ carbon footprint. Criteria for the plan is below.

**Research:** You will use the internet to research what other schools around the world are doing to go “green” or assist to curb global warming. Site all sources in MLA format. You will need to research to gain ideas about skills, ideas, methods, plans that you can incorporate into your own “green” plan for WTHS.

**Pitch:** Your pitch to the WTHS administrator should be professional, organized, realistic, visually appealing, concise, and CHEAP! District #12 is hurting for money and is not able to dedicate funds to non-essential projects. Make this project ESSENTIAL to WTHS with inexpensive solutions.

**Part 1: Criteria for Anti-Warming Plan**

1. **Plan Cover sheet**
   - Group Names
   - Name of Plan
   - Title of company
   - Company mission statement (what does your company do? Purpose?)
   - Name of school to target for plan

2. **Written Plan (each has a separate tab)**
   - Title Page
   - Purpose for choosing that school- Why Warren?
   - Purpose (why should WTHS adopt your plan? Results school will witness after plan is adopted)
   - Goals of the plan
   - Method to achieve goal (how will the plan be implemented?)
   - Supplies needed for success

   ✤ Communication Plan- how to spread the info and educate the school and school community to support your plan
   ✤ Summary

3. **Plan Reflection- only given to teacher**
   - What are some disadvantages to your plan?
   - What will happen if your school or any school you target declines your plan
   - Do you think your plan will work or is applicable to today’s schools around the country?
   - Will some schools be more successful than others? Explain.

4. **Work Cited Page**
   - MLA style
   - 6 sources minimum used

---

**Group 1**
Ashley
Cassie
Sonu
Megan

**Group 2**
Patrick
Shawn
Sabrina
David

**Group 3**
Rodrigo
Evan
Bayan
Xavier

**Group 4**
Rodney
Conrad
Nick
Jared

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Due Date
Research Report: Global Warming

Student Name: ___________________________ /100

<table>
<thead>
<tr>
<th></th>
<th>Category</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
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<tbody>
<tr>
<td><strong>Group Portfolio</strong></td>
<td>/ 30</td>
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<tr>
<td>Organization</td>
<td>Information is very organized with well-constructed paragraphs and subheadings.</td>
<td>all except</td>
<td>all except</td>
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<tr>
<td>Content</td>
<td>Research is evident, content is high-quality, adequate quality</td>
<td>all except</td>
<td>all except</td>
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<tr>
<td>Sources</td>
<td>All 6 sources minimum are documented in MLA format.</td>
<td>all except</td>
<td>all except</td>
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<td>Mechanics</td>
<td>No grammatical, spelling or punctuation errors.</td>
<td>Almost no grammatical, spelling or punctuation errors.</td>
<td>A few grammatical spelling, or punctuation errors.</td>
<td>Many grammatical, spelling, or punctuation errors.</td>
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<td>Cover Sheet</td>
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<td>all except</td>
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<tr>
<td>Plan Reflection</td>
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<td>all except</td>
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<tr>
<td>Written Plan</td>
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**Individual Criteria** /50

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<td>Task Sheets</td>
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**Group Participation** /20

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<tr>
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<th>4</th>
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<tr>
<td>Working with Others</td>
<td>Almost always listens to, shares with, and supports the efforts of others. Tries to keep people working well together.</td>
<td>Rarely listens to, shares with, and supports the efforts of others. Often is not a good team player.</td>
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<tr>
<td>Focus on the task</td>
<td>Consistently stays focused on the task and what needs to be done. Very self-directed.</td>
<td>Rarely focuses on the task and what needs to be done. Lets others do the work.</td>
<td>Consistently stays focused on the task and what needs to be done. Other group members can count on this person.</td>
<td>Occasionally stays focused on the task and what needs to be done. Other group members need to remind this person to stay focused.</td>
<td>Consistently stays focused on the task and what needs to be done. Other group members can count on this person.</td>
<td></td>
</tr>
<tr>
<td>Preparedness</td>
<td>Brings needed materials to class and is always ready to work.</td>
<td>Almost always brings needed materials but sometimes needs to settle down and get to work.</td>
<td>Almost always brings needed materials to class and is ready to work.</td>
<td>Occasionally brings needed materials to class and is ready to work.</td>
<td>Consistently brings needed materials to class and is always ready to work.</td>
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</tr>
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What is your GEO?
A Geographic Education Outlook for the 21st Century Student
Teacher: Rebecca Haapanen

Grade Level: 9th-12th grade Geography

Lesson Summary: Students will be circulating throughout the room visiting different stations while continuing a study on volcanoes. The activity surrounds the past, present, and future of nature’s effects of shifting plates beneath the Earth’s surface. This independent activity includes seven different stations with a culminating activity for homework. A variety of learning styles are included in this activity.

Curriculum Connection: This lesson fits into Unit 1 Physical Geography

Time Needed: 2-45 minute class periods

Lesson Status: Has been implemented as an addendum activity for the past year in Geography I and is now officially a part of Geography I curriculum.

Materials Needed:
1. Jigsaw Activity direction sheet
2. Jigsaw Activity accompanying readings

National Geography Standards:
- Standard 7 They Physical Processes that Shape the Patterns of Earth’s Surface
- Standard 15 How Physical Systems Affect Human Systems

Geospatial Thinking Objectives:
- Aura, Connection, Region

Starting the Lesson:
1. Pre-Assessment
   a. Discussion from the previous lessons about physical processes including how they occur and their effects.

