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Geographic Adventures: an Interdisciplinary Fourth Grade Geography Unit

Janet Campbell
Regis University

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GEOGRAPHIC ADVENTURES:
AN INTERDISCIPLINARY FOURTH GRADE GEOGRAPHY UNIT

by
Janet Campbell

A Research Project Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Education

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ABSTRACT

Geographic Adventures: An Interdisciplinary Fourth Grade Geography Unit

The need for increased geographic literacy in an age of globalization and the decline in geographic literacy among people in the United States have created an educational challenge that should be addressed aggressively in the K-12 curriculum. One roadblock to improvement of geographic instruction is the subject centered instruction designed to accommodate standardized testing. The isolation of subject materials in the educational process limits students' understanding and topic relevance. Canatsey (1999) suggested that the study of geography can create relationships among multiple subjects and that the resulting connections lead to a greater understanding of geography, as well as the other subjects with which it is integrated. The purpose of this project was to design an interdisciplinary fourth grade geography unit in which geography is integrated with a variety of other disciplines, including: (a) mathematics, (b) history, (c) reading and writing, (d) art, (e) economics, and (f) technology. This integration of geography with other disciplines provides students with a learning experience intended to increase geographic literacy while at the same time reinforcing skills and knowledge from other disciplines.

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Chapter 1

INTRODUCTION

The need for increased geographic literacy in an age of globalization and the decline in geographic literacy among people in the United States have created an educational challenge that should be addressed aggressively in the K-12 curriculum. Daley (2003) cited a 1988 Gallup poll in which it was found that the geographic literacy of Americans surveyed was well below what was considered acceptable. Over the past 2 decades, there has been a resurgence in the importance placed on geography education in the U.S., as evidenced by its inclusion as one of five core subjects in the National Education Goals established by President Bush and the state governors in 1989 (Daley). President Clinton incorporated the National Education Goals into The Goals 2000: Educate America Act in 2000, and signed them into law. The second President Bush included geography as a core academic subject in the No Child Left Behind Act of 2001 (Daley).

In 1995, members of the Colorado General Assembly and the State Board of Education adopted the Colorado Model Content Standards for Geography (Colorado Department of Education, 1995, 2005). Stoltman (2002) cited the results from the 2001 National Assessment of Educational Progress in Geography which indicated that “there were no statistically significant changes from 1994 to 2001 in the percentage of students at any grade at or above the Proficient level” (p. 4).

Statement of the Problem

In the geography section of the National Assessment of Educational Progress (2001, as cited in Weiss, Lutkus, Hildebrant, & Johnson, 2002), it was found that U.S. fourth grade students achieved an average score of 209 out of a possible 500 points. This was an improvement over the 1994 average score of 206; also, it indicated that there was still notable room for improvement. Stoltman (2002) asserted that it was important to provide students with regular opportunities to apply geographic knowledge and skills in order to improve their abilities to use them effectively. As students progress through the educational system with a goal of becoming responsible citizens of the U.S. and the world, they need to markedly improve their understanding of their local, national, and global environment.

Purpose of the Project

The purpose of this project was to design an interdisciplinary fourth grade geography unit in which geography is integrated with a variety of other disciplines, including: (a) mathematics, (b) history, (c) reading and writing, (d) art, (e) economics, and (f) technology. This integration of geography with other disciplines provides students with a learning experience in which they must combine their geography skills with skills from other disciplines to achieve a successful outcome. During this learning experience, students practice blending their acquired knowledge and skills in order to apply them effectively to realistic problems and goals.

The unit activities are relevant to the cognitive development and general life experience of fourth grade students so that they can better assimilate this new knowledge and skills into their existing bodies of knowledge and apply the skills in everyday life.

Such assimilation is necessary for the information to become a functional tool as they continue both formal and informal learning.

Chapter Summary

The problem of geographic illiteracy in the U.S. has been well documented, and the inclusion of geography as a core discipline in education standards, both national and state, demonstrates a widespread effort to address this deficiency of knowledge and skills. The scores from periodic testing suggested that only minimal progress has been made toward improvement, but the efforts of educators and geographers to press for continued improvement is evident from the volume of materials that have been written on the subject. It is this researcher's position that, to be effective in the long term, geography instruction must be interdisciplinary. The application of geographic knowledge and skills in the real world is not an isolated function, but it is integrated with other subject areas to address a broad range of questions and problems. In Chapter 2, the Review of Literature, background material is presented to support the position that geographic literacy is a challenge that educators must continue to address by means of more effective instruction. Interdisciplinary instruction and the development of relevance in the geography curriculum are posited as two important methods which can be employed to achieve the desired improvement in geographic literacy among fourth grade students. In Chapter 3, Method, information in regard to the target audience, procedures, and goals of the project are presented in detail.

Chapter 2

REVIEW OF LITERATURE

The purpose of this project was to develop an interdisciplinary unit of geography lesson plans for fourth grade students which is based on topics and life experiences with which students are familiar in order to create relevance. The dismal state of geographic literacy in the United States has been documented through studies commissioned by representatives of the National Geographic Society (National Geographic-RoperASW, 2002; National Geographic-Roper Public Affairs, 2006) and through a study conducted by staff of the National Center for Education Statistics (2001, as cited in Weiss, Lutkus, Hildebrant, & Johnson, 2002). In order for students to be prepared for life in an increasingly more global environment, it is critical that they be equipped with the geographic knowledge and skills necessary to support both their professional and private pursuits. Therefore, educators need to employ instructional strategies and methods that effectively engage students in the learning process so that they can more successfully assimilate the necessary geographic knowledge and skills. The primary subjects for this literature review are: (a) the need for improved geographic literacy in the U.S., (b) the importance of effective geography instruction, (c) the standards and skills on which that instruction is based, and (d) the instructional strategies to be employed to achieve improved geographic literacy.

Geographic Literacy in the United States

In 2006, the staff of the National Geographic-Roper Public Affairs conducted the Geographic Literacy Study to assess geographic literacy among young U.S. adults between the ages of 18-24. In a *National Geographic News* article, Roach (2006) cited Rutherford (n.d.), a National Geographic Society geographic education specialist, who bemoaned the disinterest of young adults in the world beyond their borders. He emphasized that daily decisions have long term impact and that, since geography is a meaningful component of decision making, it is critical for the people of the U.S. to pursue improvements in geographic literacy. Also, Roach cited comments by Richardson (n.d.), Executive Director of the Association of American Geographers, who observed that the Roper poll results had been deplorable for several years. Richardson asserted that “geographic knowledge is essential for survival in our rapidly globalizing world” (Roach, p. 2). In order for the people of the U.S. to continue as vital participants in a global economy and effective contributors to solutions for global problems, they will need to aggressively pursue the acquisition and assimilation of geographic knowledge.

The 2006 National Geographic study was a follow-up to two previous studies. The first was conducted in 1988 (as cited in National Geographic-RoperASW, 2002) to obtain a basic understanding of the state of geographic knowledge in the U.S. It was considered a groundbreaking study which found that people in the U.S., in general, tested poorly in geographic literacy, and that young adults (i.e., aged 18-24) were particularly deficient in geographic knowledge and skills. The second study was conducted in 2002 to assess the current status of basic geographic skills among young U.S. adults and analyze any progress that may have been achieved since the 1988 study. Based on the

results, the staff of the National Geographic Society-RoperASW concluded that there had been little or no improvement.

In the National Geographic-Roper Public Affairs 2006 survey, the participants were asked questions to determine their individual: (a) attitudes and opinions regarding certain skills and abilities, (b) knowledge of the world and world events, (c) map reading skills, (d) background information, and (e) demographic information. In regard to knowledge of world events and map reading skills, the participants answered about half (54%) of all the questions correctly and, based on responses to questions about the importance of geographic literacy, were not concerned about their lack of knowledge. Overall, many participants were: (a) unable to locate on a world map the countries and states that had been frequently in the news, (b) did not know important population statistics such as the population of the U.S. and the comparative size of the population of China, and (c) did not know basic information about the use of world languages and international commerce.

The staff of the National Center for Education Statistics conducted the National Assessment of Educational Progress (2001, as cited in Weiss, Lutkus, Hildebrant, & Johnson, 2002) geographic assessment of 4th, 8th, and 12th grade students in public and nonpublic schools and compared the results to those collected from a 1994 assessment. Both assessments were: (a) based on the geography framework developed for the 1994 assessment, (b) shared a common set of questions and exercises, and (c) had student populations which shared comparable sampling procedures and testing conditions. The framework was constructed along two dimensions: content and cognitive. In the content dimension, students were assessed on: (a) particular locations and spatial patterns on the

surface of the Earth; (b) interactions between human activity and the physical environment; and (c) spatial connections among people, places, and regions through cultural, economic, and political activities. The abilities to know, understand, and apply geographic knowledge and skills were assessed within the cognitive dimension. A comparison of the results from the two assessments revealed that the average scores of 4th and 8th grade students were higher in 2001 than in 1994, and there was no significant difference in the scores of the 12th grade students. Despite the increased averages, no significant changes were recorded in the percentage of students in any of the three grades that performed at or above the proficient (i.e., the level at which all students should perform) achievement level.

The results from the National Assessment of Educational Progress (2001, as cited in Weiss et al., 2002) geographic assessment that are most pertinent to this project were those derived from the fourth grade assessment. That assessment covered a variety of geographic concepts and skills and addressed a higher percentage of questions about U.S. geography than did assessments in Grades 8 and 12. In addition to textual stimuli, visual stimuli (e.g., maps, charts, graphs, diagrams, cartoons, photographs) were used to make the assessment more accessible and interesting to students. Researchers reported that the fourth grade students achieved an average score of 209 out of a possible 500 points. This was only a 3 point improvement over the 1994 average score of 206. In regard to achievement level, results from the 1994 assessment revealed that 48% of fourth grade students scored at or above the basic level (e.g., 187 points), compared to 53% in 2001. Students who scored at or above the proficient level (e.g., 240 points) in 1994 and 2001

remained the same, at 19%. Overall, these results indicated that there was still notable room for improvement in the geographic literacy of fourth grade students in the U.S.

The Importance of Geographic Literacy

In 1995, the representatives of the National Assessment Governing Board at the National Center for Education Statistics urged that students in the U.S. need to learn geography in order to understand the world around them. They, and others (Bednarz & Others, 1994; Canatsey, 1999), emphasized that geographic literacy is necessary if students are to reach adulthood with the skills and knowledge necessary to act as responsible citizens and become effective participants in a global economy. According to Reinhartz and Reinhartz (1990, as cited in Canatsey, 1999), increased globalization means that people in the U.S. can no longer live in isolation from other nations, people, cultures, and customs. They will need to improve their knowledge of different groups of people and how those groups interact with and impact the physical environments and each other in order to continue as valued participants in the world community.

For many people, the study of geography means to learn the names of continents, oceans, countries, regions, states, and capitals and to be able to locate them on a map or globe. However, members of the National Council for Geographic Education (n.d.b) asserted that geography is much more. It teaches the skills of: (a) interpretation, (b) data application, (c) pattern recognition, and (d) problem solving. To comprehend the world and one's place in it, as individuals and as a nation, requires geographic literacy. In addition to these important contributions, knowledge of geography plays a valuable role in the ability to understand elements of successful commerce, such as markets, resources, and transportation, all of which impact national and international economies.

According to Bednarz and Others (1994), representatives from business, professional, and civic organizations, as well as parents and educators, have expressed concerns about the state of geographic literacy in the U.S. In an online brochure, in which they solicited the participation of business professionals in efforts to improve geography education, members of the National Council for Geographic Education (n.d.a) explained that geographic knowledge is critical for community residents who participate in decisions about land use, flood control, and industrial development. Also, they emphasized that U.S. citizens must rely on geographic knowledge and skills to understand U.S. foreign policy options and the merits of international treaties. Knowledge of the countries with which the U.S. interacts is essential if individuals are to be responsible participants in issue debates and decision making. Discussions about local and regional plans, resource utilization, conservation, and land use all impact businesses and a solid background in geography is necessary if participants are to make relevant contributions to these discussions. Finally, as the impact of globalization on businesses increases, the need for employees with the skills necessary to be sensitive to cultural issues and to operate within multicultural work forces increases as well.

The concerns expressed by educators and other professionals, and the practical needs of all facets of U.S. society serve to reinforce the perception that the geographic literacy of people in the U.S. must be improved. For students, who are still served by the educational systems, that improvement should begin in school.

Structures for Geographic Learning

In response to the widespread concern about geographic literacy in the U.S., members of various organizations determined that it was important to take actions that

would lead to improvement. As a result, they created educational structures, or frameworks, that could be used to advance geographic instruction. Three of the most important structures are addressed in this section.

The Five Fundamental Themes of Geography

In 1984, members of the National Council for Geographic Education and the Association of American Geographers (as cited in Massachusetts Geographic Alliance, 1990) published guidelines in which they identified the five fundamental themes of geography. Also, they recommended that educators apply these themes throughout the K-12 curriculum. The five themes they identified are:

1. Location: Position on Earth's Surface.
2. Place: Physical and Human Characteristics.
3. Relationship Within Places: Humans and Environments.
4. Movement: Humans Interacting on the Earth.
5. Regions: How They Form and Change. (p. 1).

The five fundamental themes were intended to provide a more complete geographical picture of a place than just its location on the surface of the Earth. Using Denver as an example, one would pursue such information as: (a) a thorough description of the physical location of Denver; (b) why Denver was established in that particular location rather than somewhere else (e.g., the characteristics of that location at the time the site was selected); (c) how the location of Denver explains the sort of city it has become; and (d) whether the knowledge gained from a geographical analysis of Denver could be applied to other places or situations.

