

Best Practices of Technology Integration

Title: The Year You Were Born

Submitted by:

Name: Amy Allen

School Building: Lakeshore Middle School

School District: Lakeshore Public Schools

School Address: 1459 W. John Beers Road
Stevensville, Michigan 49127

E-mail Address: aallen@remc11.k12.mi.us

Subject Area: This lesson is a thematic lesson which includes the following subject areas:

- Computer Literacy
- English
- Mathematics
- Science
- Geography

Intended Grade Level:

This lesson is utilized at the seventh grade level through a team teaching method of instruction. However, the lesson could be utilized at any middle school through lower high school level of instruction.

Description:

The Year You Were Born is a thematic lesson in which students will conduct research about a variety of events which occurred during the year they were born. Students will utilize a variety of resources (i.e. the school media center, the Internet, microfiche, and personal interviews) in order to acquire information pertaining to science, mathematics, national and international events, and their own family life. Students are expected to organize their information into an informative report which includes scanned and downloaded images, a spreadsheet and graph, textual information, and a multimedia presentation.

Narrative:

The Year You Were Born proves to be an informative and rewarding unit for students, parents, and teachers alike. The content of the lesson flows easily from one subject area

to another, showing students and parents how even very different subject areas (such as geography and computers) are interrelated. In addition, the students gain several valuable skills throughout the course of this lesson. To begin with, the students learn how to use a variety of resources to obtain information and data while conducting research. Students research national and international news events from the year of their birth; obtain and compare prices of products from the year they were born and the present; plot the place of their birth on a geographical map; and interview their own parents to obtain special family memories pertaining to their birth.

The use of technology greatly enhances the students' success and interest in this unit. By having the Internet available on to use for research, the students are able to have a vast amount of information readily available to them. Students are required to sort through the massive amount of information presented to them and choose what events they deem important to include within their report. Additionally, by utilizing a word processing program, the students are able to create a high-quality report which allows for ease of proofreading and editing. Students also learn how to utilize the scanner and related software so that pictures of themselves and their families can be included within the report.

Search Engines and spreadsheets are also useful tools in the completion of this project. The Yahoo search engine provided a wonderful way for students to map the location of their birth and import a map into their reports. Students use the "Map-It" command within Yahoo to plot the location of their birth. Upon locating and mapping their birthplace, the students are then required to calculate the longitude and latitude of their birth town. Students then copy the map image into their word processing program and include the longitude and latitude and additional information in order to create an attractive cover page for their report. Finally, the use of a spreadsheet to assist in comparing prices of products from the students' birth year to the present proves to be an invaluable tool. Students learn how to utilize formulas to calculate the difference, quotient, and percentage of change for five different products of their choice. They next are required to create a graph within the spreadsheet which visually represents the price changes. The students are amazed at how great of an increase occurred in many products, such as a car and a house.

Throughout the "instruction" and "production" phases in this unit, students reacted very favorably to not only the content but also the new skills which were acquired. A goal at our middle school is for each team to prepare and instruct a cross-curricular team unit. I truly believe this was a wonderful project which encompassed all content areas. Not only did the students learn about national and world events that occurred during their birth year, but they also were required to take the time to "interview" their parents in order to obtain family information. We believe that this is a very important part of the student's personal history, and by conducting this interview it allowed the student to learn about his early life and also gave parents the opportunity to reflect on events that were important to themselves.

Curriculum Benchmarks:

MI.TECH.2.MS.1 Demonstrate skill using technologies to prepare, evaluate and synthesize information collected and stored (voice, data, video, graphics, etc).

MI.TECH.3.MS.4 Use technologies to organize thoughts in a logical process (voice, data, video, graphics, etc.)

MI.ELA.11.MS.2 Explain and use resources that are most appropriate and readily available for investigating a particular question or topic. Examples include knowledgeable people, field trips, tables of contents, indexes, glossaries, icons/headings, hypertext, storage addresses, CD-ROM/laser disks, electronic mail, and library catalogue databases.

Total Amount of Time for Lesson:

The approximate amount of time to complete this lesson is three weeks. Depending upon which content area is completing their portion of the project, the amount of time needed will vary. (See Student Activities/Procedures for a specific timeframe for each area.)