The Lesson:
1. Pass out activity direction sheet and readings
2. Describe the set-up of the room including the accompanying seven stations
3. Explain the significance/purpose of activity
4. Students will work the remaining time on the activity independently in the classroom
End the Lesson:
1. After students have completed their jigsaw activity, the class will have a discussion about the content learned.
2. Post-Assessment
   a. Students’ understanding of the content will be assessed through the quality of analysis and connection to related content that will be evident through their worksheet, discussion and written reflection.
   b. Unit Exam 1

References: None
When Yellowstone Explodes

Published: August 2009

Beneath Yellowstone Park a monstrous plume of hot rock is causing the earth to heave and tremble. Past volcanoes have erupted with a thousand times the power of Mount St. Helens. The future is anybody’s guess.

By Joel Achenbach
On August 29, 1870, a 30-year-old Army lieutenant named Gustavus Doane, part of an exploratory expedition in the Yellowstone region in the territory of Wyoming, scrambled his way to the summit of Mount Washburn above the Yellowstone River. Looking to the south, he noticed that something was missing from a stretch of the Rocky Mountains: mountains. For miles and miles, the only elevations were in the distance, forming parentheses around a huge forested basin. Doane saw only one way to explain the void. “The great basin,” he wrote, “has been formerly one vast crater of a now extinct volcano.”

The lieutenant was right: Yellowstone is a volcano, and not just any volcano. The oldest, most famous national park in the United States sits squarely atop one of the biggest volcanoes on Earth. Doane was wrong, however, in one crucial respect. Yellowstone’s volcano is not extinct. To an unsettling degree, it is very much alive.

There are volcanoes, and then there are supervolcanoes. The latter have no agreed-on definition—the term was popularized in a BBC documentary in 2000—but some scientists use it to describe explosions of exceptional violence and volume. The U.S. Geological Survey applies the term to any eruption ejecting more than 1,000 cubic kilometers (240 cubic miles) of pumice and ash in a single event—more than 50 times the size of the infamous Krakatau eruption of 1883, which killed more than 36,000 people. Volcanoes form mountains; supervolcanoes erase them. Volcanoes kill plants and animals for miles around; supervolcanoes threaten whole species with extinction by changing the climate across the entire planet.

No supervolcano has erupted in recorded human history, but geologists have pieced together what an explosion must have been like. First, a plume of heat wells up from deep within the planet and melts rock just beneath the crust of the Earth, creating a vast chamber filled with a pressurized mix of magma, semisolid rock, and dissolved water vapor, carbon dioxide, and other gases. As additional magma accumulates in the chamber over thousands of years, the land above begins to dome upward by inches. Fractures open along the dome’s edges, as if burglars were sawing a hole from beneath a wooden floor. When the pressure in the magma chamber is released through the fractures, the dissolved gases suddenly explode in a massive, runaway reaction. It’s like “opening the Coke bottle after you’ve shaken it,” says Bob Christiansen, a U.S. Geological Survey scientist who pioneered research on the Yellowstone volcano in the 1960s. With the magma chamber emptied, the surface collapses. The entire domed region simply
What is your GEO?
A Geographic Education Outlook for the 21st Century Student

falls into the planet, as though the Earth were consuming itself. Left behind is a giant caldera, from the
Spanish word for "cauldron." The "hot spot" responsible for the Yellowstone caldera has erupted dozens
of times in the past, going back some 18 million years. Since the hot spot is rooted deep in the Earth, and
the tectonic plate above it is moving southwest, ghostly Calderas from the more ancient explosions are
strung out like a series of gigantic beads across southern Idaho and into Oregon and Nevada, the
subsequent lava flows forming the eerie moonscapes of the Snake River Plain.

The last three super-eruptions have been in Yellowstone itself. The most recent, 640,000 years ago, was a
thousand times the size of the Mount St. Helens eruption in 1980, which killed 57 people in Washington.
But numbers do not capture the full scope of the mayhem. Scientists calculate that the pillar of ash from
the Yellowstone explosion rose some 100,000 feet, leaving a layer of debris across the West all the way to
the Gulf of Mexico. Pyroclastic flows—dense, lethal fogs of ash, rocks, and gas, superheated to 1,470
degrees Fahrenheit—rolled across the landscape in towering gray clouds. The clouds filled entire valleys
with hundreds of feet of material so hot and heavy that it welded itself like asphalt across the once
verdant landscape. And this wasn’t even Yellowstone’s most violent moment. An eruption 2.1 million
years ago was more than twice as strong, leaving a hole in the ground the size of Rhode Island. In
between, 1.3 million years ago, was a smaller but still devastating eruption.

Each time, the whole planet would have felt the effects. Gases rising high into the stratosphere would
have mixed with water vapor to create a thin haze of sulfate aerosols that dimmed sunlight, potentially
plunging the Earth into years of "volcanic winter." According to some researchers, the DNA of our own
species may pay witness to such a catastrophe around 74,000 years ago, when a supervolcano called Toba
erupted in Indonesia. The ensuing volcanic winter may have contributed to a period of global cooling
that reduced the entire human population to a few thousand individuals—a close shave for the human
race.

For all their violence, the supervolcanoes have left little behind beyond a faintly perceptible sense of
absence. The Yellowstone caldera has been eroded, filled in with lava flows and ash from smaller
eruptions (the most recent was 70,000 years ago) and smoothed by glaciers. Peaceful forests cover any
lingering scars. The combined effect makes it almost impossible to detect, unless you’ve got a good eye,
like Doane had, or a geologist whispering in your ear.