Fitzhugh (1992, 1994, 2006) and Edgington and Hyman (2005) are examples of the many geography educators who applied the five fundamental themes of geography as an organizing concept to make learning more effective and to encourage students to

explore and discover places around the world. Fitzhugh used the concepts to design elementary education lesson plans through which he introduced students to foreign countries and employed interdisciplinary strategies. Edgington and Hyman used the concepts to develop an instructional unit which was based on a theme familiar to most elementary level students, baseball.

The National Geography Education Standards and Skill Sets

In another response to the need to improve geographic literacy in the U.S., participants in the Geography Education Standards Project (Bednarz & Others, 1994) provided a structure to aid educators in the design of more effective geography frameworks. They developed a set of 18 national geography standards and recommended that state educators use them as a guideline to build their own curricula. In the Colorado Department of Education (CDE; 1995) Colorado Model Content Standards for Geography, the essential elements of these national standards are present. The 18 standards were organized into 6 sections (Bednarz & Others): (a) The World in Spatial Terms, standards 1-3; (b) Places and Regions, standards 4-6; (c) Physical Systems, standards 7-8; (d) Human Systems, standards 9-13; (e) Environment and Society, standards 14-16; and (f) The Uses of Geography, standards 17-18. Within this organization, the 18 standards represent what the geographically informed person should know and understand.

1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective
2. How to use mental maps to organize information about people, places, and environments in a spatial context
3. How to analyze the spatial organization of people, places, and environments on Earth's surface

4. The physical and human characteristics of places
5. That people create regions to interpret Earth's complexity
6. How culture and experience influence people's perceptions of places and regions
7. The physical processes that shape the patterns of Earth's surface
8. The characteristics and spatial distribution of ecosystems on Earth's surface
9. The characteristics, distribution, and migration of human populations on Earth's surface
10. The characteristics, distribution, and complexity of Earth's cultural mosaics
11. The patterns and networks of economic interdependence on Earth's surface
12. The processes, patterns, and functions of human settlement
13. How the forces of cooperation and conflict among people influence the division and control of Earth's surface
14. How human actions modify the physical environment
15. How physical systems affect human systems
16. The changes that occur in the meaning, use, distribution, and importance of resources
17. How to apply geography to interpret the past
18. How to apply geography to interpret the present and plan for the future. (pp. 34-35).

In addition to the 18 national standards, participants in the Geography Education Standards Project (Bednarz & Others, 1994) incorporated the 5 skill sets necessary to effectively address the standards. These skill sets were adapted from guidelines prepared by the Joint Committee on Geographic Education (1984, as cited in Bednarz & Others) and, according to Stoltman (1995), "focus upon critical thinking and incorporate such processes as knowing, inferring, analyzing, judging, hypothesizing, generalizing, predicting, and decision making" (p. 3). The 5 skill sets are:

1. asking geographic questions,
2. acquiring geographic information,
3. organizing geographic information,
4. analyzing geographic information, and
5. answering geographic questions. (Bednarz & Others, p. 42)

The participants in the Standards Project intended that the 5 skill sets would be applied to the 18 standards to achieve a comprehensive body of geographic knowledge and skills.

Together, the 5 themes of geography and 18 national standards, accompanied by the 5 skill sets, established a well contrived structure for geography instruction and learning. This structure could be applied to improve geographic literacy in schools across the U.S.

Interdisciplinary Geography Instruction

The isolation of subject materials in the educational process limits students' understanding and topic relevance. Canatsey (1999) suggested that the study of geography can create relationships among multiple subjects and that the resulting connections lead to a greater understanding of geography, as well as the other subjects with which it is integrated. McDougall (2001, as cited in Boehm, Saxe, & Rutherford, 2003a) stated that "geography is fundamental to the process of true education in that it serves as a springboard to virtually every other subject in the sciences and humanities" (p. 13). Interdisciplinary instruction is not a new idea, but the emphasis on standards in the separate disciplines and subject centered instruction to accommodate standardized testing has been a setback for educators who would like to see it more broadly implemented (Vars & Beane, 2000). Vars and Beane recommended that educators proceed with the development of integrated learning experiences and then back-map them to standards in the various integrated disciplines to demonstrate the connection between the interdisciplinary instruction and the standards.

The goal of this project was to develop a unit of geography lesson plans for fourth grade Colorado students which integrate geography instruction with the instruction of:

(a) mathematics, (b) history, (c) visual art, (d) economics, (e) reading and writing, and (f) technology. Because of the isolated manner in which these subjects are frequently taught in schools and in school textbooks, many students think that they are separate and distinct from one another, while the reality is that the ability to integrate knowledge from multiple disciplines for thinking and problem solving tasks is a critical life-skill (Abel, 1996). In fact, it is a skill which is necessary for an individual to understand life experiences and participate as a responsible citizen in a democracy (Beane, 1997, as cited in Vars & Beane, 2000).

Integrated instruction goes beyond the inclusion of more than one discipline in a lesson or unit. According to Beane (1993, as cited in Vars & Beane, 2000), it blurs the boundaries that separate various disciplines while it employs the knowledge and skills identified within each of them.

Geography Instruction Integrated with History

Geography instruction is most commonly integrated with history or social studies and, often, it is included in history and social studies textbooks. Contributors to the Tennessee Social Studies Curriculum Standards (Tennessee State Department of Education, 2002) combined several disciplines (e.g., culture, economics, geography, government and civics, history, and individuals, groups, and interactions) under the Social Studies Standards and reported that content standards should not be isolated but taught in an integrated manner. Fitzhugh (1993) included geography as a subtopic of social studies when he recommended the integration of social studies and reading. This suggests that he considered them so closely linked as to be treated as one discipline rather than two.

Boehm, Saxe, and Rutherford (2003b) challenged the idea that educators teach history and geography in a truly integrated manner. They acknowledged that many educators recognize the importance of integrated instruction but asserted that, when such integration is attempted, frequently, the geography portion is relegated to a simplistic use of maps to identify historic locations. They advised educators to expand the relationship between geography and history and teach students how geography shaped the characteristics of the places, people, events, and ideas that resulted in the historic events under consideration. Gober (2001, as cited in Boehm et al., 2003a) emphasized the importance of integrated geography and history instruction when he noted that geography subject matter is almost always rich in historical content. Historical knowledge is critical if one is to understand the variety of subject matter within the geography discipline (e.g., boundaries, transportation, territorial rivalries, migration patterns).

Geography Instruction Integrated with Other Subjects

Several writers recommended that geography instruction be integrated with disciplines other than history. Weber (1991) designed instruction in which geography was integrated with: (a) literature, (b) reading instruction, and (c) language arts. Her lesson plans required that students read several selections on trees and then synthesize the information into lists, narratives, and descriptions of observations and processes. In addition to geography, literature, and reading, she incorporated activities in the subjects of science, social studies, and art. Fitzhugh (1992) recommended the integration of geography with literature and reading, through which instruction can employ the elements of time and place to reinforce geographic concepts. According to Fitzhugh, each story has a setting which can be described in geographic terms; when students

understand the geography of a story they are better able to project themselves into the story along with the characters. Also, Fitzhugh (1993) advised educators to teach geographic vocabulary through literature because students' focus and attention is more likely to be engaged by an interesting story than by the content of geography or social studies textbooks.

Gary (1997) encouraged the integration of art with geography, along with several other subjects. In support of his position, he quoted Ross (1992), Director of the National Arts Education Research Center, who wrote that "all the evidence points to a relationship between the arts and the other academic disciplines that is clear and compelling, indicating to both fields that one cannot really flourish without the influence of the other" (p. 11). According to Schubert and Melnick (1997), the integration of art and geography provides students with two specific benefits. First, it provides students with different instructional formats that may better suit their individual learning styles. Second, it allows students a variety of methods by which they can demonstrate what they have learned. Students who are limited to linguistic and logical/mathematical venues for the communication of their learning, may be unable to effectively communicate their newly acquired knowledge to educators. Binko and Neubert (1986, as cited in Canatsey, 1999) suggested that the integration of geography with art and music can provide students with a deeper understanding of the influence that setting and people had on the development of that art and music.

Canatsey (1999) asserted that geography is linked to every other subject and cited Binko and Neubert (1986) who recommended that it be integrated with: (a) foreign language, (b) literature, (c) science, (d) music, (e) physical education, and (f) art.

Students, who study geography along with a foreign language, gain greater insight into the culture associated with that language. When geography and science are linked, students can better understand the connection of people to their environments and the interactions that result from that relationship, which is an important component of scientific investigation.

Relevance in Geography Instruction

Howley (2003) employed the term “lifeworld” to describe “that realm in which we talk, laugh, eat, love, survive and succumb to crises, and in fact, fashion such meaning for our lives as we are able” (p. 5). He went on to explain that students tend to confuse instruction with the application of the knowledge and skills in the lifeworld that should be the outcome of that instruction. Within the context of geography, this would mean that students may report that they do not like geography when, in reality, it is geography instruction that they do not like or with which they are unable to connect. When educators build relevance into the geography curriculum, they increase the likelihood that students will grasp the applicability of geographic knowledge and skills to their lifeworld rather than to react to the instructional aspect of the subject.

Traditionally, geography has been taught with the use of a geography, history, or social studies textbook. Students would be instructed to read the textbook and memorize the information presented, often without real comprehension. Fitzhugh (1991, 1994) pointed out that geography is woven into the life of each individual and that it is impossible to separate the individual from geography. Geography is relevant to students’ lives, but it is questionable whether educators effectively convey that relevance to their students through instruction that impacts them beyond the classroom.

In a discussion of brain-based learning, Konecki and Schiller (2003) cited Kaufeldt (n.d.) who reported that, when students engage in activities with immediate connections to their lives, learning is increased. Similarly, when educators use real problems or situations as the basis for instruction, students are more likely to understand that the knowledge and skills acquired are both important and useful. Edgington and Hyman (2005) attributed students' lack of interest in geography to the fact that they do not grasp its relevance to their lives and that, without relevance, learning does not occur. They recommended that teachers should be aware of students' interests in order to create relevance, and through relevance, learning. Pigozzi (1990, as cited in Coyle & Others, 1996) reported that students' failure to absorb geographic knowledge was caused by an inability to connect meaning to that knowledge.

According to Edgington and Hyman (2005), instruction that is built around the topic of baseball can help students construct meaning because most of them already have some life experience associated with that sport and, therefore, it lends relevance to the subject matter. Vars and Beane (2000) asserted that instruction should be organized around: (a) life experience, (b) real-life problems, and (c) issues important to students. Such instruction would enable them to develop life skills and make sense of the world around them. Also, Vars and Beane recommended that instruction design, based on matters relevant to students, should be back-mapped to standards in the various integrated disciplines to demonstrate its connection to those standards.

Chapter Summary

It is clear that geographic literacy in the U.S. is woefully deficient and that, because geography is such an integral component of effective life skills, it is important

that educators implement instruction to correct that deficiency. With a view to such correction, contributors from various entities have created themes, standards, and skill sets that educators can use to frame and deliver effective geographic instruction. One element of effective instruction is to develop relevance so that students can connect with the learning experience and construct new knowledge from it. Also, because geography is linked to all aspects of life, it makes sense to build relevance for students through the integration of geography instruction with other disciplines and connection with their life experience. Such an approach will translate academic geographical knowledge and skills into life skills. Details with regard to the method, target audience, procedures, and goals of the project are presented in Chapter 3.

Chapter 3

METHOD

The purpose of this project was to develop a unit of geography lesson plans, in which geography instruction is integrated with other subjects and based on topics and experiences with which students are already familiar. The challenge many students encounter in relating to geography became apparent to this researcher when she taught world history and geography to seventh grade students. It was difficult for some students to locate places on maps and globes, but even when they were successful, often, they were unable to grasp the importance of those locations in relationship to others and to compare and contrast the geographical features of different locations. In addition, while they enjoyed activities in which they created maps, few of the students understood the relevance of the exercise and, as a result, they struggled to assimilate the new knowledge. Through various assessments, it became apparent that the students had not absorbed many of the basic skills and strategies taught in earlier grades. Another factor in the selection of this topic was research conducted over the past few decades, the results of which pointed to the notable problem of geographic illiteracy among Americans. Through these two perspectives, this researcher recognized that it was important to improve geography instruction at the elementary level to prepare students for more challenging geographic information and concepts as they progress through their education and lives.

Target Audience

The audience targeted in this project is teachers of 4th grade students in Colorado. Colorado history is commonly taught in this grade and, therefore, the state will be used as the departure point for a geographic adventure. However, also, the unit is designed in a manner that will make it easily adaptable for students in other states.

Project Goals

The goal of this unit is to provide teachers with an interdisciplinary geography unit that incorporates a variety of skills gained from life experiences and the classroom. This unit will provide students with a learning adventure that demonstrates how critical it is for them to integrate their knowledge and skills in order to accomplish realistic cognitive processing and problem solving. Also, the unit provides teachers with learning activities that connect to students' interests and experience so that students can begin to see the personal relevance and long term value of the knowledge and skills they gain in school.

Procedures

To accomplish the goals noted above, this researcher conducted an extensive review of the available literature that pertains to geography instruction, methods, and the impact of interdisciplinary learning, as well as the need to adapt instruction to students' interests and experience. The results from research studies were analyzed for applicability to this project. In addition, the literature was examined for classroom experiences, methods, and strategies that appeared, based on the information provided, to have been the most successful with students and the most practical and cost effective in classroom settings. Methods, strategies, and knowledge gained from the literature review

was applied to the development of the 9 week unit lesson plans, worksheets, and materials and resources. The Colorado Model Content Standards (Colorado Department of Education, 2005) for the subjects incorporated in the unit was used to ensure that the resulting product is standards-based. A map to the standards is provided in an appendix so that teachers can quickly determine whether the unit addresses the learning needs of their students.

