

Best Practices of Technology Integration

Title: Touring the Regions of the United States

Submitted by:

Name: Jody Payne

School Building: Bartlett Elementary School

School District: South Lyon Public Schools

School Address: 350 School Street
South Lyon, MI 48178

E-mail Address: jodypayne@hotmail.com

Subject Areas: Social Studies, Mathematics, and Language Arts

Intended Grade Level: Fifth grade (but may be adapted to curriculum covering Michigan or community by slightly altering the focus of the project)

Description: This project provides a real-world, hands-on experience through which students will learn more about the regions of the United States, use maps, research on the Internet, use measurement and estimation, review basic arithmetic and calculator skills, and use spreadsheets and publishing software to organize and present their research.

Narrative: This project eliminates the traditional first unit found in the majority of fifth grade social studies textbooks, Regions of the United States. My students (and I!) have always found this unit to be extremely dry, providing very little incentive to learn anything beyond the cut-and-dry facts about each region. The lack of context and the inability to speak to the things that 10-year-olds are interested in fails to raise the interest level of the students, resulting in a lower level of learning.

Instead, I have found that kids really enjoy studying a different region of the United States when it is put into the correct context. Instead of telling them about every region, I let them plan a trip around the United States where they must stop in at least one region outside of the Midwest. They get to choose the places to visit (at least 3 stops), what to see there, and the route to take. By doing additional research on places that they are interested in visiting, students are able to get information about the regions of the United States that is interesting to them yet also covers the information required by our district curriculum.

Another task at the beginning of the year is to review basic arithmetic and calculator skills. This project allows me to assess each student's arithmetic abilities and calculator

skills without the tediousness of decontextualized worksheets. It also provides a great lead-in to my first math unit, measurement.

Along with this high interest level, the students are gaining valuable research and technology skills that can be used and strengthened throughout the school year.

This unit also removes me, the teacher, from the role of sole instructor. Part of the project entails having the students teach the class about their region and field questions from their peers. It is amazing to see how excited the students are to learn about interesting places to visit in the United States. I even had one student plan his family's summer vacation to cover his route and visit the places he researched!

Technology enhances this unit in three ways. First, it provides a wealth of information about different places of interest in the United States. Although this information can be found in other forms (i.e., encyclopedias, travel brochures, etc.), the Internet provides a wealth of information written both for and by kids this age, and it also saves on storage space. Second, it provides access to maps, routes, and mileage between two specified cities rather than the traditional information provided between only major cities. Third, the use of spreadsheet and publishing programs provides the students with a real-world example of how computers can be used to collect, analyze, and present information quickly and effectively.

Curriculum Benchmarks:

MI.SOC.II.4.LE.6 Describe the geography of major United States regions, compare the regions, and explain the processes that created them.

MI.SOC.V.1.LE.1 Locate information about local, state and national communities using a variety of traditional sources, electronic technologies, and direct observations.

MI.MAT.III.1.MS.2 Organize data using tables, charts, graphs, spreadsheets and data bases.

Total Amount of Time for Lesson:

I generally assign this project during the first full week of school. I would suggest allowing for at least 2 full weeks to complete this project. Shorter time periods can be used if the project is more focused, longer time periods can be used to allow for more in-depth coverage. Students do not have any problem working on this project for more than one hour at a time without getting off task due to the use of "new" technologies, individual maps, and sharing of ideas.

I would estimate that the Trip Planning and Math Worksheets section of the project would take about 5 – 7 hours. The research and presentation portion for the regions will take about 14 – 21 hours depending on the depth of information required and the availability of technologies to provide quick access to information.

Materials / Hardware / Software:

Calculators

Access to the Internet (<http://city.net/maps/driving/>)

Encyclopedias

PC encyclopedias

Almanacs

Social studies textbooks

Laminated maps of the United States (I got these from AAA)

Maps showing the states in each region

Markers for laminated maps

Lesson worksheets or spreadsheet software (these can be printed out or the students can complete them directly on the computer)

- Summary worksheet [summary.doc]
- Internet procedures [internet.doc]
- Student procedures [student.doc]
- Trial run worksheets [trial.xls]
- Trial run answer sheets [trial2.xls]
- Student worksheets [trip.xls]

Rulers

String or yarn

Tape

Publishing software (useful for creating presentations and visual aids, but not required)

Teacher Preparation:

As with most lessons, this project can be simplified to fit the teacher and/or students' technological abilities and the availability of technology in the school. The project is designed to use the Internet for researching information (requires some knowledge of Internet search engines, but it can be replaced by more traditional information sources) and collecting map information (the website listed above is very simple to use since you only input two cities and states and click a button, but it can still be replaced by more low-tech methods), a spreadsheet for recording information (but it can be replaced by simple printouts and calculators), and publishing software (but it can be replaced by written reports, word processors, and simple drawings).

