Best Practices of Technology Integration

Title: *Buying and Financing the Car of Your Dreams*

Subject: Mathematics, Computer Literacy, Life Skills, and Language Arts

Grade Level: 8th Grade

Description:
For this lesson, students would go to one of a number of web sites (provided by the teacher in a hotlist) to find a car they would like to buy if they were old enough. They would then be provided with the necessary information to compute monthly payments and the total amount of interest paid on a typical auto loan. This information would be included in a report using a word processor.

Narrative:
This lesson would be included in a math class during a unit on percents, or in a computer class during a unit on spreadsheets. A life skills class could use a unit such as this to work on expenses and budgeting. The content would capitalize on junior high students' interest in cars, while helping them to learn what expenses there would be in buying one. It allows the students to learn about expenses in "real life" situations, and may help them to become more realistic about their plans for the future.

The information from the Internet would be incorporated into a spreadsheet. That information (and a picture of the student's chosen car) would then be imported into a word processing document. That document could be incorporated into a Language Arts class as an assignment.

The use of the spreadsheet would help insure that the students don't get bogged down in the complicated mathematics involved in computing interest, monthly payments and the like. The use of the Internet would allow the students to pick from many (perhaps all possibilities) of cars and would provide up to date information on car prices. The assignment could possibly include the use of the Internet to find the best deal on interest rate by searching banks' rate of interest on new car loans.

Curriculum Benchmarks:
MI.TEC.2.MS.3
Retrieve, communicate and input information using a technological system (voice, data, video, graphics, etc.)

MI.MAT.I.2.MS.6
Continue to explore relationships arising from interesting contexts, and use variables and relationships to solve mathematical problems.
MI.ELA.10.MS.2
Perform the daily functions of a literate individual. Examples include acquiring information from multiple sources and then evaluating, organizing and communicating it in various contexts.

Detailed Timeline:
3-4 class periods of 55 minutes each.

Materials/Hardware/Software:
A computer for each student with Internet Access
Microsoft™ Excel® and Word®, or a similar software combination of compatible spreadsheet and word processor, such as Corel™ Suite.
A hotlist of Internet sites which provide pictures and prices of new cars, such as Microsoft™ CarPoint®, or Edmunds'.

Teacher Preparation:
The teacher will need to do some Internet research to compile a hotlist of web sites that give pictures, descriptions and prices for new cars.
If the teacher doesn't want the students to research the interest rates for new cars, then you will need to find some interest rates from local lending institutions. This lesson will be more "real life" like if current interest rates are used.

Prerequisite Student Skills:
The students must have learned to use a spreadsheet and enter labels, data and formulas into the cells. A basic understanding of percents and the concept of borrowing money and paying interest would be very helpful. Students will also have to know how to copy and paste text and graphics from the Internet and how to import information from a spreadsheet into a word processor. Prior knowledge of how to work with text formatting and Word Art (Text Art in Corel WordPerfect) will help in the preparation of the title page for the report.

Student Activities/Procedures:

1. Log on to the Internet and point your browser to one of the following URLs:
   http://www.edmunds.com
   http://www.autoweb.com
   http://www.carprices.com
   http://www.buycars.net
   http://www.all-auto.net
   http://www.carsearch.com
   http://www.carpoint.com
   http://www.autoconnect.com
2. Choose to search for a **New Car** or **New Truck**.
3. Click through the choices to find the make and model of car or truck that you think you would like to buy.
4. Save the graphic that shows a picture of your new car or truck. Copy the pricing information for your new car or truck.

Note: Make sure you copy every URL that you use so you can include them in your Bibliography.

5. Log off the Internet and open a new spreadsheet in Excel.

6. Type the following data in **column A:**

	A
1	Sale Price
2	Sales Tax
3	Total Cost
4	Money Down (10%)
5	Loan Amount
6	Interest Rate
7	Length of Loan
8	Yearly Payments
9	Monthly Payments
10	Total Paid
11	Total Interest
12	

7. Resize the cells in column A so that all of the labels fit in the column.

8. In column B, record the following information:
   Cell B1: The full MSRP (sticker) price of the vehicle you chose.
   Cell B2: =B1*.06
   Cell B3: =B1+B2
   Cell B4: =B1*.1
   Cell B5: =B3-B4
   Cell B6: The current interest rate on new car loans. After entering the decimal, click on the % button on toolbar to change the format to percent.
   Cell B7: 5

Cell B8: 12

Cell B9: To record the monthly payment, do the following:

a. Click on the vex button on the toolbar.
b. Click on **Financial** in the left column and **PMT** in the right column.
c. Click next.
d. In the **Rate** box, type B6/B8.
e. In the **Nper** box, type B7*B8.
f. In the **Pv** box, type -B5.
g. Click **Finish**.

Cell B10: =B9*(B7*B8)

Cell B11: =B10-B5

If the numbers do not fit, you will see ######## in the cell. To correct this problem, you will need to widen the column so that the numbers will fit.

Your spreadsheet will look something like this:

Sale Price	$ 16,995.00
Sales Tax	$ 1,019.70
Total Cost	$ 18,014.70
Money Down (10%)	$ 1,801.47
Loan Amount	$ 16,213.23
Interest Rate	7.25%
Length of Loan	5
Yearly Payments	12
Monthly Payments	$ 322.96
Total Paid	$ 19,377.43
Total Interest	$ 3,164.20

Highlight cells B1 through B5 and format for $ (currency).
Highlight cells B9 through B11 and format for $.
Select cell B6 and click on the increase decimal button on the toolbar to get enough decimal places.
Save this file as **CAR3.**

The Report:

1. Open Microsoft™ Word®.
2. Type your heading and press the Enter key three times.
3. Type and center **My Dream Car**.
4. Type and center the year, make and model of your chosen car.
5. Insert the picture of your car that you saved from the Internet.
6. On the next page, type a paragraph of not less than 100 words paraphrasing the information that you found on the Internet about your car (what's good, what's bad, etc.).
7. Double-space the paragraph you typed.
8. Copy and paste your spreadsheet from Excel® into your word processing document under the paragraph you typed.

9. Insert a page break and type your bibliography on the new page in your document.
10. Spell check and proofread.
11. Save as **DreamCar**.
12. Print your report and hand it in.

It will take the students the first class period to get the instructions and begin their research on the Internet. They will do some surfing to decide which sites to use and which cars or trucks they will use for the project. The second day will be mostly work in the spreadsheet. The third day the students will work on the final product: the word processing document. There may need to be a fourth day to get the entire project wrapped up.

Assessment/Evaluation:
Students will be assessed on the word processing document they produce. There should also be some evaluation of the preliminary work, such as the spreadsheet and verification that the student can save information (like the picture of the car) from the Internet. This can be verified by having the students save files in a place accessible to the teacher.
Breakdown of scoring:

Retrieving information from the Internet and Bibliography	15%
Saving and using a graphic (picture) from the Internet	5%
Excel® spreadsheet	30%
Word Processor Report	50%

Follow Up Activities:
Now that the students have demonstrated the skill of creating files in one program and importing them into another program, this can be used in other applications. Database records can be incorporated into reports. Picture files can be imported into spreadsheets and word processing files. Charts (graphs) created with spreadsheets can be imported into reports.

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