Peer Assessment

The interdisciplinary geography unit was assessed by two elementary (i.e., grades K-6) educators who provided informal feedback and recommendations. Subsequently, the feedback and recommendations were used to revise and improve the geography unit in order to achieve a more engaging learning experience for students and an efficient instruction tool for teachers. This important assessment is discussed in Chapter 5.

Chapter Summary

The need for improved geography instruction is evident from the research conducted over the past few decades. Knowledge derived from the literature review was applied to the unit design and content in order to provide 4th grade Colorado teachers with an effective interdisciplinary instruction tool and their students with learning activities that are relevant to real life experiences. In Chapter 4, this author presents the unit overview and lesson plans.

Chapter 4

RESULTS

Introduction

This unit has been designed with the rationale that the skills learned from independent disciplines in school must be integrated in order to be of use in the real world. Knowledge and skills in geography, reading and writing, mathematics, economics, and other subjects are seldom, if ever, used in an isolated manner outside of an academic setting. Students commonly ask, “Why do I have to learn this?” It is difficult for many students to understand how they will be able to use knowledge and skills learned in school in other aspects of life. The use of interdisciplinary units to teach and reinforce learning also serves to teach students how to apply their knowledge in real life tasks.

Geography is an essential element of everyday life. Because it is such an integral part of their daily actions and activities, students often use geographic knowledge and skills without realizing it. This unit is intended to be a tool which teachers can use to help students recognize various applications of geography in real life and how geographic knowledge and skills are naturally integrated with the knowledge and skills students acquire from other disciplines.

Unit

The prerequisites for this unit include prior student knowledge of such concepts as map scale, legends, latitude and longitude, and the four basic mathematical operations

(i.e., addition, subtraction, multiplication, and division). Although original instruction in these areas is not part of the unit, some review may be useful for students. In light of the advantage of some review, it is recommended that the unit be scheduled in the spring term rather than fall when students are readapting to the school environment and mindset, and during which review of many of the skills necessary to be successful in this unit may occur. Another advantage derived from a spring schedule is that students will have further developed cognitively and in the breadth of personal experiences they can bring to the unit. Finally, the teacher can use the months leading up to the unit to ensure that students have the background knowledge and skills necessary to be successful.

The author designed this unit to be teacher friendly. Therefore, it includes worksheets, grading rubrics, and web addresses for maps, tables, and information that enable the teacher to focus less on preparation of materials and resources and more on the students, activities, and outcomes of the unit. To facilitate possible questions about how the unit relates to the Colorado Model Content Standards, the unit overview includes a table listing the Standards addressed. In addition, the unit challenges students to employ their technology skills and use the Internet to search for and locate data and information. It has been this author's observation that, in many schools, students begin learning to use the Internet prior to 4th grade. However, if this is not the case for a unit audience, the teacher may need to either schedule such instruction prior to the unit or use print resources in place of the Internet.

The author anticipated that most students will be able to complete the entire project. However, if a teacher needs to modify the unit for some students, it is suggested that s/he review the unit overview, trip summary (Lesson 16), and oral presentation

worksheet (Lesson 17). These materials identify the most critical elements of the project and can be used by teachers to focus student attention on the items necessary for every student to successfully produce a completed project.

Finally, the unit is intended to be completed as two lessons each week for 9 weeks. Although it could be extended by using one lesson each week, for the duration or periodically, the teacher should carefully consider student interest levels and how long that may reasonably be sustained before making such a modification.

Unit Plan Overview

Unit Title	Grade Level	Unit Author
Planning a Travel Adventure	4th	Janet Campbell
Primary Content Area: Geography		
Secondary Content Areas: Visual Arts, Economics, History, Reading and Writing, Mathematics		
Time Frame: Approximately 9 weeks, 30-45 minutes, 2 days per week.		
Lesson #	Lesson Title	
1	Introduction	
2	Where Shall We Go?	
3	What's a Region?	
4	What's It Like Where We Live?	
5	What's It Like Where We're Going?	
6	Mapping My Destination?	
7	How Do They Compare? Part I	
8	How Do They Compare? Part II	
9	What About History? Part I	
10	What About History? Part II	
11	How Do I Calculate That?	
12	How Do We Get There?	
13	What About Sleeping and Eating?	
14	What Do I Pack?	
15	Let's Make Project Folders!	
16	We Need a Trip Summary!	
17	Oral Presentation Preparation	
18	Oral Presentations	
(Worksheets that accompany the lessons are included in Appendix A.)		

The table below maps lessons to the Colorado Model Content Standards.

Content Area	Standard	Standard Statement	Lesson
Geography	1.1	Read and interpret information from maps and globes; display information on maps with legends.	2, 3, 4, 5, 6
	1.2	Identify major geographic features; locate Colorado in relation to the U.S.; identify map locations using grids.	3, 4, 5, 6
	1.3	Define basic geographic vocabulary; describe how places are connected by movement of goods and services.	1, 4, 5
	2.1	Identify and classify characteristics of places as human or physical.	4, 5
	2.2	Identify a region as an area with unifying geographic characteristics.	3, 4, 5
	2.3	Identify ways people relate to places and regions through culture.	4, 5
	4.3	Identify economic networks used in daily life.	4, 5
	5.1	Identify how people adapt to the physical environment.	14
Visual Arts	1	Recognize and use visual arts as a form of communication.	6, 15
	2	Know and apply elements of art, principles of design, and sensory and expressive features.	6, 15
	3	Know and apply visual arts materials, tools, techniques, and processes.	6, 15
Economics	2.1	Economic systems must determine what goods and services will be produced.	4, 5
	2.2	Fundamental characteristics of pricing goods and services.	12
History	1	Organize historic events and people.	9, 10
	2	Gather historical data from multiple sources.	9, 10
	4	Describe why people settled in specific places.	9, 10

	5	Identify historical figures and explain the importance of symbols.	9, 10
Reading and Writing	1	Use a full range of strategies to comprehend a variety of materials.	All
	2	Write and speak for different purposes and audiences.	All
	3	Write and speak using conventional grammar, usage, sentence structure, punctuation, capitalization, and spelling.	All
	4	Apply thinking skills to reading, writing, speaking, listening, and viewing.	All
	5	Read, locate, select, and make use of relevant information from a variety of sources.	All
Mathematics	1	Use numbers and number sense in problem solving.	11-13
	2	Use graphs in problem solving.	4, 5
	6	Use basic operations in problem solving; use computational techniques and tools.	11-13

Notes:

For all writing, students should use correct writing conventions and good penmanship.

Each student's worksheets will be included in the final trip package for the project.

Allow students to write rough drafts on other paper for paragraphs that should be revised and rewritten.

Assessments:

There are three primary assessments for this project for which rubrics are provided in Appendix B.

1. Overall project assessment.
2. Art project assessment (for project folder).
3. Presentation assessment.

If more frequent assessments are desired, teachers can evaluate individual lessons based on worksheet progress and class participation.

Lesson 1 - Introduction

Lesson Overview:

In this lesson, students will think about and discuss their prior knowledge regarding planning trips and begin to identify the skills and information they needed to plan a trip.

Lesson Objectives: Students will

1. Identify various purposes for travel.
2. Evaluate the task and identify the different skills needed to successfully plan a trip.
3. Identify the geographic tools and resources needed to plan a trip.
4. Learn/review geography vocabulary.

Procedures:

1. Ask students if they have ever gone on a trip, near or far. Why? Discuss.
2. Ask students to brainstorm (note responses on board or chart paper):
 - a. Different reasons to take a trip.
 - b. How people choose a destination. (culture, recreation, business, family, etc.)
 - c. Criteria to consider in choosing a method of transportation for a trip. (distance, time, cost, etc.)
3. Explain that they will each plan an imaginary trip for a family of four to a U.S. destination of their choice outside of Colorado. The project will include comparing the destination with the area where they live.
4. Teach, or review, and discuss the vocabulary (below). Do the *Lesson 1 Vocabulary* worksheet. (Correct in class so students can use for independent practice.)
5. Post and explain *Project Rubric*.
6. If time permits, play hangman using vocabulary and terms from *Geography from A to Z*. Students must guess the word and tell what it means in their own words.
7. Place work in project folders.

Key Vocabulary:

Atmosphere - whole mass of air that surrounds Earth.

Climate - average weather conditions of a particular place or region over a period of years.

Human features - features and patterns of features on the surface of Earth created by humans, including dwellings, crops, roads, machines, buildings, and other cultural elements; synonymous with human characteristics.

Landform - shape, form, or nature of a specific physical feature of Earth's surface (e.g.,

plain, hill, plateau, mountain, peninsula).

Location - position of a point on Earth's surface expressed by means of a grid (absolute) or relative to the position of other places. (Denver is at 39° north latitude, 104° west longitude; Denver is 127 miles southwest of Sterling.)

Physical features - features and patterns of features on Earth's surface caused by physical or natural processes, such as landforms, vegetation, and atmospheric events.

Places - locations that have special features which give them meaning and character and make them different from other locations.

Population - number of people living in a specific area, such as a city, state, or country.

Region - an area with one or more common features which are similar within the area but different from surrounding areas.

Resources and Materials:

Lesson 1 Vocabulary worksheet (1 per student)

Lesson 1 Vocabulary Puzzle (1 per student)

Geography from A to Z: A picture glossary, by Jack Knowlton, or other geography glossary or dictionary

Folders (1 per student) to collect worksheets and maps for the project

Independent Practice: Students complete *Lesson 1 Vocabulary Puzzle* as homework.

Notes:

In Lesson 15, students will make a collage for the project folder cover. They should begin collecting pictures or other materials that represent their destinations to use for this art project. Items should be no larger than about 1 x 1 inches and can be from magazines, photographs, printed web pictures, etc. Remind students each week to be collecting materials for their collages. Small pieces of fabric with a print or texture representative of their destination may also be used.

Lesson Assessment: Vocabulary worksheet and puzzle.

Lesson 2 - Where Shall We Go?

<p>Lesson Overview:</p> <p>In this lesson, students will determine the purposes of their imaginary trips and select destinations.</p>
<p>Lesson Objectives: Students will</p> <ol style="list-style-type: none">1. List at least five purposes for their trips and understand why it is important to identify purposes as a part of decision-making.2. Use personal knowledge, experience, and ideas from others to select a destination that fulfills their purposes.3. Locate their destinations using globes, atlases, or maps.
<p>Procedures:</p> <ol style="list-style-type: none">1. Ask students why they might want to identify their travel purposes before selecting a destination. Discuss.2. Instruct students to use <i>Lesson 2 My Destination</i> worksheet to<ol style="list-style-type: none">a. document the purposes for their trip,b. identify their destinations,c. identify the month in which their trips will occur, andd. write a paragraph justifying the choice of destination in relationship to the purposes.3. Students locate their community and their destination on a map or globe or in an atlas.4. In small groups of 3 or 4, students share the information from their worksheets and show the location of their destination on a map or globe or in an atlas.5. Place work in project folders.
<p>Resources and Materials:</p> <p><i>Lesson 2 My Destination</i> worksheet (1 per student)</p> <p>Globes, atlases, and/or maps</p>
<p>Lesson Assessment: Destination worksheet and group participation.</p>

Lesson 3 - What's a Region?

Lesson Overview:

In this lesson, students will learn what defines a geographic region and how to identify the region in which a particular location is set.

Lesson Objectives: Students will

1. Use physical, human, and economic features to identify and define regions in the U.S.
2. Use globes and maps to identify the locations and regions of their home town and destinations.

Procedures:

1. To activate prior knowledge, ask students to brainstorm the term “region” as it relates to the geography of the U.S. with a partner for 2 minutes. (They may use a dictionary.) Have a representative from each pair present what they think it means.
2. As a whole class exercise, draw a large general map of the school grounds on the board. It should be very general with playground, other outside property, and building(s) with lines noting classroom areas, cafeteria, gymnasium, offices, and other general areas. Each pair copies this onto paper for the next step.
3. Instruct students to use their maps to create regions, or classifications, for the different sections of the facility. They may be directional, functional, grade level, or other classification defined by the students.
4. Ask students to share the different regions they defined. Then, have a representative from each pair go to the board and show the areas that fit their region definitions. (Although teams may define regions similarly, their boundaries may differ.)
5. Show the four U.S. regional map overheads. Discuss. Why might the U.S. Census Bureau have decided on these regions? (population) Ask students if they agree with the boundaries? Why? Would they have placed the states differently or named the regions differently? Why? Are there too many or too few regions? Why?
6. Explain U.S. regions (see Key Vocabulary). Discuss other ways U.S. regions could be defined. Emphasize that regions are defined by people for different purposes.
7. Post the Census Bureau regions on the board or rotate onto overhead for this activity. Distribute U.S. Postal Regions maps (postal regions not relevant to activity) to students. Instruct students to use colored pencils to lightly color the regions, mark the regional boundaries, and label each region above, below, or beside it.

boundaries - black

South - light green

West - yellow

Northeast - lavender

Midwest - light blue

region labels - black

8. Do *Lesson 2 States/Regions Quiz* as whole group, in teams, or individually.
9. Place work in project folders.

Key Vocabulary:

Economic - relates to how people make money. Economic activities involve making, giving out or delivering, and using goods and services.

