MAISA and the REMC Association of Michigan
Best Practices in Technology Integration
Plan

Title: "Married Math"

Subject(s): Math

Intended Grade Level(s): 7-8

Description:

The purpose of this unit is to have students learn how to do the math and problem solving necessary in "real life" situations. Students will be randomly paired up and assigned randomly selected last names, salaries, house size, and family size. Student "pairs" are responsible for keeping a folder in which they will store activity sheets and projects involving taxes, budget, planning a home, designing a room, buying insurance, investing, making a will, planning a vacation, etc. Students will use technology to research and create a series of projects. Students will use the Internet to research and plan a vacation.

Curriculum Benchmarks:

MI.SOC.IV.1.MS.1. Use economic reasoning when comparing price, quality and features of goods and services.

MI.SOC.IV.1.MS.3. Analyze the reliability of information when making economic decisions.

MI.SOC.IV.3.MS.4. Distinguish different forms of taxation and describe their effects.

MI.MAT.I.2.MS.3. Begin to investigate applications in bivariate data and linear relationships and explore questions of what will happen to one quantity if another variable is changed.

MI.MAT.II.1.MS.4. Construct familiar shapes using coordinates, appropriate tools (including technology), sketching and drawing two- and three- dimensional shapes.

MI.MAT.IV.3.MS.5. Applying their understanding of number relationships in solving problems.

MI.MAT.V.1.MS.4. Efficiently and accurately apply operations with integers, rational numbers, and simple algebraic expressions in solving problems.

Materials/Hardware/Software:

To complete this unit of study, students should have access to the following:

* Access to the Internet and World Wide Web
* Magazines containing basic house blueprints - obtained locally
* Current income tax forms: federal, state, local, - obtained form post office
* Large paper (36" wide) and meter sticks for drawing house plans
* A copy of the included activity sheets
* Blank generic checks and check register book pages

Software listed or similar software:

* Quicken from Intuit ; or similar software for personal finances
* Loan Adviser from REA Systems Ltd. Delta, BC, V4C 7Y7
* Home Plan by Chuck Herndon 1-800-671-7526
* Design-A-Room by Robert Mace from Epsilon Computing, Cincinnati, Ohio
* Or, Room Planner from Swift Jewel - COSMI 1-310-886-3510
* Windows Attorney from COSMI 1-310-886-3510

Optional materials that are very useful:

* Checks & Balances - Scott Products
* Using Consumer Math: Competency Lab - Lakeshore Lifeskills
* Board games from Creative Teacher Associates:
    * Bank Account
    * Budget
    * Department Store Math

Activities/Procedures:

Teacher pre-activities

1. Prepare enough student activity sheets for all the students
2. Prepare enough folders per "family" to keep projects in
3. Select appropriate Web sites for students to use to find information on the vacation they will be planning. Mark the sources with a Bookmark.
4. Before beginning the activities, the teacher should prepare one account for each family on the Quicken software by Intuit.
5. Students will have to be shown how to use the computer for research activities. They will need to know how to access their Quicken Account, the basics of using Home Plan and Design-A-Room.
6. Make arrangements with a local grocery store to allow students to grocery shop with their calculators.

Activities:

1. Introduce the unit to the students explaining why they are doing the unit and what they will be expected to do and learn.