"You're seeing two-thirds of the entire caldera," says Bob Smith. "The size is so immense that
people don't appreciate it." Smith is a University of Utah geophysicist and a prominent
expert on the supervolcano at Yellowstone. We’re standing atop Lake Butte, an overlook at
the east end of Yellowstone Lake, one of the best places to see the caldera. But I don't see
it. I can see the lake spread out for miles beneath us and a few little hills to the north—old lava domes. But I can't follow the caldera rim visually because much of it is beneath the lake and because of the sheer scale of the thing—roughly 45
miles across. Like Doane atop Mount Washburn, I see only distant mountains on the horizon on either
side and between them, to the west, the "unmountains," the emptiness where the land swallowed itself in
the course of a few days.

The effects of the past eruptions are nevertheless profoundly felt in the present. The lodgepole pines that
dominate the park's forests are adapted to growing in nutrient-poor soils, like those in the Yellowstone
 Caldera. So too are the whitebark pines, whose nuts sustain grizzlies and black bears.

And of course, the land to this day is literally boiling over. The trout that riot in the rivers would not be
so abundant without the warming effects of the hydrothermal springs at the bottom of frigid Yellowstone
 Lake. The park roils with geysers, fumaroles, mud volcanoes, and other hydrothermal activity. Half the
geyser’s on the planet are in Yellowstone. The hydrothermal features change constantly in temperature
and behavior, with new ones popping up in the forests, spewing clouds of steam visible from airplanes,
exuding vapors that have been known to kill bison on the spot.

In spite of this "most violent gaseous ebullition," as one early explorer put it, the volcano beneath
Yellowstone was long thought to be extinct, as Doane believed, or at least in its dying days. Indeed, after
federal surveys in the late 19th century, the volcanic nature of Yellowstone received little scientific
scrutiny for decades. Then in the late 1950s, a young Harvard graduate student, Francis "Joe" Boyd,
became intrigued by the presence of a welded tuff—a thick layer of heated and compacted ash, which he
realized was a sign of pyroclastic flows from an explosive, geologically recent eruption.

In 1965 Bob Christiansen found a second distinct welded tuff; the next year he and
his colleagues identified a third. Using potassium-argon dating, they determined
that the three tuffs were the result of three distinct eruptions. Each created a giant
caldera, with the most recent eruption largely burying signs of the previous two.

Then one day in 1973, Bob Smith and a colleague were doing some work on Peale
Island, in the South Arm of Yellowstone Lake, when Smith noticed something odd:
Some trees along the shoreline were partially submerged and dying. He had
 worked in the area back in 1956 and was planning to use the same boat dock as on
the earlier trip. But the dock was also inundated. What was going on?

Intrigued, Smith set out to resurvey benchmarks that park workers had placed on
various roads throughout the park beginning in 1923. His survey revealed that the
Hayden Valley, which sits atop the caldera to the north of the lake, had risen by some 30 inches over the
intervening decades. But the lower end of the lake hadn't risen at all. In effect, the north end of the lake
had risen and tipped water down into the southern end. The ground was doming. The volcano was alive.

Smith published his results in 1979, referring in interviews to Yellowstone as "the living, breathing
caldera." Then in 1985, heralded by a "swarm" of mostly tiny earthquakes, the terrain subsided again.
Smith modified his metaphor: Yellowstone was now the "living, breathing, shaking caldera."

In the years since, Smith and his colleagues have used every trick they can devise to "see" beneath the
park. Gradually, the proportions and potential of the subterranean volcanic system have emerged. At the
shallowest level, surface water percolates several miles into the crust, is heated, and boils back up,
supplying the geysers and fumaroles. About five to seven miles deep is the top of the magma chamber, a
reservoir of partially melted rock roughly 30 miles wide. Basaltic magma is trapped inside the chamber
by denser, overlying rhyolitic magma, which floats on top of the liquid basalt like cream on milk. By
looking at the way sound waves created by earthquakes propagate through subsurface rock of varying densities, the scientists have discovered that the magma chamber is fed by a gigantic plume of hot rock, rising from the Earth's upper mantle, tilted downward to the northwest by 60 degrees, its base perhaps 400 miles below the surface. When the plume pumps more heat into the chamber, the land heaves upward. Small earthquakes allow hydrothermal fluids to escape to the surface, easing the pressure inside the chamber, which causes the ground to subside again. After the 1985 earthquake swarm, Yellowstone fell eight inches over the course of a decade or so. Then it rose again, faster this time. Since 2004, portions of the caldera have surged upward at a rate of nearly three inches a year, much faster than any uplift since close observations began in the 1970s. The surface continues to rise despite an 11-day earthquake swarm that began late in 2008, causing a flurry of apocalyptic rumors on the Internet. "We call this a caldera at unrest," Smith says. "The net effect over many cycles is to finally get enough magma to erupt. And we don't know what those cycles are."

So, the colossal question: Is it going to blow again? Some kind of eruption—perhaps a modest one like Mount Pinatubo’s in the Philippines, which killed 800 people in 1991—is highly likely at some point. The odds of a full, caldera-forming eruption—a cataclysm that could kill untold thousands of people and plunge the Earth into a volcanic winter—are anyone’s guess; it could happen in our lifetimes, or 100,000 years or more from now, or perhaps never. Bob Christiansen, now retired, suspects the supervolcano may be safely bottled up. For most of its history, the Yellowstone hot spot has formed calderas in the thin crust of the Basin and Range area of the American West. Now the hot spot is lodged beneath a much thicker crust at the crest of the Rockies.