Region - areas that have one or more common characteristics or features that give them a measure of unity and make them distinct from surrounding areas. Regions are defined by people to help define areas that share similar features. For example, the Rocky Mountain region.

Regions are defined for different purposes and the number of U.S. regions and their boundaries depend upon the purpose for which they are defined. For example, the United States Census Bureau divides the U.S. into 4 regions.

West	South
Midwest	Northeast

Regions may also be defined by time zones.

Hawaii-Aleutian Standard	Mountain Standard
Alaska Standard	Central Standard
Pacific Standard	Eastern Standard

Resources and Materials:

The following U.S. maps from <http://www.eduplace.com/ss/maps/usa.html>

Midwest US Region (overhead)	West US Region (overhead)
Northeast US Region (overhead)	United States: Postal Abbreviations (1 per student)
South US Region (overhead)	

Colored pencils (to lightly color U.S. map so boundaries and states are readable)

Lesson 2 State/Region Quiz (1 per student or, if done as whole group, 1 for teacher)

Timer or stopwatch

Lesson Assessment: Regions quiz.

Lesson 4 - What's It Like Where We Live?

Lesson Overview:

In this lesson, students will analyze and describe the area where they live.

Lesson Objectives: Students will

1. Identify the physical geography of the area in which they live and describe using globes and maps.
2. Identify locations and human features of the area in which they live.
3. Name the continent, country, region, state, and community in which they live.
4. Use graphs to find average temperature and precipitation data.

Procedures:

1. To activate prior knowledge, in small groups, have each student take 2 minutes to describe geographic features of his/her community.
2. As a whole class, discuss and list the various features and facts on the board. Identify which are physical, human, and cultural. Explain and discuss cultural activities, building on that portion of the list, so that students understand the concept and can apply it to the worksheets. (See Key Vocabulary below.) Erase before proceeding to the next activity.
3. If necessary, review the meaning of “population” from Lesson 1.
4. If necessary, review how to read graphs using samples from www.city-data.com, either online or make overheads.
5. If necessary, review how to plot latitude and longitude.
6. In small groups, distribute *Lesson 4 What's It Like Where We Live?* worksheets, 1 for each student. Instruct students to write descriptions of their community in the worksheet categories. Each student will need a worksheet for the project folder.

For the climate and population questions, refer to www.city-data.com. Click on the state, then the city. For towns with populations between 1,000 and 6,000 or less than 1,000, click on that selection before clicking on town. Population is at the beginning of the web page, climate graphs approximately in the middle.
7. Instruct groups to select 2 important features from their descriptions and share with class, explaining why those features are important.
8. Place work in project folders.

Key Vocabulary:

cultural activities - things that a specifically defined group of people do together with some regularity. For example, the people of a particular town or city may participate in such cultural activities as shopping, attending religious services, participating in sports, or

attending events (e.g., sports, movies, concerts). To be considered a cultural activity, it must be common to the group, although not everyone in the group must participate. Many towns have an annual parade or festival. This is a regular activity which many people attend or in which many participate. However, not everyone attends or participates.

e.g. - from the Latin *exempli gratia*, for example. Often used in parentheses when the writer provides examples.

Latitude - imaginary lines drawn parallel to the Equator that tell how far north or south a place is. Areas further away from the equator tend to be cooler and, except in places close to the equator, temperatures are cooler in the winter and warmer in the summer.

Longitude - imaginary lines drawn parallel to the Prime Meridian, vertically from the North Pole to the South Pole, that tell how far east or west a place is.

Plot - locate the lines of latitude and longitude of a specific location on a map or globe.

Resources and Materials:

Lesson 4 What's It Like Where We Live? worksheet (1 per student)

Online access to <http://www.city-data.com>

Overheads of temperature and precipitation graphs from www.city-data.com (optional)

Geography from A to Z: A picture glossary, by Jack Knowlton, or other geography glossary or dictionary

Timer or stopwatch

Lesson Assessment: Lesson worksheet.

Lesson 5 - What's It Like Where We're Going?

<p>Lesson Overview:</p> <p>In this lesson, students will analyze and describe the area around their destinations.</p>
<p>Lesson Objectives: Students will</p> <ol style="list-style-type: none">1. Identify the physical geography of the area around their destinations and describe using globes and maps.2. Identify locations and human features of their destination area.3. Name the continent, country, region, state, and community in which their destinations are located.4. Use graphs to find average temperature and precipitation data.
<p>Procedures:</p> <ol style="list-style-type: none">1. Ask each student to share his/her destination. Write them on the board.2. Discuss different classifications that could be used to partner students based on their destinations (e.g., state, city, population, recreation, history, etc.).3. Select a classification system and partner students.4. Partners discuss and list types of destination features that might be similar and those that might be different. They can use the <i>Lesson 5 What's It Like Where We're Going?</i> worksheet for ideas.5. Review how to use a map scale to calculate distance.6. Each student will complete his/her own worksheet but may consult with partner. For climate and population questions, refer to www.city-data.com as in Lesson 4.7. As a whole class, have students share the most important, impressive, or surprising feature of their individual destinations.8. Place work in project folders.
<p>Resources and Materials:</p> <p><i>Lesson 5 What's It Like Where We're Going?</i> worksheet (1 per student)</p> <p>Computers with online access to research destinations</p> <p>Online access to http://www.city-data.com</p> <p>General reference books with geographical information on the different states</p> <p>Globes, atlases, maps</p> <p>Rulers</p>
<p>Lesson Assessment: Lesson worksheet.</p>

Lesson 6 - Mapping My Destination

Lesson Overview:

In this lesson, students will plot their home town and their destinations on a map of the U.S. and draw the major highways connecting them.

Lesson Objectives: Students will

1. Use map skills to locate their home town and destination town/city on a U.S. map and transfer that information to an outline map.
2. Identify the major highways connecting the cities/towns and transfer that information to an outline map.
3. Identify physical features around the home and destination cities/towns and add that detail to an outline map.
4. Create a map legend to define the map symbols used to represent physical and human features.

Procedures:

1. Ask students to list the different ways they could travel from their home town to their destinations. (automobile, airplane, train, bus)
2. Ask which modes of transportation would use roads and highways? What tool is used to decide which roads and highways to use to get from one place to another?
3. Explain that students will create a roadmap from their home town to their destinations using tools and techniques learned in art classes.
4. Partner students based on their destination regions.
5. Using globes, maps, and the internet, partners discuss and list the types of significant geographical features in the areas surrounding their destinations and which of those features should be marked on their maps. Make a list and design symbols to be used on the maps and in the legends. They may use the *Lesson 5 What's It Like Where We're Going?* worksheet for ideas.
6. Distribute the U.S. Capitals maps, 1 per student. Each student will use colored pencils to:
 - a. Mark and label the location of their home town and destination.
 - b. Draw symbols of significant physical features in appropriate areas around the home town and the destinations, not for the whole U.S.
 - c. Draw the roads and highways that would be used to drive from the home town to the destination. Use different colors to indicate roads that are interstate highways and roads that are not.
7. In the bottom margin of the map page, draw and label a map legend.

8. When maps are complete, each student should have another student (not their partner) review his/her map for all of the elements required. Reviewers should give feedback and ask questions that will enable mapmakers to improve their maps.
9. In class discussion, ask students what they learned from the activity.
10. Place work in project folders.

Key Vocabulary:

Interstate Highway - a complex highway system in the U.S. initiated by President Dwight D. Eisenhower. The highways connect at various points allowing for faster, more efficient and convenient travel by motorized vehicles.

Map Legend - a set of symbols with words explaining them that is attached to a map. The Legend helps readers understand the geographical features represented by the symbols.

Resources and Materials:

U.S. Capitals map from <http://www.eduplace.com/ss/maps/usa.html> (1 per student)

Road atlases (to locate major highways between their home town and destinations)

Globes and maps

Colored pencils

Overhead of p. 37 in *Maps & Globes*, by J. Knowlton, to model map legend

Lesson Assessment: Lesson map with legend.

Lesson 7 - How Do They Compare? Part I

<p>Lesson Overview:</p> <p>In this lesson, students will use their worksheets from Lessons 4 and 5 and map from Lesson 6 to compare and contrast their home town with their destinations.</p>
<p>Lesson Objectives: Students will</p> <ol style="list-style-type: none">1. Use information collected in previous lessons to compare/contrast home town with destinations.2. Write a short essay comparing/contrasting home town and destinations.
<p>Procedures:</p> <ol style="list-style-type: none">1. With partners, instruct students to review lessons 4 and 5 worksheets and discuss the similarities and differences of their home town and destinations for 4 minutes.2. Ask a few students share some of their similarities and differences.3. Distribute the <i>Lesson 7 Compare/Contrast</i> worksheet.4. Explain that students will use lessons 4 and 5 worksheets to complete the comparison table. Write the first draft of a descriptive essay explaining the similarities and differences on notebook paper. They may use information from other lessons to add more detail to the essay.5. Place work in project folders
<p>Key Vocabulary:</p> <p>Compare - to identify features that are common to both.</p> <p>Contrast - to identify features that are different.</p>
<p>Resources and Materials:</p> <p><i>Lesson 7 & 8 Compare/Contrast</i> worksheet (1 per student)</p>
<p>Lesson Assessment: Progress on worksheet.</p>

Lesson 8 - How Do They Compare? Part II

<p>Lesson Overview:</p> <p>In this lesson, students will complete their essays began in Lesson 7.</p>
<p>Lesson Objectives: Students will</p> <ol style="list-style-type: none">1. Use editing and revising skills to improve their essays.2. Use editing and revising skills to proofread partners' essays. Each student should give his/her partner a minimum of 3 suggestions for improvement.3. Students will write the final draft of their essays, using their best penmanship and correct writing conventions.
<p>Procedures:</p> <ol style="list-style-type: none">1. Instruct students to edit and revise their draft essays2. Instruct students to read partners' essays and give a minimum of 3 suggestions on how to improve them by adding, deleting, or clarifying information. Editing ideas may be offered in addition to the 3 suggestions.3. Instruct students to write the final draft of their essays on the worksheet.4. As a whole class, have students share recommendations they received and how it helped them to improve their essays.5. Place work in project folders.
<p>Key Vocabulary:</p> <p>Edit - (for the purposes of this unit) to correct conventions such as spelling, punctuation, and word choice.</p> <p>Revise - (for the purposes of this unit) to improve the content by adding, deleting, or changing the information presented.</p>
<p>Resources and Materials:</p> <p><i>Lesson 7 & 8 Compare/Contrast</i> worksheets from previous lesson</p>
<p>Lesson Assessment: Worksheet.</p>

Lesson 9 - What About History? Part I

Lesson Overview:

In this lesson, students will compare historic facts and information for their home state and destination state using the Internet.

Lesson Objectives: Students will

1. Use research skills to locate historic facts and information for their two states.
2. Use appropriate tools and techniques to replicate the flag of each state and use writing skills to explain the reasons for the colors used on each flag.

Procedures:

1. Ask students 3 or 4 of the questions from the Lesson 9 worksheet. For those they cannot answer, ask how they would go about finding the answers. Discuss the various possible resources.
2. Explain that students will research facts and information to complete a worksheet comparing their home state with their destination states.
3. Instruct students to work with a partner to find the worksheet information for their home state.
4. If students have the same destination state, they may work with a partner to find the worksheet information for their destination states. Otherwise, they will work independently.
5. With the whole class, ask students to share and explain the different research strategies they used to locate information. Ask if they learned any new strategies either from the day's research or from other students.
6. Place work in project folders.

Key Vocabulary:

Area - (for the purposes of this unit) the number of square miles within the borders.

Resources and Materials:

Internet access (see Notes below)

Colorado - <http://www.colorado.gov/colorado-government-links/state-facts-history.html>

<http://usinfo.state.gov/usa/infousa/facts/facts.htm>

History and reference books

Lesson 9 & 10 Compare Histories worksheets (1 per student)

Colored pencils or crayons for flags (avoid heavy markers as they will saturate the paper)

Notes:

Many states have a website that provides facts and history. Also, the infoUSA website has information about all 50 states. To obtain the information requested on the worksheet, students can perform a web search using the state name with the words “facts and history”, or the state name with words describing the specific information needed.

Lesson Assessment: Progress on worksheet.

Lesson 10 - What About History? Part II

<p>Lesson Overview:</p> <p>In this lesson, students will complete their Compare Histories worksheets began in Lesson 9.</p>
<p>Lesson Objectives: Students will</p> <ol style="list-style-type: none">1. Use research skills to locate historic facts and information for their two states.2. Use appropriate tools and techniques to replicate the flag of each state and use writing skills to explain the reasons for the colors used on each flag.3. Use communication skills to share and obtain additional research strategies.
<p>Procedures:</p> <ol style="list-style-type: none">1. As a whole class, ask if any students had difficulty finding specific information. Instruct students to share research and web search strategies that might help others.2. Explain that students will complete their Compare Histories worksheets.3. Instruct students to work with partners or individually, as appropriate.4. As a whole class, ask a few students to<ol style="list-style-type: none">a. show their flags and explain the significance of the colors usedb. share a fact for which the two states were similarc. share a fact for which the two states were very different.5. Place work in project folders.
<p>Resources and Materials:</p> <p>Internet access</p> <p>Colorado - http://www.colorado.gov/colorado-government-links/state-facts-history.html</p> <p>http://usinfo.state.gov/usa/infousa/facts/facts.htm</p> <p>History and reference books</p> <p><i>Lesson 9 & 10 Compare Histories</i> worksheets (partially completed)</p> <p>Colored pencils or crayons for flags (avoid heavy markers as they will saturate the paper)</p>
<p>Lesson Assessment: Worksheet.</p>

Lesson 11 - How Do I Calculate That?