I would recommend having some knowledge of the regions and choosing the specific areas of information that you would like to have all of your students collect during their projects (i.e., landforms, climates, economies, natural resources, populations, etc.). This is critical if the project is to be completed in a short time period, but it is also very helpful to discuss this information with students at the outset since many of them have likely had little experience doing research, especially on the Internet.

I have included a sample trip [trial.xls and trial2.xls] that can be used to model what you expect from your students. This seemed to be very helpful and answered many of the questions that would have caused problems later. You can create your own sample trips

as well. This trip used the United States road map from AAA with a scale of 1 inch = 90 miles.

Prerequisite Student Skills:

Again, this depends on the level of technology integration that you choose. I find this project to be a great opportunity to help students learn how to use the Internet successfully, begin to use spreadsheets, and use publishing software. I model the project for the students before they begin their own projects so that they can see how I used each of the pieces of technology. An LCD display connected to a computer or other means of projecting the computer screen is very helpful, but I have also had the students simply sit around my desk on the floor.

Since this project is designed to help students find out more about the regions of the United States, they are not required to have any prior social studies knowledge in order to be successful. You could provide a map of the United States broken into regions, however.

Student Activities / Procedures:

I have designed the procedures for this project so that they are flexible enough to fit into any district's curriculum, any teacher's style and technology ability, and any time frame. I believe that these procedures are readily adaptable to any teacher's own needs. These procedures are written for a medium technology integration (use the Internet, printout the spreadsheets, no publishing software) since many schools do not have access to spreadsheets and publishing software. If your district has these items and you are familiar with them, their integration into the project is rather obvious.

Before these procedures are begun, I will assume that you have decided what information you would like for the students to find out about their regions (i.e., landforms, climates, economies, natural resources, populations, etc.), how long students will be given to complete their projects, the technology available, and the method and depth of student presentation at the end of the project.

This year, I chose to have the students focus on the landforms, climates, and economies of the different regions (students were free to look at any other aspects of their regions, these were the only *required* items). Students were given about 4 weeks to complete the project. Spreadsheets and publishing software were not available at the beginning of the year on the student computers, so they used the Internet, printouts of the spreadsheets, calculators, and handmade visual aids. Students used their visual aids to present their information at the end of the project. Students were assessed on their completed worksheets (math), the information that they gathered (social studies), the quality of their visual aid and its usefulness to their presentation (language arts), and their presentation (language arts).

The procedures for this project are broken into two parts—Trip Planning / Math Worksheets [procedures found on student.doc] and Research / Presentation. The Trip

Planning / Math Worksheets could actually be a project by itself without the additional research / presentation.

Trip Planning / Math Worksheets [trip.xls]

1. Plan a road trip from (your city) around the United States. You may use encyclopedias, social studies textbooks, or the Internet to help you find places to visit. During the trip, you must visit **at least** three places of interest and go through **at least** two states **other than Michigan**. Your trip must take you to **at least** one region **other than (your region)**. You can only travel by car. **You do not need to plan stops to sleep, eat, or get gas.**
 - **Fill out** the cities, states, and places of interest on **Travel Planner 1** for each leg of the journey.
 - **Figure out** how many places you will visit on **Travel Planner 1**.
 - **Record** the total number of places to visit in the box at the bottom.
 - **Tape** the string from one stop to the next on your map.
 - **Label** each place of interest on the map with a marker.
 - **Fill out** all of the **abbreviations** for each state that you visit or travel through during each leg of the journey on **Travel Planner 1** (refer to **Travel Planner 2** for abbreviations for each state!).
 - **Figure out** how many states your trip will take you through using **Travel Planner 2** by placing an X next to each state visited or traveled through.
 - **Record** the total number of states visited in the box at the bottom of **Travel Planner 2**.
 - **Circle** the regions in which each one of your places to visit is located on **Travel Planner 2**.
 - **Record** the regions visited for each stop on **Travel Planner 1**.
2. Use the map and your ruler to estimate the distances for each leg of your trip. You will need to use the scale on the map to figure out your estimate in **miles** from your measurement in **inches**.
 - **Copy** the cities and states from **Travel Planner 1** to **Travel Planner 3**.
 - **Record** your measured distance in **inches** for each leg of your trip on **Travel Planner 3**. Remember not to measure over water since you can only travel by car!
 - **Figure out** the estimated distances in **miles** for each leg of your trip using your measurement, a calculator, and the scale on the map on **Travel Planner 3**.
3. Use the map information on the Internet to figure out the actual distances for each leg on your trip.
 - **Look up** the actual mileage of each leg at <http://city.net/maps/driving/>
 - **Record** the actual distances in **miles** for each leg of your trip on **Travel Planner 3**.
 - **See** how close your estimates were to the actual distances in miles. If they are not close, measure the distance again and re-check your estimate.