"I think that the system has more or less equilibrated itself," says Christiansen. Then he quickly adds, "But that's an interpretation that would not stand up in court."
Supervolcano Raises Yellowstone, Fuels Geysers, Study Says

Scott Norris
for National Geographic News

March 1, 2006
Molten rock flowing beneath Yellowstone has been causing the national park to rise and fall, scientists say. Periodic uplifting and settling has occurred here over the last 15,000 years.

A new model helps explain the latest episode of rapid surface rise and increased geyser activity—from 1997 to 2003—in the volcanically active region in the western United States. Much of Yellowstone National Park lies in the crater of a massive volcano, formed in a landscape-altering eruption 640,000 years ago. The crater, or caldera, measures some 28 miles wide by 47 miles long (45 by 75 kilometers). Subsequent lava flows—most recently 70,000 years ago—filled in much of the blasted-out crater, disguising the area's volcanic identity (related site: volcano photos, facts, and virtual eruptions). Since the 1970s scientists have known that the Yellowstone volcano remains highly active. (See "Yellowstone Volcano: Is 'the Beast' Building to a Violent Tantrum?" [2001].)

But the precise relationship between volcanic activity deep underground and Yellowstone's well-known network of geysers and other geothermal features has long been a puzzle for geologists. Now a study by scientists with the U. S. Geological Survey (USGS) and the Yellowstone Volcano Observatory attributes changes in both surface terrain and geyser behavior to flows of magma, or molten rock, 9 miles (15 kilometers) below the Earth's surface. "We're not sure yet if this is a normal episode or not," said Charles Wicks, a geologist at the USGS Western Region headquarters in Menlo Park, California.

Wrinkles and Cracks
Using satellite-based radar, Wicks and his colleagues were able to map small changes in surface elevation continuously across a wide area. The new, detailed view of the Yellowstone crater shows a surface in constant motion, rising and falling in different locations and over fairly short intervals of time. From earlier surveys, scientists know that the caldera floor raised about 7 inches (18 centimeters) from 1976 to 1984 and then settled back about 5.5 inches (14 centimeters) from 1985 to 1995. Researchers later noted a vertical rise in the crater floor, beginning in 1995. The floor largely began sinking again by 1998. The new report, to be published in tomorrow’s edition of the journal Nature, focuses on an isolated area along the north rim of the crater that continued to rise while the crater floor was sinking. This localized uplift raised the ground level about 5 inches (13 centimeters) from 1997 to 2003. "This was something new," Wicks said. "We had never seen uplift under the caldera rim before."

At the same time thermal activity in and around the Norris Geyser Basin, near the uplifting-rim area, began moving into high gear. Steamboat Geyser, the world's largest, broke a nine-year silence with a series of eruptions from 2000 to 2003. Park officials had to close some hiking trails due to increasing
ground temperatures, and in 2003 a line of new steam vents appeared, roaring like jet engines. Wicks and his colleagues believe that a pulse of volcanic magma moving horizontally underground caused the complex rippling of the land surface and the unusual hydrothermal displays.

A New Model
The researchers’ theory is based on a mathematical model that helps explain the pattern of lifting revealed by the radar imaging. The land’s rise and fall over time, they say, can be attributed to variation in what may be a continuous flow of molten basalt. Basalt is cooled, hardened magma.

Wicks believes that in the 1997-to-2003 episode, an unusually large pulse of magma rose from deep underground and spread outward just beneath the caldera surface. “As it spreads it looks for a way out,” Wicks said. “A system of faults under the north rim provides a way for the magma to exit the caldera.” Outward movement of the magma pulse would cause the caldera floor to rise and then fall back, exactly as observed.

The continuing uplift of the caldera rim can be explained by the restricted size of the magma’s exit route. Wicks thinks a sort of underground bottleneck caused part of the north rim to continue rising. Forced through a narrowing passage, he says, the magma exerted a pressure that caused the rim to rise. Uplift in this relatively confined area may have opened new underground passages for steam and superheated water, causing the unusual geyser activity. "It's like bending a slab of clay. You see cracks form on the upper surface," Wicks said.

Park geologist Henry Heasler said that, while the new study is compelling, further tests of the model are needed. "What they have nailed is that an intrusion from the caldera up to the Norris area matches the ground deformation pattern," Heasler said. "It's a fascinating paper, but there are still competing hypotheses." For example, the surface changes may have been driven by flows of hot water and gas rather than magma. Heasler said one way to test this would be by taking precise temperature measurements at the land surface, which he and others plan to carry out.

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Directions: Today in class, you will be circulating throughout the room visiting different stations while continuing our study on volcanoes, one effect of Earth’s internal shifting through plate tectonics. This is an independent activity today, so spread yourselves out around the room at the different stations and move at your own pace. Be sure to visit all stations and answer all questions in complete sentences to receive maximum credit.

**Station A**
Directions: Use the laptop to take the 10 question Yellowstone National Park Quiz to see how much you already know about this area!

K: Quiz results ____/10

W: Brainstorm in the space below, describe what you want to find out about Yellowstone National Park in regards to its geothermal activity.
1. 
2. 
3. 
4. 