<p>Lesson Overview:</p> <p>In this lesson, students will identify the different math computations they would need to calculate the costs of their trips and use word problems to practice those math skills.</p>
<p>Lesson Objectives: Students will</p> <ol style="list-style-type: none">1. Analyze the types of trip planning information that require the use of mathematics.2. Identify and formulate the types of calculations needed for their trip planning.3. Use knowledge of math operations to select the correct operation for particular calculations.
<p>Procedures:</p> <ol style="list-style-type: none">1. Ask students what types of trip planning information will require that they use mathematics. (distance, costs, time, etc.)2. Ask students which math operations they might need and how they might use them.3. Assign students to small groups of 3 or 4 students each.4. Distribute <i>Lesson 11 How Do I Calculate That?</i> worksheets, 1 for each student.5. Explain that students will complete a math worksheet to demonstrate their analytical ability to identify the correct math operation needed in certain situations and skills in performing the math operations correctly.6. If additional practice is needed, instruct students to create problems for each other.7. Place work in project folders.
<p>Resources and Materials:</p> <p><i>Lesson 11 How Do I Calculate That?</i> worksheets (1 per student)</p> <p>Calculators (optional; 1 per student)</p>
<p>Notes:</p> <p>In preparation for the next lesson, students note the cost of gas at local gas stations. Is it the same everyday? Is it the same at every gas station in town? Is it the same at gas stations in different towns?</p>
<p>Lesson Assessment: Worksheet.</p>

Lesson 12 - How Do We Get There?

Lesson Overview:

In this lesson, students will gather data on two different transportation methods, flying and driving, from their hometown to their destinations which will enable them to compare and select the appropriate method for their individual trips.

Lesson Objectives: Students will

1. Use research skills to collect data on two methods of travel, flying and driving.
2. Identify and use appropriate math operations to calculate transportation costs.
3. Consider the trip purposes that impact their choice of transportation.

Procedures:

1. Ask students what methods of transportation could be used to travel from their hometown to their destinations. Through discussion, identify which are the most common. (flying and driving)
2. Ask students how they would find the costs for flying and driving to their destinations. What information would they need? Where would they find it? What math operations would they use?
3. Ask students how they would use this information to choose a method of travel. (consider both cost and time; on a 9 day trip, each travel day reduces time available for activities at the destination)
4. Conduct a brief (10 minutes) economic discussion about the cost of gas. Students should think about the gas costs they see posted at stations around town.
 - Is the cost of gas the same everyday? at every gas station? in every town?
 - Should the people who extract it from the ground (crude oil) be paid?
 - Should the people who refine the crude oil into automobile gasoline be paid?
 - Should truckers who transport the gasoline from refineries to gas stations be paid?
 - What about the people who own, manage, and work at gas stations; should they be paid?
 - There are also costs for equipment, buildings, trucks, marketing, and other things. Plus, federal, state, county, and city governments charge taxes on gasoline.
 - The amount gas stations charge for each gallon of gas must pay all of these wages, taxes, and other expenses and it can change when any of these other costs change. As of September 2006, the cost breakdown for a gallon of gas is as follows: (U.S. Energy Information Administration, <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>)

19% taxes

15% distribution and marketing

14% refining

52% crude oil

5. If necessary, review converting % to decimal and multiplying.
6. Distribute *Lesson 12 How Do We Get There?* worksheets, 1 for each student. Instruct students to complete the worksheets. Students should write first draft of paragraph on notebook paper, edit and revise, and write final in space provided on worksheet.
Air Travel: Students work with partners or independently to locate airline schedules and costs on the internet at www.expedia.com, www.orbitz.com, or other sites.
Automobile Travel: Students may work with partners but may find that they do not arrive at the same distances and costs. For students who do not know how many miles per gallon their family car gets, use 23.
7. For students unable to complete the worksheet, there should be time during the next lesson to finish.
8. Place work in project folders.

Key Vocabulary:

Crude oil - oil as it is when it is taken from the ground.

Refine - to change something to make it different or better. Oil refiners refine crude oil to be used for different purposes; gasoline for automobiles or heating oil.

Refineries - the buildings and equipment used to refine crude oil.

Taxes - money collected by governments and used for public purposes such as building roads and schools.

Travel days - the number of days spent traveling from home town to destination and back again. If you can leave home and arrive at the destination on the same day, that is 1 travel day. If you leave home and arrive the next day, that is 2 travel days.

Resources and Materials:

Lesson 12 How Do We Get There? worksheets (1 per student)

Calculators (optional; 1 per student)

Internet access

Lesson Assessment: Worksheet.

Lesson 13 - What About Eating and Sleeping?

Lesson Overview:

In this lesson, students will calculate costs for food and lodging based on data from government per diem rate tables.

Lesson Objectives: Students will

1. Use tables to collect data regarding the estimated costs of food and lodging at their destinations.
2. Identify appropriate math operations and use them to calculate totals for estimated food and lodging costs.

Procedures:

1. Ask students to think about the costs they have already gathered for their trips and other costs their travelers will encounter. (There may be a variety of attraction, activity, and local transportation costs depending on their destinations, but those will not be treated in this unit.)
2. Ask students how they would find estimates of what food and lodging costs might be at their different destinations. Discuss.
3. Explain that the federal government has a website with this information. The information is referred to as Domestic Per Diem Rates, which means estimates of what it would cost for food and lodging each day in different U.S. cities.
4. At the website they click on their destination state and then use the table of cities in that state to find estimated costs. They should use the costs for the city closest to their destination. This may require using a map.
5. Use an overhead of the Colorado table to explain the table headings.
 - a) Primary Destination (the city),
 - b) County,
 - c) Max Lodging (hotel or motel cost for 1 room for 1 night, excluding taxes),
 - d) M&IE Rates (amount to budget each day for meals and other small expenses).
 - e) Max Per Diem Rate (Lodging + Meals)
 - f) First and Last Day (ignore)
6. Using the overhead table, ask students to look at Denver and give the cost for 1 night of lodging and for 1 day of meals. Do the same for Montrose or some other city.
7. Distribute *Lesson 13 What About Eating and Sleeping?* worksheets, 1 for each student. Instruct students to complete the worksheets.
8. (There should be time for students to finish yesterday's worksheet.)

9. Place work in project folders.

Key Vocabulary:

Actual costs - what things really cost.

Budget - to set a certain amount of money aside for a specific purpose.

Estimated costs - what you think things will cost.

Lodging - a room or rooms rented for sleeping, such as at a hotel or motel.

Per diem - each day (Latin).

Resources and Materials:

Lesson 13 What About Eating and Sleeping? worksheets (1 per student)

Calculators (optional; 1 per student)

Internet access to www.gsa.gov/perdiem (if preferred, the website has a printer friendly version of this information which can be printed for use in the classroom)

Overhead of Colorado table

State maps

Lesson Assessment: Worksheet.

Lesson 14 - What Do I Pack?

Lesson Overview:

In this lesson, students will use the average temperature and precipitation, along with their anticipated activities, to create a packing list.

Lesson Objectives: Students will

1. Analyze weather and planned activities to determine what kinds of clothes to pack.
2. Use knowledge about destination to create a packing list.

Procedures:

1. Ask students if they have ever packed for a trip? How did they decide what clothes to take? (weather, activities) Did they take things other than clothes? (toothbrush, toothpaste, shampoo, comb and brush, book, games)
2. Split class into two groups. Have one group create a packing list for a trip to the mountains in the winter. Have the other group create a packing list for a trip to the beach in the summer. (5 minutes)
3. As a whole class, compare the two lists. Did they forget anything? Did they include things they wouldn't need? If they were going to a special celebration at their destinations, would that change their packing lists? How?
4. Explain that they will use information about weather (temperature and precipitation) and activities at their destination from their Lesson 5 worksheets to create a packing list. They can mentally picture themselves at different times of the day and night, and participating in different activities and events. Look closely at those mental pictures and see everything they will need. If it's not on the packing list they can't take it!
5. Distribute *Lesson 14 What Do We Pack?* worksheets, 1 for each student. Students complete worksheets independently and then compare with a partner and revise.
6. As a whole class, have each student share the most common item and the most unusual item on his/her list.
7. Place work in project folders.

Key Vocabulary:

Packing list - a list of all the items to be taken on a trip; packed, worn or carried.

Resources and Materials:

Lesson 14 What Do I Pack? worksheets (1 per student)

Notes:

In Lesson 15, students will draw an outline of something that represents their destination and create a collage. They should be thinking about what to draw. Some possibilities are

a map of their destination state, the name of their destination in large outline lettering, or a building, animal, or other object or symbol that is identified with their destinations. They should be sure to bring the small pictures they have been collecting for this purpose.

Lesson Assessment: Worksheet.

Lesson 15 - Let's Make Project Folders!

Lesson Overview:

In this lesson, students will use a variety of materials to make a project folder. The primary feature will be a collage.

Lesson Objectives: Students will

1. Use information and knowledge obtained in earlier lessons to create a collage outline shape symbolic of their destination.
2. Use knowledge of their destinations to analyze materials for selections that represent their destinations.
3. Students will use appropriate tools and techniques to create collages for their project folders.

Procedures:

1. Ask students to state examples of pictures, textures, shapes, and symbols that represent their destinations and explain the connection.
2. Review *Art Project Rubric*.
3. To create their collage project folders, students will:

Step 1 - Take a file folder and open it flat on desk or table with the outside of the folder facing up, the front edge to the right and back edge to the left.

Step 2 - In pencil, draw a large outline of something that represents their destination. (Outline should be as large as possible so that it can be filled with pictures.) Some possibilities are the shape of the destination state, the state bird, tree, flower, animal, or some shape that represents the destination itself. For example, if the destination is Disneyland, the head of Mickey Mouse.

Step 3 - When the student is satisfied with the shape, go over it in a dark bold marker.

Step 4 - Tear or cut the collage materials so that they have rough uneven edges.

Step 5 - Place them on the folder, within the outline. Arrange them creatively as desired to completely fill the outline; they can overlap.

Step 6 - Using white glue, glue pictures and fabric to the folder within the outline. Be sure all edges are glued down. **IMPORTANT:** Glue pictures right to the edge of the folder spine but do not allow pictures to cover the spine. When folded, pictures covering the spine will not lay properly.

Step 7 - Set it aside to completely dry.

Step 8 - Using colored construction paper, cut a shape to be used as the folder label for the destination and student's name. It should be about 3" by 2" but can be any shape that relates to the destination, or a simple rectangle. (ticket shape for a theme

<p>park or a boat shape for a lake destination)</p> <p>Step 9 - Using a pencil, write the name of the destination in large letters. Center it top to bottom and left to right. This is the project title. When satisfied with the neatness and shape of the letters, go over them with a colored marker.</p> <p>Step 10 - Below the destination, write student's name, first and last, in letters a little smaller than the title. Student may write in pencil and go over it with a marker or just write it with a marker.</p> <p>Step 11 - When the folder is dry, glue the title label on the front, positioned so that it covers as little of the collage as possible.</p> <p>Step 12 - When the folder is dry, place all materials from the Unit inside.</p> <ol style="list-style-type: none"> 4. There should be extra time during Lesson 16 for students to complete their folders. 5. If possible, lay completed folders on a flat surface (do not stack) overnight to allow them to completely dry.
<p>Key Vocabulary:</p> <p>Collage - art made by gluing different pictures or materials to a flat surface.</p>
<p>Resources and Materials:</p> <p>Manila file folders, 3-tab (1 per student)</p> <p>Pictures for collage (students have been collecting these since the first lesson)</p> <p>Magazines from which students can cut additional pictures as needed</p> <p>Colored Markers</p> <p>Glue</p> <p>Colored construction paper</p> <p><i>Art Project Rubric</i></p>
<p>Lesson Assessment: Grade art project according to rubric.</p>

Lesson 16 - We Need a Trip Summary!