Materials/Hardware/Software:

Materials:

Magazines and Books from the school's Media Center which give information about the specific year(s) being focused on for the report (i.e. students were born in years 1984 - 1986 for this classes' report)

Note cards for taking notes as research is conducted

Large manila folders for students to keep all paperwork in as research is conducted

Example of proper format for citing various resources in a bibliography (This can be found online at <http://www.wilpaterson.edu/wpcpages/library/citing.htm> .)

Hardware:

Several computer workstations on which students will conduct research and prepare various components of report

Scanner(s)

Microfiche equipment and related materials

Software:

Internet Browser Software (i.e. Netscape, Microsoft Internet Explorer)

Word Processing Software (i.e. Claris Works, Microsoft Word)

Spreadsheet Software (i.e. The Cruncher, Claris Works, Microsoft Excel)

Scanning Software (i.e. Color It or Adobe Photoshop Deluxe)

Video Input Software (i.e. Apple Video Player)

Helpful Internet Sites to Use for Research:

<http://www.scopesys.com/year/>

<http://www.dmarie.com/asp/history.asp>

<http://www.dmarie.com/asp/history.asp?action=process>

<http://www.sanjuan.edu/schools/mesaverde/index.html> (link on this page)

<http://www.scopesys.com/anyday>

http://www.yahooligans.com/Around_the_World/History/Today_in_History/

<http://www.440int.com/twtd/today.html> (day only not year)

<http://www.n-polk.k12.ia.us/Pages/Departments/media/days.html>

<http://www.historychannel.com/thisday/>

http://www.hyperhistory.com/online_n2/History_n2/a.html

<http://www.tc.cornell.edu/Edu/MathSciGateway/expert.html>

<http://litcal.yasuda-u.ac.jp/>

<http://almanac.mpr.org/>

<http://ericir.syr.edu/>

Teacher Preparation:

This unit is designed for a team-teaching approach to instruction, and the preparation required by each teacher is dependent upon the teacher's subject area. Overall, the primary amount of time spent on this unit will take place in the English and computer literacy classes. However, teachers conducting this lesson have the ability to establish a personal time-frame that works best for their own instructional needs. Primarily, open communication between all teachers involved is very important. Teachers need to work together to establish instructional guidelines (i.e. what class is going to focus on what portion of the unit) and a timeframe that complements the team-teaching approach. For example, the mathematics teacher would first have to teach a lesson on how to find the difference, quotient, and percentage of change before students could mathematically compute these amounts for their own products. Next, the technology teacher (or mathematics teacher) would need to have knowledge of how to use a spreadsheet to conduct their computations. The following preparations are needed specifically for each subject area participating:

ENGLISH:

Preparation of handout detailing the guidelines and expectations for this unit (Appendix 3).

Research materials (i.e. microfiche, magazines and books from the school Media Center)

organized and made available to students.

Grading rubric prepared and explained to students for English portion of report (Appendix 4).

Explanation of note-taking skills.

MATHEMATICS:

Preparation of lesson explaining how to mathematically compute difference, quotient and percentage of change for products.

Handout in which students will list items included in their report and related mathematical figures. (This can be prepared on a spreadsheet. See Appendix 6)

GEOGRAPHY:

Explanation of how to find longitude and latitude on a map.

Explanation of requirements for geography portion of project.

SCIENCE:

Explanation of expectations for science portion of report. Time should also be given in class for students to prepare this section.

COMPUTER LITERACY:

Preparation of a grading rubric which outlines all of the computer literacy expectations for this project (Appendices 1 & 2).

Preparation of a lesson which explains how to utilize the Internet for research purposes.

Preparation of lessons on how to effectively utilize a word processing program; focusing on formatting a title page, formal report, and bibliography page.

Preparation of lessons on how to effectively utilize a spreadsheet program (focusing on requirements for this particular lesson).

Preparation of lesson which explains how to utilize a scanner and import scanned images into another file.

Preparation of a lesson on how to utilize the mapping feature within Yahoo and copy the image into another file.

Preparation of lessons on how to utilize Hyperstudio or another multimedia presentation program (See Fun With Hyperstudio... a Best Practices #1 lesson for details.)

Prerequisite Student Skills:

The skills required by each student to successfully complete this project will be determined within each content area. Preparation for the skills required for this unit will take place during each content area's allotted class time. Specific skills the students will need to possess in each area are:

ENGLISH:

Demonstrate good research skills.

Demonstrate good written communication skills.

Demonstrate good organizational skills.

(Students should possess at least a seventh grade level of the above skills before beginning this project. Additional lessons may need to be given covering research and organizational skills.)