**Station B**
Directions: Use your resources at the station to identify the key facts about Yellowstone National Park.

1. Where is the park located?
   a. Absolute location: ______________________________
   b. Relative location: ______________________________

2. When did the park open? ______________________

3. Who first set aside this land to be protected? _______ When? _______ Why? _______

4. Why is it called Yellowstone? _______________________

5. How large is the park? _______________ Compared to which state/s?_________________

6. What specific types of animals could you see in Yellowstone? _______________________

7. How many tourists visit Yellowstone per year? ______________________

8. Describe one story from the early years of the park relating to why the National Park Service is necessary for regulation and park management.
________________________________________
________________________________________
Station C
Directions: View the YouTube video and answer the two reflection questions below.
http://www.youtube.com/watch?v=1Vn6kxfD3Ek
1. Describe in your own words what is happening in Yellowstone National Park?
2. What is causing these actions to occur?
3. What is your reaction to this?

Station D
Directions: Using the Line of Fire document, list three observations/connections below about Yellowstone's supervolcano.

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<thead>
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<th>Description</th>
<th>Significance</th>
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<tbody>
<tr>
<td>Fact 1</td>
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<td>Fact 2</td>
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<tr>
<td>Fact 3</td>
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Station E
Directions: For this exercise you will navigate a website through National Geographic on the laptop. Using the interactive When Yellowstone Explodes, click on “Go Below Yellowstone”.
1. Under “What happens next time” click on learn more. Read and follow the next prompts in the upper right. Briefly describe the different stages of a super-eruption.
2. Describe the earthquake storm. Hypothesize why this is significant.
3. Describe what is below Yellowstone using the scroll bar on the right to navigate through the different layers of Earth’s crust.
   a. Crust:
   b. Upper Mantle:
   c. Mantle:
   d. Lower Mantle:
What is your GEO?
A Geographic Education Outlook for the 21st Century Student

Station F
Directions: For this exercise, you will use the document The Yellowstone Eruptions. Read the document and compare the expanse of the previous eruptions in Yellowstone. When completed, answer the questions below.

1. Over what course of time have the eruptions occurred in Yellowstone National Park?

2. Compare the Mount St. Helens eruption in 1980 to the three eruptions caused by the plume beneath Yellowstone.

3. What effect did the debris and other pollutants have on the climate after these eruptions?

Station G

1. Analyze the expanse of the ash coverage from the previous Yellowstone eruptions and from Mt. St. Helens eruption. On the map below, using a different colored pencil for each, complete the following:
   a. Shade the greatest extent of ash coverage of the Mt. St. Helens eruption.
   b. Shade the greatest extent of the largest Yellowstone eruption
   c. Shade your hypothesize of how far the ash from the next explosion of Yellowstone will reach

2. Describe your hypothesis from above in the space below.
What is your GEO?
A Geographic Education Outlook for the 21st Century Student

H- Concluding Activity
Directions: Once you have returned to your seats, write a one page reflection on what you learned from this activity. Remember to write in complete sentences.
Teacher: Rebecca Haapanen

Grade Level: 9th-12th grade Geography

Lesson Summary: This two part project will increase students’ knowledge of the physical and human geography of North America. The Destination: Road Trip North America project includes the student completion of a manual and presentation about a chosen road trip destination in North America. Research must be conducted about the destination according to the project guidelines. Students will create a professional manual describing the trip, route, budget, pack list, etc.

Curriculum Connection: This lesson fits into Unit 2 North America

Time Needed: 7-45 minute class periods

Lesson Status: Has been implemented as an addendum activity for the past year in Geography I and is now officially a part of Geography I curriculum.

Materials Needed:
1. Project Direction Sheets
2. Computers
3. Internet
4. Printer
5. PowerPoint
6. MS Word

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
- Standard 4 The Physical and Human Characteristics of Places
- Standard 12 The Processes, Patterns and Functions of Human Settlement

Geospatial Thinking Objectives:
- Location, Connection, Region, Diffusion

Starting the Lesson:
1. Pre-Assessment
   a. Discussion from previous lessons about North America
   b. Discussion where you would travel domestically if you could
The Lesson:
1. Pass out project direction sheet and readings
2. Describe project
3. Explain the significance/purpose of project
4. Show examples (student samples) of past projects
5. Students will work the remaining time on the activity independently in the classroom

End the Lesson:
1. After students have completed their research and project, they will present their project presentations to the class
2. Post-Assessment
   a. Students’ understanding of the content will be assessed through the quality and depth of research conducted in their projects.
   b. Unit Exam 2

References:

Google Maps
Mapquest
Destination: Road Trip North America

Geography Project #2

Purpose: This two part project will increase students' knowledge of the physical and human geography of North America.

Directions: The Destination: Road Trip North America project is a two part project including a manual and presentation. In your assigned group, you will choose a road trip destination in North America to research, create a plan, and itinerary for your trip.