<p>Lesson Overview:</p> <p>In this lesson, students will use data collected and developed in earlier lessons to create a trip summary.</p>
<p>Lesson Objectives: Students will</p> <ol style="list-style-type: none">1. Use reading and review skills to locate data previously collected and developed.2. Organize information and knowledge from previous lessons into a summary.
<p>Procedures:</p> <ol style="list-style-type: none">1. Ask students how they would locate the information to respond to questions about their travel plans. (find it in their worksheets) Point out that there are many pages of information and ask if there is something they could do to make it easy for others to quickly find the key information about their trips. Discuss. (summary page)2. Explain that they will create a summary that will be the first page in their travel package. Review the information that will be in the summary from <i>Lesson 16 My Trip Summary</i> worksheet.3. Distribute <i>Lesson 16 My Trip Summary</i> worksheet, 1 for each student.4. Instruct students to complete the Trip Summary using their project worksheets.5. When completed, use remaining time as needed to finish project folders.6. Place work in project folders organized with Trip Summary first and lesson worksheets in order behind it.
<p>Key Vocabulary:</p> <p>Bon Voyage - French words meaning good trip. Used to wish a traveler a wonderful travel experience.</p>
<p>Resources and Materials:</p> <p><i>Lesson 16 My Trip Summary</i> worksheets (1 per student)</p>

Lesson 17 - Oral Presentation Preparation

<p>Lesson Overview:</p> <p>In this lesson, students will prepare to present their projects to the class.</p>
<p>Lesson Objectives: Students will</p> <ol style="list-style-type: none">1. Organize their trip project information and ideas to prepare for presenting to the class.2. Use presentation skills to practice with a partner and share ideas for improvement based on rubric.
<p>Procedures:</p> <ol style="list-style-type: none">1. Ask students what parts of their project information they would include in an oral presentation. Would they present every detail in their folders? How would they decide which information to include?2. Ask students how they would begin their presentations. (destination and purpose)3. Explain that they will prepare for oral presentations of their projects by first writing down the facts and information they want to share.4. Review <i>Oral Presentation Rubric</i> and model some possible pitfalls.5. Instruct students to complete the <i>My Trip Presentation</i> worksheets.6. Instruct students to practice presentations with a partner. Distribute <i>Oral Presentation Rubric</i>, 1 for each pair, or show on overhead. Direct students to read it and use it as a guideline for their presentations.7. Each student should time her/his partner to confirm presentation is 3-5 minutes long.8. Each student should give his/her partner 2 suggestions, based on the rubric, for improving the presentation.9. If time permits, begin presentations, 3-5 minutes each.10. Place work in project folders.
<p>Resources and Materials:</p> <p><i>Oral Presentation Rubric</i> (1 per pair of students or overhead transparency)</p> <p><i>My Trip Presentation</i> worksheets (1 per student; optional)</p>
<p>Lesson Assessment: Worksheet. Use rubric to assess presentations.</p>

Lesson 18 - Oral Presentations

<p>Lesson Overview:</p> <p>In this lesson, students will present their projects to the class.</p>
<p>Lesson Objectives: Students will</p> <ol style="list-style-type: none">1. Use appropriate verbal and nonverbal skills to present projects.2. Use organization skills to present material in a clear and orderly manner.3. Use appropriate posture and listening skills as audience member.
<p>Procedures:</p> <ol style="list-style-type: none">1. Direct students to present projects, 3-5 minutes each.2. Review <i>Oral Presentation Rubric</i>.3. Explain appropriate audience listening skills.<ul style="list-style-type: none">• Look at the speaker.• Listen carefully.• Sit still without making noises or faces.• Do not be review own material when someone else is speaking.• Encourage classmates with applause after each presentation.4. Instruct students to verify that material in folders is complete and organized correctly.5. Turn in completed folders for grading.
<p>Resources and Materials:</p> <p><i>Oral Presentation Rubric</i></p>
<p>Lesson Assessment: Use rubric to assess presentations.</p>

Chapter Summary

This unit incorporated a variety of tools and strategies to engage students in a real life task that integrated knowledge and skills acquired from multiple disciplines. Students worked independently, with partners, and in small and large groups to complete their own projects and to assist, advise, and benefit from others. In order to successfully complete all of the work, students had to employ cognitive skills from all six levels of Bloom's Taxonomy (1956, as cited in Ormrod, 1999): a) knowledge, b) comprehension, c) application, d) analysis, e) synthesis, and f) evaluation. In Chapter 5, the author will discuss the contribution and limitations of the project, the assessment of the project by peers, and make suggestions for further development.

Chapter 5

DISCUSSION

The purpose of this project was to integrate multiple academic disciplines in the design of a 9 week geography unit. Within that context, the author endeavored to involve students in activities which would engage both their interest and cognitive skills to achieve a task representative of those they will encounter in real life.

Contribution of the Project

The primary contribution of the project is to enable students to use geography as the key element in a realistic task. Many students struggle to understand what geography has to do with the real world and, in this unit, students have an opportunity to experience its relevance. In addition, the unit shows students that geographic knowledge and skills are not applied in isolation from knowledge and skills acquired through other disciplines. In order for students to effectively assimilate new knowledge, it is important that they begin to grasp the relevance of that knowledge to their lives and how it relates to other classifications of knowledge that they have already acquired and will acquire in the future.

Limitations

The most notable limitation of this project is that the author was not able to teach the unit or observe it being taught by another teacher. The absence of hands on experience with the unit means that there is no demonstrative evidence of its effectiveness, nor does the author have the direct feedback from students that would

possibly facilitate further modifications to and improvements of the unit. Alterations to unit elements such as the amount of time required for each lesson and the unit as a whole, the level of challenge posed for students, and the clarity of direction and materials for both teachers and students, may have benefited further from hands on instruction.

Peer Assessment

The unit was assessed by two peers who brought divergent perspectives to the assessment process. One assessor, Teacher A, has 4 years of teaching experience in K-6 education in a private school located in a large city. The other, Teacher B, approached the unit from the perspective of 30 years in K-6 public education, during which she taught students from multiple grade levels in a rural Colorado community.

The author requested that these professionals review and critique the unit, focusing primarily on three questions.

1. Are the unit format and content sufficiently teacher friendly to allow for easy implementation?
2. Are the approach and materials age-appropriate for 4th grade students, both for their cognitive development and personal experience?
3. Is the time allotted to complete the unit adequate?

In addition to these specific questions, the author requested general feedback regarding the clarity of guidance directed to teachers and of the materials and resources provided for students.

In general, the responses of both teachers were similar, with some variations in the details of their feedback. They each expressed enthusiasm for the realistic topic and the practical details students would be required to research and develop. They also

agreed that, although the general progress of the unit would be the same throughout the class, students would benefit from making independent decisions at different points in the unit and then proceed to individualize their projects based on their own decisions. Both reviewers noted that the unit would be a challenge for students and that they would have to use both personal experience and knowledge from a variety of disciplines to bring their projects to successful completion.

Teacher A particularly noted the value of the clear and specific plans provided for teachers. She indicated that the lesson plan format and detailed procedures would make the unit easy to teach. Teacher B agreed that the unit was detailed and well organized. Teacher B particularly appreciated that the use of summaries and overviews would allow a teacher to customize the unit for individual students with relative ease, if such was necessary. Each teacher asked questions about specific lesson procedures and activities that enabled the author to make revisions for clarification.

As she reviewed the student worksheets, Teacher A expressed appreciation that the materials supported and directed the path of the unit and reduced the need for excessive teacher preparation time. Both teachers commented on the value of repetition and practice in some of the lessons, as well as the advantages for student learning in the progression from general to more specific ideas and concepts as they accumulate data and develop information.

In addition to identifying some strengths and benefits in the unit, the reviewers aided the author by identifying some specific weaknesses. Teacher B suggested that a class may include a few students who are unable to complete the entire project but that the organization of the unit would allow teachers to direct those students to the most

important elements, enabling them to accumulate sufficient data and information to complete a modified version of the project. In such cases, the unit overview and the summary and presentation worksheets would help the teacher to identify the most critical elements of the unit project. Each teacher noted specific terms or concepts (e.g., economic activities, cultural activities, population) with which 4th grade students may not be familiar and recommended that the author either add instruction to address them or note them as prerequisites. They also noted lesson procedures and worksheet instructions which needed clarifications in the wording.

Generally, reactions from the peer assessors were positive and enthusiastic. Teacher A expressed a desire to teach the unit and Teacher B described it as challenging, interesting, and fun.

Recommendations for Further Development

This author recommends that further development of geography instruction through interdisciplinary learning be pursued by the integration of teaching and learning at a variety of levels. A simple integration of disciplines, such as geography and mathematics, on a daily basis may prepare students to better enjoy and benefit from more complex interdisciplinary units, such as the one presented here. The combination of geography and reading may be particularly practical. It is important that students learn to read and make sense of information in a variety of genres, and geography is frequently an important element in understanding both fiction and nonfiction. The practice of regular interdisciplinary instruction may also serve to better prepare students for the real life contexts in which they will use their acquired knowledge, both in more advanced academic settings and beyond academia.

In addition to the integration of disciplines in daily lesson planning, students may benefit from the development and use of interdisciplinary games and activities. Many teachers struggle to fill transitional times (e.g., before and after recess, while waiting in lines, indoor recesses during inclement weather) productively or to provide activities for students, as a break from intense study, which are both fun and educational. The use of games and activities which integrate geography with other disciplines may motivate students to learn so they can win and also make learning fun. By the use of linked content and progression of difficulty, teachers may also use sets of games and activities to reinforce specific concepts so that students are better prepared to use them for more serious purposes.

Project Summary

Geographic knowledge and skills are important both in academia and in everyday life. They are intrinsic to the successful implementation of life skills and a responsible understanding of and participation in one's community, nation, and world. The need for improved geography instruction is evident from research conducted over the past few decades, and it is this author's opinion that geographic knowledge and skills are most effectively assimilated when presented in a realistic context. Such a context includes knowledge and skills from other disciplines that lend relevance and meaning to the study of geography.

Although many educators agree that geography instruction is important, it is often overlooked in the push to focus on disciplines that are addressed in standardized tests. The purpose of this project was to demonstrate, through an interdisciplinary geography unit, that educators can effectively address geography instruction without detracting from

instruction in other subjects. In addition to providing instruction in multiple disciplines, interdisciplinary instruction helps students to understand the practical application of knowledge and skills in real life situations and recognize that they employ knowledge from several disciplines when they engage in problem-solving activities. It is hoped that this effort will encourage other educators to seek out more opportunities for interdisciplinary instruction which incorporates geography.

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APPENDIX A
Lesson Worksheets

Lesson 1 - Vocabulary**Name**

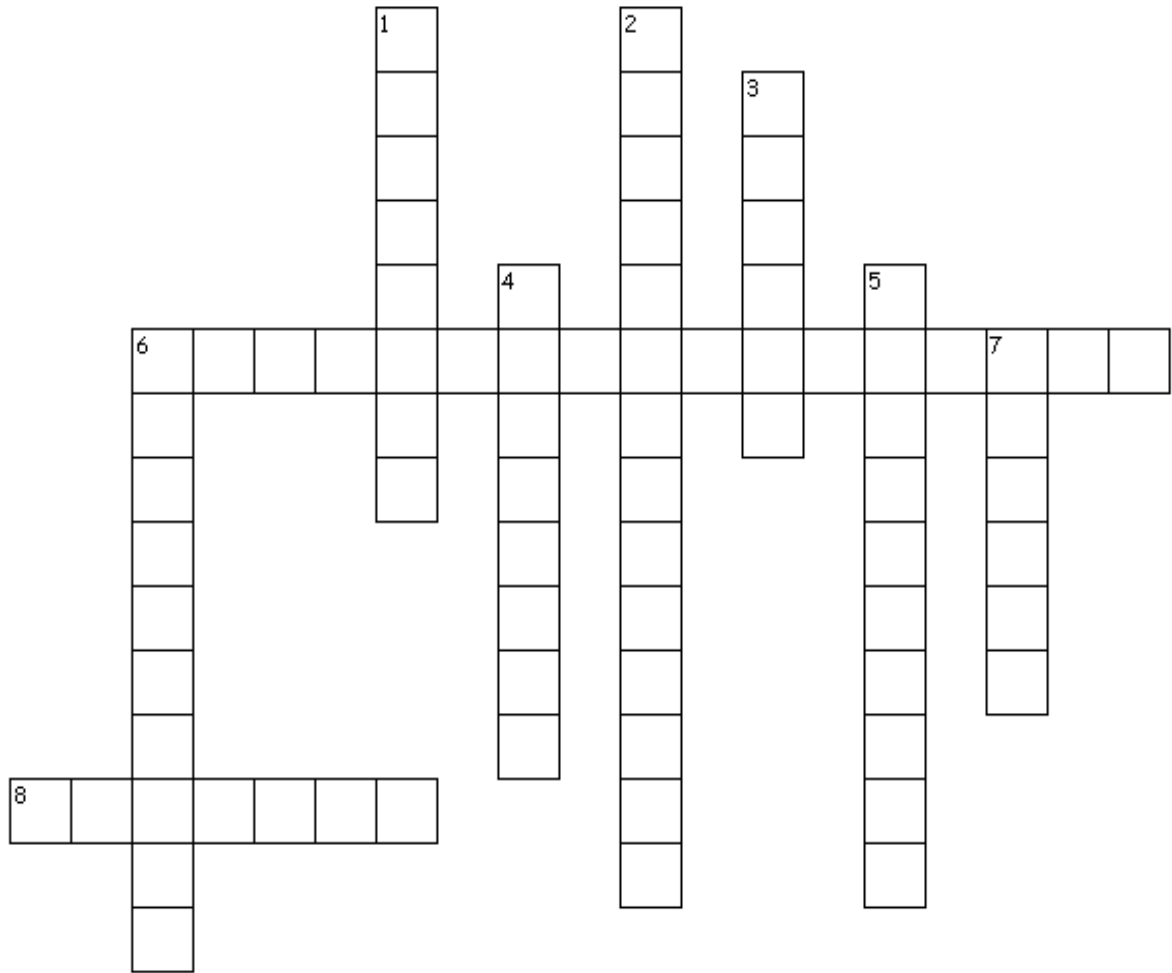
On the blank line next to each definition write the word from the word bank below that fits that definition. Each word can be used once.

Atmosphere	Landform	Place
Climate	Location	Population
Human Features	Physical Features	Region

1. _____ Features and groups of features on the surface of Earth created by humans, such as dwellings, parks, farms, roads, machines, buildings, and other manmade things.
2. _____ An area with one or more common features or characteristics which are similar within the area but different from surrounding areas.
3. _____ Locations that have specific characteristics which give them meaning and character and make them different from other locations.
4. _____ The position of a point on the surface of Earth described in relation to other places or described by its latitude and longitude.
5. _____ The number of people living in a specific area, such as a city or state.
6. _____ The whole mass of air that surrounds Earth.
7. _____ Characteristics of the surface of Earth that are caused by physical or natural processes, such as landforms, vegetation, and atmospheric events.
8. _____ The average weather conditions of a particular place or region over a period of years.
9. _____ The shape, form, or nature of a specific physical feature of the surface of Earth.