MATHEMATICS:

Demonstrate the ability to mathematically compute the difference, quotient, and percentage of change of different products.

(Students should be able to apply the skills learned through this project in order to compute the necessary amounts for their selected products. Additional assistance may need to be given with utilizing the spreadsheet.)

SCIENCE:

Demonstrate good research skills.

Demonstrate good written communication skills.

GEOGRAPHY:

Demonstrate good map reading skills.

Demonstrate an ability to find the longitude and latitude of various locations.

(Students should know how to perform basic map reading skills and how to utilize a map's key. Students may require additional assistance in figuring the longitude and latitude.

COMPUTERS:

Demonstrate good keyboarding skills.

Demonstrate good research skills, primarily focusing on the Internet.

Demonstrate the ability to effectively utilize a spreadsheet.

Demonstrate the ability to operate a scanner.

Demonstrate the ability to import images into a word processing file.

Demonstrate the ability to effectively utilize Hyperstudio to create a multimedia presentation.

(Many of the above computer skills will be taught as the unit progresses. Students should possess good keyboarding skills and be able to effectively utilize the program Hyperstudio before beginning this project. The use of a spreadsheet, scanning, and various Internet locations will be explained as the lesson progresses.)

Student Activities/Procedures:

The number of days listed to complete each of the below assignments is based upon a 45

minute class period. Because this project is completed in several different content areas, it is up to the teachers to determine when each component of the project will be completed within the content areas. The English and computers portion will take the greatest amount of time to complete, needing approximately three weeks. Mathematics will need approximately three days to complete (excluding the actual spreadsheet development). Geography and science should take approximately one class period to complete.

ENGLISH:

Day 1 -

Students are given the handout in their English class which details the entire year You Were Born project (Appendix 3). The English teacher will spend an entire class period explaining the various components of the project and the project's expected time line. During this class period the English teacher will hand out note cards, manila envelopes, and explain how to use the microfiche machine for research. The English teacher will also give students a copy of the "Parental Interview Questions" so that the students can interview their parents to find out family information about their birth year (Appendix 5).

7 Days -

Students are allowed approximately seven days during which time research is to be conducted. Throughout this time period students will utilize the microfiche, Media Center materials, and Internet in order to obtain information to be included within their report. Throughout this time period the English teacher should regularly check to ensure that students are taking notes that are directly applicable to the research project. Students should also cite their sources used on bibliography cards as they gather the information. (The teacher should also ensure that students have completed their parents' interviews and that the student's parents are listed as sources on a bibliography card.) Once all of the necessary information has been gathered, the students will begin preparing a rough draft of their report using the information they have gathered.

2 - 3 days -

During the final days of the project, students will have time to work on completing the rough draft of their report. Upon completion, peer editing techniques should be utilized to edit the rough copy. Students will then make the necessary changes and start organize all of their materials to hand in on the designated due date. (It should be noted that students may elect to either prepare their rough copy by hand or on the computer. It will be up to the student to ensure that the final copy is prepared on the computer at school and is in the proper format.)

MATHEMATICS:

Day 1 -

Students will be taught a lesson which explains how to find the difference, quotient, and percentage of change between designated products. This lesson can be taught by using products chosen by the students at random and "guessing" the price of that product during the year of their birth and the present. Once several products and prices are

selected, the instructor will demonstrate how to do the mathematical computations to arrive at the difference, quotient, and percentage of change. Homework for the students will be to begin researching products and prices of five items from the year of their birth and the present.

Day 2 -

Students should continue to research prices for products from the year of their birth and the present. It is beneficial to allow students to have this day to work in a computer lab (if available) to conduct their product and pricing research. Helpful sites to use for research on-line are:

<http://www.dmarie.com/asp/history.asp>

Students should complete their pricing research by the following day in order to allow for spreadsheet instruction to take place in their computer class. The products and prices chosen by the students will be utilized for both a mathematics grade and computer grade.

Day 3 -

Students should come to class with a list containing their five products along with prices from the year of their birth and the present day. Students will be expected to utilize the mathematics lesson from Day 1 of instruction in order to ascertain the difference, quotient and percentage of change for their own products. Students are expected to fully complete this lesson “by hand” without the use of a computer to receive full credit in math class.