Road Trip Manual

1. Manual Format
   a. Must be bound and look professional like an automobile owners manual
   b. Must have tabs to separate sections see below (io)
   c. Must be logically organized
   d. Colorful. Creative
   e. Must include all the following

2. Manual Purpose
   a. To show critical thinking skills in developing your road trip
   b. To show mastery of cartography
   c. To learn about the physical and cultural geography of North America

3. Manual Sections
   a. Destination Rationale
   b. Directions
   c. Map
   d. Route Rationale
   e. Food Plan
   f. Transportation
   g. Contingency Plan
   h. Pack List
   i. Itinerary
   j. Budget

Examples of Group Tasks

1. Decide destination of road trip
2. Decide how you will get there
3. Decide the format of your manual
4. Decide the format of your presentation
5. Delegate tasks are tasks sheets

Examples of Individual Tasks

1. Food Plan
2. Contingency Plan
3. Itinerary
4. Research culture information about destination for presentation

Road Trip Presentation

1. Presentation Format
   a. May be a PowerPoint, website, series of posters, transparencies, video game, story, etc.

2. Presentation Purpose
   a. Primary: to educate the class about your destination
   b. Secondary: to briefly describe your road trip

3. Presentation Sections about DESTINATION
   a. Physical features
   b. Economic activity
   c. Natural Resources
   d. Government
   e. Education
   f. Capital and major cities
   g. Attractions
   h. Religion
   i. Language
   j. History
   k. Population Distribution
   l. Economics
   m. Map
   n. Purpose for choosing this location
What is your GEO?

A Geographic Education Outlook for the 21st Century Student

Destination: Road Trip North America

Geography Project

1. Destination Rationale
   a. Why did you choose this destination in North America?
   b. What does it have to offer?

2. Directions
   a. Include a complete description of the route you will take
      i. street/highway names, mileage between stops and total mileage, Scheduled stops: Hotels, restaurants, gas, attractions

3. Map
   a. must include a map of the U.S. with your route highlighted
   b. place a colored stars with a key of your scheduled stops
   c. must be as precise as possible! Do not list a McDonalds stop if there isn’t one at the exit

4. Route Rationale
   a. Which route are you taking? Scenic? Most direct? Why?
   b. Why are you stopping at the listed stops (attractions)
   c. What aspects of physical geography will you encounter along the way?
   d. What aspects of human geography will you encounter along the way?
   e. What type of transportation will you use?
      i. Car, Plane, Train, Ferry boat, Etc. (must use a car 70% of trip!)

5. Food Plan
   a. Where/what/how/why (locations) will you eat on your trip?
   b. If you are cooking your food, where will it be purchased from?

6. Contingency Plan
   a. Develop a back-up plan for the following in case of emergency
      i. Car trouble, Money issues, Road construction, Lost/forgotten items, Cell phone breaks, On Star Navigation Breaks, etc.

7. Pack List
   a. What will you bring, quantity of items, rationale

8. Itinerary
   a. A complete and detailed list of what you will do from start to end of your road trip.
   b. Include the actual road trip and also your destination itinerary

9. Budget
   a. Budget should be itemized according to the following
      i. Allowance, Attractions, Hotel, Food, Travel- gas (use current prices), ferry boat, train, or plane tickets, Extra Expenses (souvenirs, gifts, etc.), Emergency allowance

Road Trip Presentation

1. Things to include about your destination
   a. Physical features
   b. Economic activity
   c. Natural Resources
   d. Government
   e. Education
   f. Capital and major cities
   g. Attractions
   h. Religion
   i. Language
   j. History
   k. Population Distribution
   l. Economics
   m. Purpose for choosing this location

2. Provide an attractive fact sheet for your presentation so students may use as a reference to learn about your destination.
   a. Organized
   b. Creative
   c. To the point
   d. Easy to use and follow
   e. Practical information
   f. 1 page typed
   g. PROVIDE ENOUGH COPIES FOR THE CLASS!
### What is your GEO?

**A Geographic Education Outlook for the 21st Century Student**

<table>
<thead>
<tr>
<th>STUDENT NAME: __________________________  GRADE: _____/170</th>
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</table>

<table>
<thead>
<tr>
<th>PRESENTATION</th>
<th>FORMAT: _______</th>
<th>/70</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual Aid 15 pts</td>
<td>*pictures *Creative *Colorful *Organized *Brief bullets *Educational</td>
<td>All except</td>
<td>Lacking</td>
</tr>
<tr>
<td>Content 25 pts</td>
<td>*Shows a full understanding of the topic *Concise *Accurate *Focused on most important information *Minimal grammar errors</td>
<td>All except</td>
<td>Lacking</td>
</tr>
<tr>
<td>Preparedness 10 pts</td>
<td>*Student is completely prepared and has obviously rehearsed.</td>
<td>lacking</td>
<td>lacking.</td>
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<table>
<thead>
<tr>
<th>HANDOUT</th>
<th>/20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fact Sheet 20 pts</td>
<td>*Clear *Organized *Easy to understand *Concise *Student involvement *Provided own copies for class</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ROAD TRIP MANUAL</th>
<th>/50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content 40 pts</td>
<td>*Clear *Organized *Easy to understand *Only important points highlighted *Student involvement *Provided own copies for class</td>
</tr>
<tr>
<td>Sources 10 pts</td>
<td>Careful and accurate records are kept to document the sources. MLA format</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TASK SHEET</th>
<th>/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Sheet and HW sheet 10 pts</td>
<td>*Signed by all group members *All group members have tasks that have been completed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GROUP PARTICIPATION</th>
<th>/20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working with Others</td>
<td>Almost always listens to, shares with, and supports the efforts of others. Tries to keep people working well together.</td>
</tr>
<tr>
<td>Focus on the task</td>
<td>Consistently stays focused on the task and what needs to be done. Very self-directed.</td>
</tr>
<tr>
<td>Preparedness</td>
<td>Brings needed materials to class and is always ready to work.</td>
</tr>
</tbody>
</table>
What is geography to you?