2. Randomly select and assign the student pairings, income, home size, and family size. (Do this with a short program written in BASIC or simply draw items from a hat.)
3. Assign the families the projects of selecting and producing house plans that meet their family house size. One set of plans will be drawn by hand on "blueprint" size paper. The second set of plans will be drawn on the computer using the Shareware called Home Plan or some similar CAD program.
4. Demonstrate to the students how to use Home Plan to draw the house plans. Show them how to set the scale and how to add the built-in features. Show samples of simple house plans in locally obtained magazines. Hand out and discuss the worksheet showing the guidelines for the hand drawn blueprints. This project will take several days of planning and drawing. If you do not have a computer lab, a schedule must be made for using the computer for the CAD drawn house plans. Each pair will need at least 45 minutes on the computer.
5. It now will take about a week to work on producing a budget. Using the financial sheet included in these plans, start with the amount of salary that was randomly selected for each family. First we see what is taken out for taxes. Social Security is subtracted (salary X .0765). Then federal, state and local tax forms are filled in by each family. Use the EZ forms if possible or you may decide to use the longer forms and discuss the various avenues of the tax codes. Make overhead transparencies of the tax forms and work together one step (basic lines only) at a time through each ofm these forms. In doing these part of the exercise, you will be able to fill in the top part of the Financial Worksheet.
6. The rest of the budget project can be completed in several ways. You could simply take a percent for each budget category. Or individual activities can be used to determine the amounts in each budget category. Mortgage can be determined by using the square footage or local market values of similar houses. A loan for 80% of the value can be set up using the options of the program called Loan Advisor from REA Systems Ltd. Food line items can be determined by having the students make a complete menu for a full week. A shopping list is made based on this menu. A field trip is then arranged to go to a local grocery store and shop this list with calculators to determine the cost of food in the budget. Utility companies can give you local guidelines based on house and family size of probably cost for utilities. The teacher may also make arrangements for a financial planner to speak to the class about investment and savings strategies.
7. Demonstrate to the students how to handle a checking account. Show the proper way to write checks, how to justify the check book and how to keep the ledger. Demonstrate how to do these same skills by computer using Quicken by Intuit. Assign each student two check writing projects using the included worksheet. One project uses the regular check book and ledger. The second project uses the computer and Quicken to record the transactions.
8. Assign the students the project of planning a vacation. Allow the students a budget of $4,500 to use on this vacation. Students must use the Internet and the World Wide Web to determine the destination, the way and cost of travel, housing and meals. They must include the cost of entertainment used on this vacation. Demonstrate how to access this information using the Bookmarks you have set up.

MARRIED MATH FINANCIAL WORKSHEET

Annual Income a.)_____

Federal Tax b.) _____

State Tax c.) _____

Local Tax d.) _____

Social Sec. e.) _____

Add b+c+d+e f.) _____

Subtract f. - a. = Spendable Income g.) _____

Divide "g" by 12 = Monthly Income h.) _____

Monthly Income : _____

Mortgage : _____
Food : _____
Electric: _____
Gas: _____
Auto Loan: _____
Loans: _____
Church: _____ Balance _____
Clothes: _____
Entertain: _____

Guidelines for Your House Plans

1. Use the scale of one centimeter = one foot

2. Lay out the house's outside shape first and then work on the interior.

3. Labels are always written parallel to the bottom of the page and printed neatly. Labels each room and give its measurements.

4. Show the built-in items like counter tops and toilets.

5. Show location of windows and doors.

Check Writing Activity I

Use your blank checks and the a copy of the check registry to find the final balance after these activities have been recorded and checks written as indicated:

1. Beginning balance $456.35

2. Check to J.C. Penny's for clothes in the amount of $126.98

3. Check to A&P for groceries in the amount of $59.75

4. Deposit pay check of $1,298.04

5. Check to Grunst Brothers for supplies in the amount of $298.50

6. Check to Chemical Bank for mortgage payment in the amount of $590.56

Ending balance = _____

Use your Quicken Accounting system to find the ending balance:

1. Beginning balance $637.98
2. Check to Bob Hope for charity in amount of $100.00
3. Check to Joe's Tires in amount of $187.98
4. Deposit $583.09
5. Check to Murphy's for supplies in the amount of $287.45
6. Check for Builder's Square for paneling in the amount of $367.00

Ending Balance _____

Assessment/Evaluation:

Each project is kept in the family folder. Projects are checked for accuracy and neatness. House plans must be to scale and they must follow the guidelines shown.

Follow-up Activities:

* Have the students use Windows Attorney to write wills for themselves.
* Have the students play the board games from Creative Teacher Associates or similar games:
  - Bank Account
  - Budget
  - Department Store Math
* Make emergency cards that disrupt the budget and have students solve the problem by adjusting their budget or borrowing funds using Loan Advisor from REA Systems Ltd.

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