GEOGRAPHY/COMPUTER LITERACY:

Day 1 -

Students will be expected to map the location of their birth utilizing the Internet (preferably the Yahoo search engine). Before beginning this portion of the project, students will demonstrate an understanding of map skills and finding the longitude and latitude of selected locations. At our school, students learned and developed this skills prior in the semester. Students will also be given a set of guidelines explaining the expectations for the geography portion of the project, which are as follows:

1. Map the location of the their birth utilizing the Yahoo search engine.
2. Once students have plotted their map in Yahoo, save the image to a location on their desktops.
3. Open a new word processing document and insert the image of the map onto the page.
4. Have students type their name and location of birth above the map.
5. Have students list their birth-date, the longitude and latitude of the city where they were born, and insert a compass rose below the map.
6. The completed page should then be saved and printed. This will be used as a cover page for the complete report.

SCIENCE:

Day 1 -

The science portion of this project focuses on locating and researching an important scientific event that occurred during the student's birth year. (For example, many students chose to research the Challenger explosion.) This scientific event can be related to any form of science, as long as it was an event that proved noteworthy during the student's year of birth.

Once the topic for the science portion of the project has been selected, the student will then conduct research on their given topic and write at least three paragraphs explaining why their selected topic was important and what contribution it made to science. This research will then be included within the final project as a portion of the report.

COMPUTER LITERACY:

Day 1 -

Students will be given copies of the rubrics outlining the expectations for this project (Appendices 1 & 2). The teacher verbally explains the time schedule for the project and instructs the students that this project will be further explained and completed throughout the upcoming weeks. The teacher will then hand out the list of Internet sites that will be helpful for students to use in completing this project (See Hardware/Software/Material Section of this lesson.) At this time the teacher should explain how to cite Internet sources. Information on how to properly do this can also be found online. See Materials Section of this lesson.) For the remainder of the period, student will be allowed to conduct online research.

Day 2 -

For this class period the students will be allowed the entire hour during which time online research will be conducted.

Day 3 -

The computer teacher will begin the class period by demonstrating how to correctly format a title page for a report (See student examples Appendix 6). Students will be expected to complete the title page for their own report during this class period. The title page should include the report title, author's name, for whom the report is prepared, and due date of report. (Students should be advised to not print their title page at this time. All portions of the project will be printed closer to the project's due date in order to ensure neatness of the final copy.)

The computer teacher will also instruct the students how to properly prepare a Bibliography/Works Cited page for their report. The information to include in each entry can be at the discretion of the teacher; however, it is a good idea for students to include at a minimum the author's name, title of article, book, or web site, publishing or update date, and publishing company. All entries should be alphabetically arranged using the hanging-indent feature. The students should practice preparing a properly-formatted bibliography page by including the sources they have found up to this point to be used in their report. Again, the bibliography page will be saved but not printed in order to allow

for additional sources to be added and to ensure neatness.

Days 4 and 5 -

For these class periods the students will be allowed the entire hour during which time online research will be conducted.

Day 6 -

On these days the students will focus on the mathematical portion of their report. (Again, this time schedule does not need to be strictly followed; however, it is important that before beginning this lesson, the mathematics teacher has already given the lesson on finding the difference, quotient, and percentage of change of various products.) Students will be required to bring their mathematics class worksheets on which they have listed their five products and pricing information. Students should also have completed (by hand) the difference, quotient, and percentage of change so that the mathematical concepts behind these computations are understood. (The spreadsheet is not to be used as a replacement for mathematics skills, but rather to enhance and “double check” the students’ amounts.)

The computer teacher will demonstrate how a spreadsheet is designed by creating a simple spreadsheet while using the overhead projector so that students can follow the same steps at their own workstations. The students will learn how to enter and delete information in cells, how to resize cells, and how to utilize simple formulas to add and subtract. By the hour’s end each students will be expected to have the following completed:

1. Spreadsheets’ columns and rows properly labeled for their report
 2. Five selected products listed in column A
 3. Price of product during birth year in column B
 4. Current price of product in column C
 5. Difference between the current price and previous price in column D (Students should utilize formulas to calculate the difference between the two prices in this column. These formulas should be visible when the spreadsheet is toggled to “show formulas”.)
- The teacher will tell students that formulas **MUST** be used in the columns computing difference, quotient, and percentage of change. The amounts calculated within the spreadsheet columns should match the amounts on the students’ handwritten worksheets. (A good way to demonstrate this lesson is to have the students enter the formulas along with the teacher for the first entry of their spreadsheet. Students will then be expected to enter the formulas correctly for the next four entries on their own.) Students will save their spreadsheets but not print them as they are not yet completed.