2. Why did you decide to take this class?

3. What are you hoping to learn/gain by taking this class?

4. What interests do you have in geography?

5. What country/continent do you hope to learn more about?

6. Which best describes your opinion about group work?
   - Awesome! I like being able to EQUALLY share the work load.
   - Okay as long as I have a hard working partner!
   - DISLIKE IT!! I don’t like my grade depending upon someone else’s effort.
   - LOVE IT because someone else can do all the work!

7. What grade will you receive at the end of the semester? ______
What is your GEO?
A Geographic Education Outlook for the 21st Century Student

Semester Survey

***Please do NOT write your name on this evaluation***

Answers such as No, Yes, I don't care, whatever, fine, etc. do not help me grow as a teacher.

1. Of the various methods of learning that took place this semester, (handouts, readings, individual research, PowerPoints, presenting to class, photo/document analysis, lecture, student presentations, movies, etc.) which TWO did you benefit the most from and why?
   a. 
   b. 

2. Would you prefer this Geography class to be student centered or teacher centered? Explain.

3. Do you have any ideas for projects for future years or ideas in general?

4. Complete the chart below and respond to the various projects from this semester:

<table>
<thead>
<tr>
<th>Project</th>
<th>Explain Like/Dislikes</th>
<th>Suggestions/Additions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Warming</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South America Posters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final</td>
<td></td>
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</tbody>
</table>

5. What did you like about this class? Explain.

6. What would be one thing you would change about this class?

7. Have/will you recommended this class to your friends? _____
8. Would you recommend this class to your friends? _____
   Explain why or why not:

9. Are you taking this class next semester? _____
What is your GEO?

A new
Geographic
Education
Outlook
for the 21st century

Rebecca Haapanen
University of Oregon
Final Project for EDGE Program Completion
July 2010

GEO Task

• Make the struggling elective of geography appealing to a geo-uninformed student body by re-writing an outdated Geography I curriculum for the 21st century student.

• End product: Geography I Curriculum
What is your GEO?
A Geographic Education Outlook for the 21st Century Student

GEO 2009-2010 Basics

• Warren Township H.S.  Gurnee, Illinois
• Enrollment: 4,495
• Racial/Ethnic Background
  • White 58.6%
  • Black 9.8 %
  • Hispanic 17.7%
  • Asian/Pacific Islander 9.6%
  • Native American .3%
  • Multi Racial/Ethnic 4.0%
• Operating Cost per Student: $10,065 Ranked 5th /6
• Geography Sections Geo I- 1 Geo II- 1
• Geography Enrollment: Geo I- 24 Geo II- 21 (projected)

GEO Concerns

• Geography is not a requirement
• Low student enrollment
• Many students lack basic Geo IQ
• Typed-written curriculum
• Students’ geo-interests?
• Amount of content
• Blow off class
What is your GEO?
A Geographic Education Outlook for the 21st Century Student

My GEO Goals

• Increase student enrollment
• Create a greater interest in the field
• Incorporate standards
• Make Geography I applicable to today’s students
• Re-write Geography I curriculum

GEO Solutions

• Supported by Standards
• Current Events
• Technology Implementation
• Historical Geography
• Hands-on Activities
• Student Interest
GEO Solution 1: Based on Standards

• Rationale:
  • To align the Geography I curriculum with WTHS 2010 goals
  • To provide a research base for the curriculum to give content additional credibility
  • Better prepare students for high-stakes testing

• Product:
  • Geography I 2010 Curriculum

• Standards Used
  • College Readiness Standards (CRS) 2010
  • National Geography Standards Geography for Life 1994
  • WTHS Social Studies Power Skills 2010
**GEO Solution 2: Current Events**

- **Rationale:**
  - Place
  - Purpose
  - Diffusion throughout space

- **Product Ideas:**
  - Student presentations
  - Generate news articles
  - Discussions/debates

**Example: 5 Themes in Reality**

- **Scope/Sequence:** Unit 1 Physical Geography/ 2 day

- **Elements:**
  - Physical Geography
  - Human Geography

- **Components:**
  - 1 page written summary, reaction, connection, and link to 5 themes
  - 5 minute class presentation
GEO Solution 2: Current Events

GEO Solution 3: Technology

• Rationale:
  • Age of Twitter, Facebook, Bing
  • Reach a wider audience of learners with multiple intelligences
  • Use more current resources than their textbook

• Product Ideas:
  • GIS
  • Virtual Fieldtrips
  • U.S. Census Bureau
  • Research → ABC-Clio
  • MS PowerPoint
  • Movie Maker - PSA
  • MS Publisher
What is your GEO?
A Geographic Education Outlook for the 21st Century Student

GEO Solution 3: Technology

• Example: Going Green Project
• Scope/Sequence: Unit 1 Physical Geography/7 days
• Elements:
  • Physical geography
  • Human geography
• Components:
  • Portfolio of plan to turn school “Green”
  • Presentation - Pitch to principal and assistant principal

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GEO Solution 3: Technology

R. Haapanen July 2010 14
What is your GEO?
A Geographic Education Outlook for the 21st Century Student

GEO Solution 3: Technology

R. Haapanen  July 2010

A Guide to “Greening” WTHS

Environmental Solutions Inc.
Solving tomorrow’s problems today

Bayan Abdul-Ahkim
Danny Krissek
Davis DeFord
Evan Trapp
Rodrigo Gonzalez
Xavier Suarez
**GEO Solution 4: Historical Geography**