KEY

1. Human Features
2. Region
3. Place
4. Location
5. Population
6. Atmosphere
7. Physical Features
8. Climate
9. Landform



Across

- 6. Features on the surface of Earth caused by physical or natural processes.
- 8. The average weather conditions of a particular place.

Down

- 1. The position of a point on the surface of Earth.
- 2. Characteristics of the surface of Earth created by humans.
- 3. Locations that have special features that make them different from other locations.
- 4. The shape, form, or nature of a specific physical feature of the surface of Earth.
- 5. The mass of air that surrounds Earth.
- 6. The number of people living in a specific area.
- 7. An area with one or more common features which are similar within that area but different from surrounding areas.

KEY

Across

6. physical features (a blank space between the words)
8. climate

Down

1. location
2. human features
3. place
4. landform
5. atmosphere
6. population
7. region

Lesson 2 - My Destination

Name _____

1. List five purposes for your imaginary trip. These are reasons for taking the trip and what you want the family to accomplish on the trip.

1 - _____

2 - _____

3 - _____

4 - _____

5 - _____

2. Based on my purposes listed above, my destination is

3. Based on my purposes listed above, my trip will take place during the month of

4. Write a 3-5 sentence paragraph explaining how your destination fits with your purposes. Be specific. Use the back of the paper if you need more room.

Lesson 3 - States/Regions Quiz

Name _____

1. In which region is the state of Maine? _____
2. In which region is the state of Colorado? _____
3. Which state is farthest north in the West region? _____
4. Which state is farthest east in the West region? _____
5. Which region has the most states? _____
6. Which region has the fewest states? _____
7. Which regions have states that share a border with Canada?

8. Which regions have states that share a border with Mexico?

9. Which region has the state that is closest to Cuba? _____
10. Which region has states on the Atlantic Ocean? _____

BONUS QUESTIONS

12. Which region contains the state that is closest to Russia? _____
13. Name the state that is closest to Russia. _____

KEY

1. Northeast
2. West
3. Washington
4. Colorado
5. South
6. West
7. West, Midwest, and Northeast
8. West and South
9. South
10. South and Northeast

BONUS West

12. West
13. Alaska

Lesson 4 - What's It Like Where We Live?

Names: _____

Physical Features - list features of the physical geography where you live. Examples: hill, mountain, ocean, river, stream, plain, peninsula, plateau, forest, woods, cactus, other types of natural vegetation (i.e., plants). These should be natural characteristics, not man-made.

_____	_____
_____	_____
_____	_____

Human Features - list features of the area where you live that were created by humans. For example: agriculture, roads, buildings designed for different purposes (e.g., schools, businesses, homes, factories, barns, places of worship).

_____	_____
_____	_____
_____	_____

Population - What is the population of your community? _____

Climate - What is the climate of your home town for your month of travel?

Average daily high temperature _____

Average daily low temperature _____

Average precipitation for the month _____

Latitude/Longitude - Using the lines of latitude and longitude on your map, plot the location of your town or city.

My town/city is at _____ degrees north latitude and _____ degrees west longitude.

Where am I - On the lines provided, write the names of your community (town or city), state, region, country, and continent.

My community is _____.

My state is _____.

My region is _____.

My country is _____.

My continent is _____.

Local transportation - List the different kinds of transportation available in your community for people and goods, such as agricultural produce or manufactured products.

_____	_____
_____	_____
_____	_____

Cultural activities - List the different cultural activities in your community (e.g., museums, plays, concerts, opera, movie theaters, spectator sports events).

_____	_____
_____	_____
_____	_____

Recreational activities - List the different recreational activities in your community (e.g., sports, theme parks).

_____	_____
_____	_____
_____	_____

Economic activities - List the different types of economic activities (ways people make money) in your community (e.g., agriculture, ranching, businesses, transportation).

_____	_____
_____	_____
_____	_____

Lesson 5 - What's It Like Where We're Going?

Name: _____

Physical Features - list features of the physical geography of your destination. Examples: hill, mountain, ocean, river, stream, plain, peninsula, plateau, forest, woods, cactus, other types of natural vegetation. These should be natural characteristics, not man-made.

_____	_____
_____	_____
_____	_____

Human Features - list features of your destination that were created by humans. For example: agriculture, roads, buildings designed for different purposes (e.g., schools, businesses, homes, factories, barns, places of worship).

_____	_____
_____	_____
_____	_____

Population - What is the population of your destination? _____

Climate - What is the climate of your destination for your month of travel?

Average daily high temperature _____

Average daily low temperature _____

Average precipitation for the month _____

Distance - What is the distance from your home town/city to your destination? Use the map scale to calculate the distance.

The distance from my town to my destination is _____ miles.

Latitude/Longitude - Using the lines of latitude and longitude on your map, plot the location of your destination.

My destination is at _____ degrees north latitude and _____ degrees west longitude.

Where am I going - On the lines provided, write the names of your destination community (town or city), state, region, country, and continent.

My destination's community is _____.

My destination's state is _____.

My destination's region is _____.

My destination's country is _____.

My destination's continent is _____.

Local transportation - List different kinds of transportation available at your destination for people and goods, such as agricultural or manufactured products.

_____	_____
_____	_____
_____	_____

Cultural activities - List the different cultural activities at your destination (e.g., museums, plays, concerts, opera, movie theaters, spectator sports events).

_____	_____
_____	_____
_____	_____

Recreational activities - List the different recreational activities at your destination (e.g., sports, theme parks).

_____	_____
_____	_____
_____	_____

Economic activities - List the main types of economic activities (ways people make money) at your destination (e.g., agriculture, ranching, businesses, transportation).

_____	_____
_____	_____
_____	_____

Using information from the *Lesson 4 What's It Like Where We Live?* and *Lesson 5 What's It Like Where We're Going?* worksheets, complete the table below.

Comparing Geographic Features of My Home Town and My Destination		
1. What are the three main physical features of each place?		
Home State	Destination State	
2. What are the three main human features of each place?		
Home State	Destination State	
3. What is the population of each place?		
Home Town _____	Destination _____	
4. What is the climate of each place in your travel month?		
	Home Town	Destination
Average daily high temperature	_____	_____
Average daily low temperature	_____	_____
Average monthly precipitation	_____	_____

5. What are the latitude and longitude of each place?

	Home Town	Destination
Latitude	_____ degrees north	_____ degrees north
Longitude	_____ degrees west	_____ degrees west

6. Where is each place located?

	Home Town	Destination
Community	_____	_____
State	_____	_____
Region	_____	_____
Country	_____	_____
Continent	_____	_____

7. What are the three main types of transportation in each place?

Home State	Destination State

8. What are the three main types of cultural activities in each place?

Home State	Destination State

9. What are the three main types of recreational activities in each place?	
Home State	Destination State
10. What are the three main types of economic activities in each place?	
Home State	Destination State

Descriptive Essay: Using information from your comparison table above, write an essay comparing and contrasting your home town and your destination. Write the first draft on notebook paper. Edit and make revisions. Write the final on the lines below.

Lessons 9 & 10 - Compare Histories

Name _____

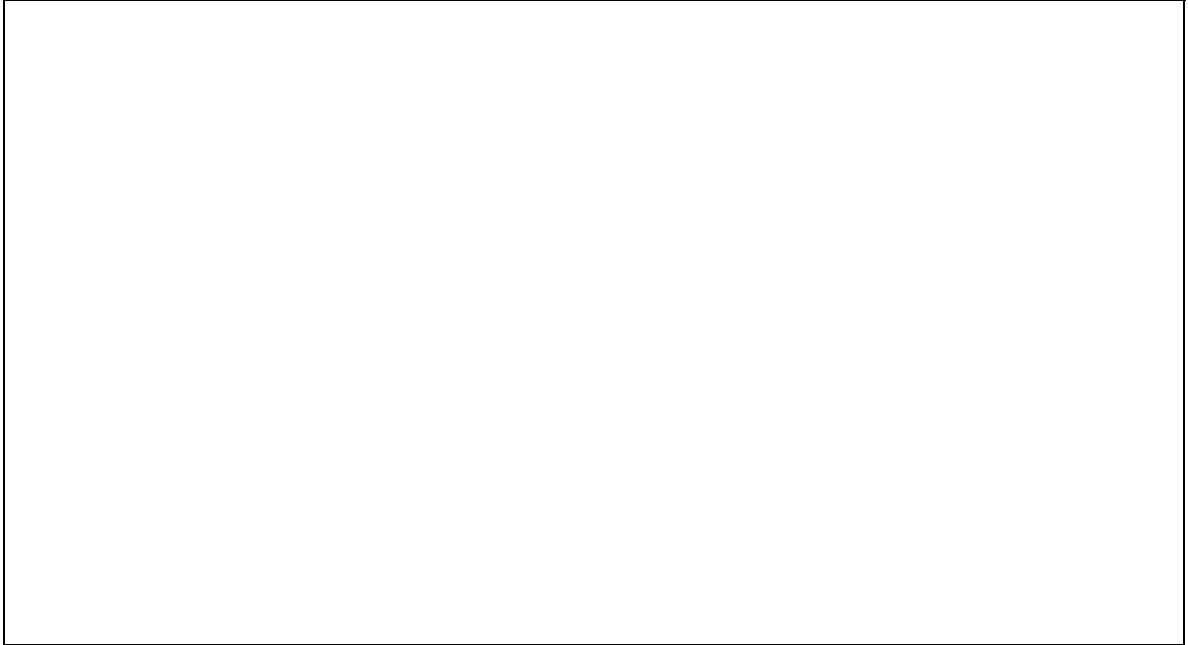
Using information from the Internet, reference books, and history books to find and complete the following information.

Compare the Histories of My Home Town and My Destination	
My home state is _____.	
My destination state is _____.	
1. What Native American groups lived in each place?	
Home State	Destination State
2. When and why did the first settlers come to each place?	
Home State	Destination State
3. When did each place become a state?	
Home State	Destination State
4. What is the nickname of each state? What does it mean?	
Home State	Destination State

5. What is the state bird for each state? Why?	
Home State	Destination State
6. What is the state flower for each state?	
Home State	Destination State
7. What is the area of each state in square miles?	
Home State	Destination State
8. Who was the first governor of each state?	
Home State	Destination State
9. Who is the current governor of each state?	
Home State	Destination State
10. Were any Presidents of the United States born in either state? If yes, list their names in the appropriate box.	
Home State	Destination State
11. Were any other famous people born in either state? If yes, list their names in the appropriate box.	
Home State	Destination State

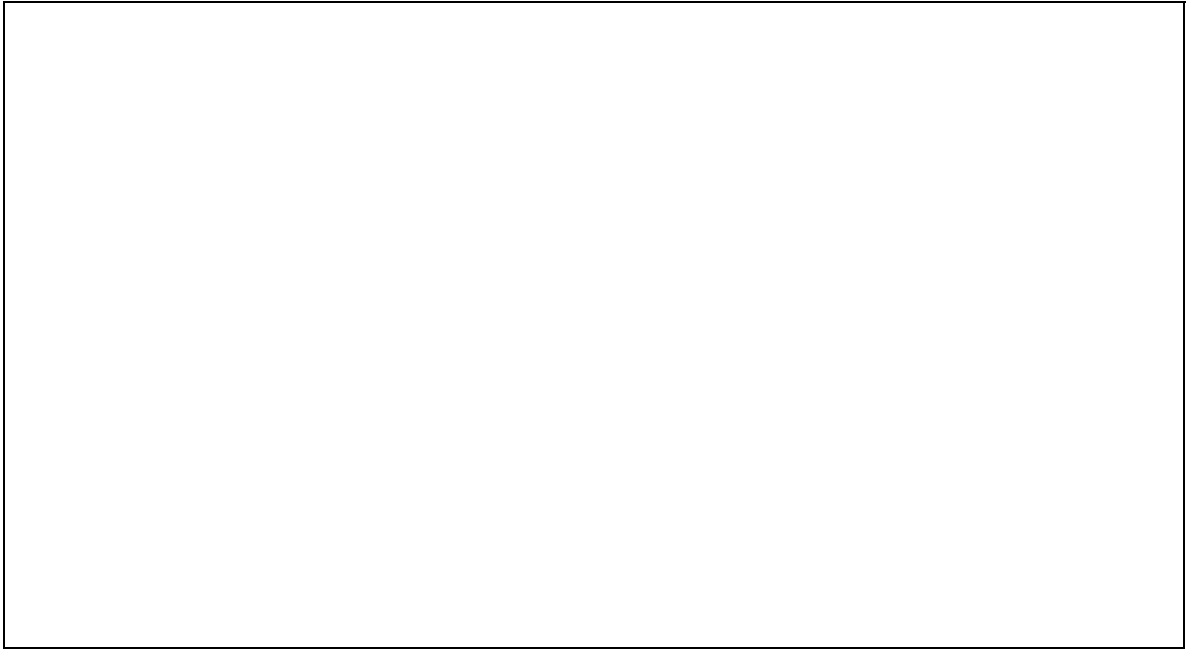
12. What is the capital of each state?	
Home State	Destination State
13. What year did women get the right to vote in each state?	
Home State	Destination State
14. List the states that border each state.	
Home State	Destination State

15. Draw and color the flag of each state. The boxes provided should be used as the outlines for the flags; the flags will fill the boxes. In the box below each flag, write the name of the state and explain the symbolic meaning of the colors used in the flag.



Above is the flag of _____, my home state.