4. You can only travel 600 miles in any one day. You must spend the remainder of the day at each attraction you stop at on the trip.
 - **Copy** the cities, states, and actual mileage (from **Travel Planner 3**) for each leg of your trip on **Travel Planner 4**.
 - **Figure out** the number of days each leg of your trip will take.
 - **Record** the total number of days for the entire trip in the box at the bottom.
5. Your car gets 25 miles per gallon of gas.
 - **Figure out** how many gallons of gas you will use on each leg of your trip on **Travel Planner 4**.
6. A gallon of gas costs \$1.
 - **Figure out** how much money you will spend on gas for each leg of your trip on **Travel Planner 4**.
 - **Record** the total dollars spent for gas for the entire trip in the box at the bottom.
7. It costs \$5 for breakfast, \$10 for lunch, and \$15 for dinner each day.
 - **Copy** the total number of days and the total money spent on gas from **Travel Planner 4** to **Travel Planner 5**.
 - **Figure out** how much money you will spend on breakfast, lunch, and dinner during your trip if you must eat each meal for each day of travel on **Travel Planner 5**.
8. It costs \$100 per night at each hotel.
 - **Figure out** how much money you will spend on hotels during your trip if you have to stay in a hotel each night on **Travel Planner 5**.
9. Add up all of your planned expenses for the trip.
 - **Figure out** your total expenses (how much you spent on gas, food, and hotels) on **Travel Planner 5**.
 - **Figure out** how much you spend per day on average during the trip on **Travel Planner 5**.
10. If you originally planned to spend \$200 per day on your trip, how much under-budget or over-budget is your trip?
 - **Figure out** how much over or under budget you are per day on **Travel Planner 5**.
 - **Record** how much over or under budget you are per day on **Travel Planner 5**.
 - If you are under budget, **underline** Under on **Travel Planner 5**.
 - If you are over budget, **underline** Over on **Travel Planner 5**.
11. **Make** a graph showing your expenses broken into money spent on gas, breakfast, lunch, dinner, and hotels from **Travel Planner 5**.
12. **Fill out** the **Summary Worksheet** with the information on your Travel Planner sheets. [summary.doc]

Region Research / Presentation

1. Choose one of the regions that you visited during your trip.
2. You may use encyclopedias, social studies textbooks, or the Internet to collect information about your region. You must collect the following information about your region (provide a list of information that you have chosen or that you have helped the class to brainstorm). Additional information will be considered extra credit.
3. Insure that you record the bibliography of any source from which you acquire useful information. (I would recommend providing bibliography samples of books with one author, books with more than one author, encyclopedias, and Internet websites.)
4. Organize this information and create at least one visual aid so that you can teach the class about your region of the United States. Be prepared to answer questions from your classmates and me.

Assessment:

Trip Planning / Worksheet Assessment:

Map—25 points

Section of route not labeled with string → -5

Places to visit not labeled → -5 each

Route crosses water → -5

Travel Planner 1—5 points

Proper names not capitalized → -2

States missing → -2

Totaled states rather than places → -1

Regions incorrect or missing → -2

Travel Planner 2—5 points

Did not total states → -1

States missing → -2

Regions not circled → -2

Travel Planner 3—5 points

Did not fill in estimates → -2

Did not fill in actuals → -2

Proper names not capitalized → -2

Travel Planner 4—15 points

Forgot \$ or , → -1 (once) or -3 (more than once)
Rounded numbers → -2
Proper names not capitalized → -2
Gas wrong → -1 (once) or -6 (more than once)
Days wrong → -1 (once) or -3 (more than once)
Total wrong → -3

Travel Planner 5—20 points

Forgot \$ or , → -1 (once) or -3 (more than once)
Gas wrong → -2
Food wrong → -4
Hotel wrong → -2
Total wrong → -4
Average wrong → -4
Under wrong → -4

Bonuses

More than once sheet of places to visit → +2
More than two sheets of places to visit → +4

Travel Planner Total Points—50 points

Research / Presentation Assessment:

Required information provided—50 points
Quality and usefulness of the visual aid (did it help other students to better understand the region)—30 points
Presentation skills—20 points

Total Project Points—175 points

This project can provide significant grades for math (worksheets), social studies (regions information), and language arts (visual aid and presentation).

Follow-up Activities:

This project provides the students with an excellent opportunity to begin using a variety of technologies for research, organizing information, teaching their classmates, and creating useful visual aids. Our class' second major project focuses on Native Americans. Students choose a Native American group to research. They find where they lived and how this region affected what they ate, what they wore, their housing, and their way of life. The connections to the regions study are plentiful, the research skills continue to expand, and the ability to organize and present information grows

GOTO NEXT PAGE FOR STUDENT GUIDES

These guides can be printed for student use

Also look at sample worksheets for students.

[Click here to view or print worksheets used by students](#)

[Click here to view a completed student project](#)

[Download the Excel Spreadsheet student worksheet\(Trip.xls\)](#)