- **Rationale:**
  - In order to understand the present, one must understand the past

- **Product Ideas:**
  - Genealogy Project
  - Historical Inquiry of Urban Development and Land Use
  - Comparative Histories Project
  - Interviews
  - Map Migration Routes

---

**Example: National Park Project**

- **Scope/Sequence:** Unit 1 Physical Geography/ 4 days

- **Elements**
  - Physical Geography
  - Cultural Geography

- **Components:**
  - National Park Brochure
  - When Yellowstone Erupts Jigsaw
GEO Solution 4: Historical Geography

GEO Solution 5: Hands-On

- Rationale:
  - Think outside the textbook
  - Reach a greater number of students’ multiple intelligences

- Product:
  - Outside research
  - Geo-cache
  - Manipulatives
  - Cartography
  - Simulations
  - Culture Fair
  - Dioramas
What is your GEO?
A Geographic Education Outlook for the 21st Century Student

GEO Solution 5: Hands-On

- Example: Road Trip Project
- Scope/Sequence: Unit 2 North America/7-10 days
- Elements:
  - Physical geography
  - Human geography
- Components:
  - Road Trip Manual
  - Road Trip Presentation
    - Road Trip PowerPoint
    - Road Trip Fact Sheet

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GEO Solution 6: Student Interest

- Rationale:
  - More closely match student interests with what is stressed
  - Having student opinion gives students ownership

- Product:
  - Initial Student Interest Surveys
  - Project Reflection Surveys
  - Mid-term Reflection Survey
  - Semester Reflection Survey
What is your GEO?
A Geographic Education Outlook for the 21st Century Student

GEO Solution 6: Student Interest

- Example: Initial Student Interest Survey
- Scope/Sequence: 1st week of school/1 day
- Elements:
  - Physical Geography
  - Human Geography
- Components:
  - What are you hoping to take away from the class?
  - What country in each region are you most interested in learning about?
  - What encouraged you to take this class?
  - What type of geography are you most interested in learning about?
  - Where have you traveled?
  - What is your dream travel destination and why?

---

Geography II Spring 2010: Interest Survey

1. What is geography to you?
2. Why did you decide to take this class?
3. What are you hoping to learn by taking this class?
4. What countries do you want to learn about?
5. What course do you hope to learn more about?
6. What do you describe your major as being about?
   - I choose major because I love working with people.
   - I choose major because I enjoy working with people.
   - I choose major because I enjoy working with people.
   - I choose major because I enjoy working with people.
   - I choose major because I enjoy working with people.
7. What grade will you consider the end of the semester? _____
What is your GEO?
A Geographic Education Outlook for the 21st Century Student

GEO Scope and Sequence

- Geography I Curriculum - 1st semester
  - **Unit 1 Physical Geography** 6 weeks
    - 5 themes
    - Basics of Physical and Human Geography
    - Global Warming
  - **Unit 2 North America** 6 weeks
    - Canada
    - United States
    - Mexico
  - **Unit 3 Latin America** 6 weeks
    - Caribbean
    - Central America
    - South America

Geography I Curriculum

College Readiness Standards
National Geography Standards
WTHS Social Studies Skills
Content Objectives
Assessment

UNIT: Physical and Human Geography

<table>
<thead>
<tr>
<th>CONTENT AREA</th>
<th>COLLEGE READINESS</th>
<th>NATIONAL GEOGRAPHY STANDARDS</th>
<th>WTHS SOCIAL STUDIES SKILLS</th>
<th>CONTENT OBJECTIVES</th>
<th>ASSESSMENT</th>
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</thead>
<tbody>
<tr>
<td><strong>Theme 1: Exploring Geography</strong></td>
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<tr>
<td>- Describe the major themes of earth's physical features or settings</td>
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<tr>
<td>- Measure the importance of physical processes in shaping earth's surface</td>
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<tr>
<td>- Use maps, globes, and other geography tools to describe and analyze earth's surface</td>
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<tr>
<td><strong>Theme 2: Physical Geography</strong></td>
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<tr>
<td>- Understand the nature of earth's surface</td>
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<tr>
<td>- Analyze the impact of natural processes on the earth's surface</td>
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<td><strong>Theme 3: Human Geography</strong></td>
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<td>- Understand the nature of human activities on the earth's surface</td>
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<td>- Analyze the impact of human activities on the earth's surface</td>
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<td><strong>Theme 4: Social Studies Skills</strong></td>
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<tr>
<td>- Use maps, globes, and other geography tools to describe and analyze earth's surface</td>
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<td><strong>Theme 5: Content Objectives</strong></td>
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<tr>
<td>- Understand the nature of earth's surface</td>
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R. Haapanen July 2010
My GEO - What is up next?

- Geographic Education Outlook
  - Solutions implemented into curriculum
  - Geography I curriculum goes for board approval Fall 2010
  - Geography I curriculum to be officially implemented 2010-2011 school year!
  - Begin writing Geography II curriculum late summer 2010

- Expanding the discipline!
  - AP Human Geography hopefully brought to WTHS 2011-2012 school year at the 11th /12th grade level.
What is your GEO?
A Geographic Education Outlook for the 21st Century Student

References