A large, empty rectangular box with a thin black border, intended for writing the name of the state and explaining the symbolic meaning of the colors used in the flag.



Above is the flag of _____, my trip destination.

Lesson 11 - How Do I Calculate That? Name _____

The following word problems represent the kinds of information needed to plan a trip. Read each problem. First, identify the operation or operations that will be needed to solve it. Then, solve the problem. Sometimes you will need a number from an earlier problem to solve the new problem. Show your work. All problems will relate to the situation described in the next paragraph.

School is out and it's summer, at last. Hurrah! Sharon and Brady have been begging their parents, Mr. and Mrs. Trekker, for a family trip to the Grand Canyon in Arizona. Mr. and Mrs. Trekker have agreed that it is a good idea but, before they make a decision, Sharon and Brady will have to give their parents more information about how much it will cost.

If the Trekkers go on this trip, they will be away from home for 9 days and 8 nights.

Sat.	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
------	------	------	-------	------	--------	------	------	------

Example: First, Mr. and Mrs. Trekker want to know how much it will cost to get there. From their home in Colorado to Grand Canyon National Park is 693 miles. How many miles will they have to drive roundtrip (there and back)?

Check which math operation(s) Sharon and Brady will use. (The (s) means that they might use one operation or they might use more than one. Check all the operations they will need to solve the problem.)

Addition Subtraction Multiplication Division

693 miles there and 693 miles back

$693 \times 2 = \underline{1,386 \text{ miles}}$

1. Now that they know it is 1,386 miles round trip, they need to figure out how many gallons of gas they will need. Mr. and Mrs. Trekker's car can go 22 miles for each gallon of gas. How many gallons of gas will they need for the trip?

Check which math operation(s) Sharon and Brady will use.

Addition Subtraction Multiplication Division

2. Next, Brady and Sharon must figure out how much gas will cost for the trip. At \$2.50 per gallon, how much will it cost for enough gas to drive round trip?

Check which math operation(s) Sharon and Brady will use.

Addition Subtraction Multiplication Division

3. Brady and Sharon gave this information to their parents. Then, Mr. and Mrs. Trekker asked how long it would take to get there. "After all," they said, "we can drive 70 miles an hour for 5 hours a day." Now Sharon and Brady must figure out how many days of driving it will take to get there and to get back, but first they must calculate how many miles they will drive in one day.

Check which math operation(s) Sharon and Brady will use.

Addition Subtraction Multiplication Division

4. “Now that we know how many miles we can drive each day, all we do is divide 1,386 by that number,” said Sharon. “Wait a minute,” said Brady, “we can’t do that. We’ll drive half of those miles going to the Grand Canyon and half coming back home, so we have to figure out how many days it will take us to get there and how many to get home, right?” How many days will it take the Trekker family to drive each way? (Round your answer.)

Check which math operation(s) Sharon and Brady will use.

Addition Subtraction Multiplication Division

5. When Brady and Sharon shared that information, their parents said, “Wow, you must really be doing well in your math classes to be able to figure these things out! It sounds like we’ll have to find someplace to stay near the Grand Canyon for 6 nights. Would you please find lodging and let us know how much that will cost?” Sharon and Brady checked the Internet and found the Buffalo Lodge for \$75.00 per night and the Canyon Inn for \$59.00 per night. How much would it cost to stay in each of these places for the 6 nights? Which is cheaper?

Check which math operation(s) Sharon and Brady will use.

Addition Subtraction Multiplication Division

6. “Hey,” said Sharon, “did you notice this? At the Canyon Inn we would need two rooms; one for mom and dad and one for us. But, at the Buffalo Lodge we could all stay in one room.” “That makes a difference,” said Brady. “We’d better compare those again.” Find out how much it would cost for all 4 of the Trekkers to stay at the Buffalo Lodge for 6 nights and at the Canyon Inn for 6 nights. Which is cheaper?

Check which math operation(s) Sharon and Brady will use.

Addition Subtraction Multiplication Division

7. “Thanks for comparing those to find the one that costs less,” said their parents. “We should budget \$25 per day, per person, for food. How much will that come to for all 9 days that we’ll be traveling?”

Check which math operation(s) Sharon and Brady will use.

Addition Subtraction Multiplication Division

8. “That’s great,” said their parents when Brady and Sharon told them how much food would cost. “We guess the only thing left to do is to calculate the total. Let us know how much that will be and then we’ll give you our decision.”

Check which math operation(s) Sharon and Brady will use.

Addition Subtraction Multiplication Division

Gas _____

Lodging _____

Food _____

TOTAL _____

KEY

1. Division; 63 gallons
2. Multiplication; \$157.50
3. Multiplication; 350 miles per day
4. Division; 693 each way; Division; 2 days each way
5. Multiplication; \$450.00; Multiplication; \$354.00; Canyon Inn
6. Multiplication; \$450.00; Multiplication; \$708.00; Buffalo Lodge
7. Multiplication; \$900
8. Addition; \$1,507.50

Lesson 12 - How Do We Get There?

Name _____

In planning your trip, you must determine the best way to travel from your home town to your destination. Gather the information requested below and then calculate the total costs. Use this information to decide which method of transportation you will use for your trip plan. Think about cost and length of time to get there and back when making your decision.

Air Travel

1. How much will it cost for your family of 4 to travel by air?

Cost for each roundtrip ticket: \$ _____

Cost for the whole family: \$ _____

2. How many hours will it take to travel by air?

How long will it take to drive to the airport? _____ hrs _____ mins

How long is the flight? _____ hrs _____ mins

How long will it take to drive _____ hrs _____ mins
from the airport to your lodging?

Many airports suggest that you arrive 1 hour and 30 minutes before the flight departure time. Include that in calculating your travel time.

The total travel time to fly one way would be _____ hrs _____ mins
(Remember to convert minutes to hours where appropriate.)

The total travel time to fly both ways would be _____ hrs _____ mins

Summary

Travel by air will cost \$ _____ and take _____ hrs _____ mins

Automobile Travel

1. How much will it cost for your family of 4 to drive to your destination?

My destination is _____ miles from my home town.

Our car can go _____ on a gallon of gas.

It will take _____ gallons of gas to get to my destination.

If gas costs \$_____, it will cost \$_____ for enough gas to get there.

For the round trip, gas will cost \$_____.

2. How many hours or days will it take to travel by automobile?

If we drive 400 miles a day, we will need to spend _____ days traveling to our destination and the same number to get home again.

The total number of days to travel round trip will be _____.

Summary

Travel by car will cost \$_____ in gas and take _____ days.

Cost of Gas

According to the U.S. Energy Information Administration, the cost of a gallon of gas is made up of:

- 19% taxes
- 15% distribution and marketing
- 14% refining
- 52% crude oil

If a gallon of gas cost \$2.38, show how much would be for
(round answers to the nearest penny and make sure the total equals \$2.38)

taxes	\$ _____
distribution and marketing	\$ _____
refining	\$ _____
crude oil	\$ _____
Total	\$ _____

KEY

taxes: \$0.45

distribution and marketing: \$0.36

refining: \$0.33

crude oil: \$1.24

Lesson 13 - What About Eating and Sleeping?

Name _____

Use the Domestic Per Diem Rates website to find the estimated costs for food and lodging at your destination.

1. This is a 9 day trip. How many days will you use traveling there and back? _____. Subtract the number of days you will be traveling to get the number of days you will be at your destination and for which you will need food and lodging.

Sat.	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
------	------	------	-------	------	--------	------	------	------

How many nights of lodging will you need at your destination city? (Count the number of nights you will be at your destination.)

_____ nights

For how many full days will you need to eat at your destination city? (Count the day you arrive and the day you leave as half days.)

_____ days

2. What is the estimated per diem lodging cost for your city? \$_____

3. What is the estimated per diem meals cost for your city? \$_____

4. Using information from items 1 and 2, what is your total estimated lodging cost at your destination? (Show your work on the back.)

\$_____

5. Using information from items 1 and 3, what is your total estimated meal cost at your destination? (Clue: Multiplying the number of days by the per diem meal cost will give you the total for 1 person.) (Show your work on the back.)

\$_____

Lesson 14 - What Do I Pack?

Name _____

Using your Lesson 5 worksheet, complete the requested information and use it to create your own packing list.

Climate - What is the climate of your destination for your month of travel?

Average daily high temperature _____

Average daily low temperature _____

Average precipitation for the month _____

Activities - List at least 5 different activities you will do on your trip. Be specific. For example, if you plan to play sports, don't just write "sports". Give the specific sports.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Packing Lists - On the back, make your own packing list. Consider that you can only take 1 medium-sized suitcase full of your belongings. When you have finished, partner with another student and compare your lists. Revise your own list to add other things you need to take, or delete things you can leave at home.

Lesson 16 - My Trip Summary

Name _____

Destination _____

It is in the state of _____

The purpose of my trip is to _____

Distance (roundtrip) _____

Month of Travel _____

Method of Travel _____

Average daily high temperature _____

Average daily low temperature _____

Average precipitation for the month _____

To reach the destination, we will travel by _____ car _____ air _____ (circle one).

We will spend _____ of our 9 day trip traveling there and back.

The estimated trip costs for all 4 travelers are:

Item	Cost
Roundtrip travel	\$ _____
Lodging	\$ _____
Food	\$ _____
TOTAL TRIP COST	\$ _____

Lesson 17 - My Trip Presentation

Name _____

My destination is _____, in the state of _____.

The purpose of my trip is to _____

We will travel in the month of _____ when the daytime temperatures should be about _____ degrees. My destination is _____ miles from home and it will take us _____ day(s) to get there by _____ (car or air). To reach the destination, we will travel by _____. We will spend _____ (days or hours) of our 9 day trip traveling there and back. In total, the trip will cost about \$_____.

I chose this destination because _____

_____.

Three of the most important facts about this destination are _____

_____.

Three of the most interesting things to do there are _____

_____.

[Show the project folder and explain several of the pictures and how or why they represent your destination.]

[At the end, ask if the audience has any questions. End by saying “Thank you for your attention” or something similar so the audience knows you are finished.]

APPENDIX B

Unit Rubrics

Project Rubric

Total Possible = 20

	1	2	3	4
Worksheets	Some are missing or incomplete.	All are included but have minimal or incomplete information.	All are included and complete.	All are thoroughly and thoughtfully completed.
Quality of Information	Difficult to find specific information.	Information is unclear or incomplete.	Information is adequate.	Information is specific and thorough.
Grammar, Spelling, & Punctuation	Frequent errors.	More than 10 errors.	Fewer than 5 errors.	No errors.
Interest Level of Short Answer and Paragraphs	Too brief. Many items need clarification and more descriptive vocabulary.	Vocabulary is unvarying. Limited descriptive vocabulary.	Vocabulary is varied but could be more descriptive.	Vocabulary is varied and vividly descriptive.
Neatness	Illegible writing. Pages disorganized and torn or soiled.	Legible but sloppy writing, print too small or large. Pages mostly neat and in order.	Writing legible and neat. Pages clean and neatly organized.	Good penmanship. Pages well organized without tears or folds and unsoiled.

Art Project Rubric

Total Possible = 16

	1	2	3	4
Design Elements	Student did the minimum or did not complete the project.	Student did the project adequately but project shows little or no planning; pictures are somewhat related to destination.	Student planned sufficiently; selected pictures adequately; used space adequately; completed project according to instructions.	Student planned and selected pictures carefully; used space effectively; went beyond the basic requirements in the instructions.
Creativity / Originality	Student used little or no original thought in planning and design.	Student used limited originality; primarily based work on ideas from others.	Student blended originality with ideas from others.	Student tried unique combinations; used original ideas.
Effort	Student did not finish the work satisfactorily or finished with minimum effort.	Student completed the work but could have improved it with more effort or chose an easy project and worked carelessly.	Student completed work well but with a little more effort it could have been outstanding.	Student did a thorough job, using detail and finishing touches that make it outstanding.
Quality	Work shows poor or sloppy craftsmanship.	Work was average but not as good as it could have been; a bit careless.	With a little more effort and care, work could have been outstanding; lacks some finishing touches.	Student worked carefully and patiently to produce the best work possible.

Oral Presentation Rubric

Total Possible Points = 28

	1	2	3	4
Eye Contact	Does not try to look at audience, reads entire report.	Looks at a few people in the audience a few times.	Occasionally looks at the audience.	Constantly looks around the audience.
Posture	Slumps through-out presentation or leans on something.	Shifts back and forth and slumps periodically.	Stands up straight most of the time.	Stands up straight with both feet on the ground.
Enthusiasm	Shows no interest in the topic.	Shows some interest but some negativity.	Shows positive feeling about the topic.	Shows strong, positive feeling about the topic throughout the presentation.
Speech and Vocalized Pauses (uh, well uh, um)	Mumbles, uses many vocalized pauses, confusing.	Frequent mumbling and vocalized pauses, unclear, not engaging.	Speaks clearly but some vocalized pauses, clear but not engaging.	Speaks clearly with no vocalized pauses, organized and engaging.
Introduction	Destination and travel purpose unclear or not presented at the beginning.	One or the other unclear or not presented at the beginning.	Vaguely presents both at the beginning.	Clearly explains both at the beginning.
Time Frame (3-5 minutes)	Presentation is less than 2 minutes.	Presentation is more than 5 minutes.	Presentation is within required timeframe but student drags or speeds up to make it fit.	Presentation fits nicely in the required timeframe.
Visual Aid (project folder)	Does not use collage project folder.	Uses but does not explain well.	Explains clearly, does not make it interesting.	Enhances the presentation, well explained and interesting.