Day 7 -

On this day the teacher will instruct the students to utilize a spreadsheet for computing the quotient and percentage of change of their products. Students will be requested to open their spreadsheet file they created on the previous day. The teacher will then demonstrate how to utilize formulas to compute the quotient in column E and percentage of change in column F. Again, the teacher should work on the overhead so that students can follow along with the instructions at their own workstations. The teacher should

demonstrate the proper formulas for each column's first entry and then allow the students to complete the spreadsheet on their own. All computations should also match their handwritten amounts. If there is remaining class time, the students can conduct further research for their report on the Internet.

Day 8 -

For this class period the students will be allowed the entire hour during which time online research will be conducted.

Day 9 -

The students will be taught how to generate a graph which visually represents the price differences of their chosen products from their birth year and the present. Students should have their spreadsheets completed before beginning this portion of the unit. Using the overhead projector, the teacher will demonstrate how to generate a graph within a spreadsheet. The students will have their own spreadsheets open on their computers and will follow along with the teacher's instructions. The teacher should demonstrate several times the proper steps in creating a graph. Once the students' graphs have been completed, they should be placed directly below the spreadsheet and saved. (The teacher will need to explain that the only columns that need to be included in the graph are columns B and C. Additionally, the teacher should demonstrate how to properly label the graph so that it has a title and both the X and Y axes are labeled.)

Day 10 -

On this day the students will be taught how to utilize the Yahoo search engine to create a map showing the location of their birth. The teacher will demonstrate on the overhead projector the proper steps for accessing Yahoo and utilizing its "Map-It" command. Again, students should follow along with these steps at their own workstations. Once the maps have been created within Yahoo, the teacher will show each students how the "Save This Image As" command works in the Internet. (The teacher should stress that this command works with many graphics and pictures on the Internet and that the picture will then be saved as a file on the student's computer.)

After saving the map image, the teacher will have the students open a new word processing document on which the students will create the cover page for their report. The guidelines for this cover page are listed under the "Geography" section. This portion of the project should be completed by the hour's end.

Days 11 - 15 -

The remainder of the allotted project time will be spent on completing research, preparing and editing a rough draft, finalizing the bibliography, and compiling all of the components created for this project into a final report. On day eleven or twelve, the teacher will demonstrate how to properly utilize a scanner. The students will be required to include at least one scanned picture in their report showing themselves and family members. This picture should be placed immediately following the "Family Memories" portion of the report.

On the due date for the report, the teacher should work together with the students to ensure that all necessary files have been printed and are placed within the student's manila envelope in the proper order.

An additional option that is a creative addition to the written report is the students developing a Hyperstudio stack which focuses on the content contained within the report. Students will create a minimum of a five card stack which follows a predetermined grading rubric (Appendix 2). Each card contained within the stack should contain the following information:

- Card 1 - Title Card
- Card 2 - Family Information
- Card 3 - National/International News
- Card 4 - Mathematics/Science News
- Card 5 - Bibliography

(See the sample Hyperstudio stacks attached to this lesson.)

You must have Hyperstudio or the Hyperstudio Player installed on your computer to view these two student example stacks.

[Amber's Stack](#)

[Dack's Stack](#)

Assessment/Evaluation:

Each content area utilizes their own preferred method of evaluation for this unit. Both English and computers are the primary focus for this unit, and each class utilizes a rubric as a final grading tool (Appendices 1, 2 and 4). Mathematics scores the students on their ability to correctly apply the concepts learn when figuring the difference, quotient, and percentage of change. The students are graded on their ability to figure the correct answer for each given area for the mathematics portion of their report. For geography, the students are expected to correctly identify the location of their birth and also note the longitude and latitude for that location. Students are graded on their ability to map the location in Yahoo and also correctly include the additional information as outlined in the unit guidelines. Finally, for science, students are graded on their choice of a scientific event which occurred in the year of their birth, and how effectively they explained the event within their report. The students should have a minimum of three paragraphs explaining the event itself and how it effected scientific advancement.

Follow-up Activities:

The follow-up activities for this unit can be left up to the team presenting the unit. Our team chose to have a team potluck to which all students and their families were invited. During the potluck, selected students formally presented their projects. Photographs of students working on their projects and an explanation of the unit was also placed on our

school web site for all members of our community to enjoy.

The following two links are in Adobe Acrobat Format

[View or print student instructions.](#)

[View or print sample student work](#)