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Formulas and the Solver Application Using TI Calculators

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CMST SCOLLARCITY Lesson Plan Template-Lesson Plan using **TI Technologies** (Due Tuesday, July 27th)

Submit as hard copy AND electronically through ANGEL

Name :Henry Elich
Grade level(s)/Subject taught: Math at seventh grade level.
Objectives: (Remember…*How will the modeling tool help the student better learn the objective?) Have students be able to use formulas for any Math or Science formula using the problem solver application on the TI 84 calculator. The students should be able to use this application to solve a problem that has a new formula*

Items to include in your TI Technologies lesson plan: (use *your* area/discipline/concepts).

For the math teacher:

1. *Write* the Mathematical Concept or "key idea" that TI Technologies will be used to teach: (e.g. Students use mathematical modeling/ multiple representation to provide a means of presenting, interpreting, communicating, and connecting mathematical information and relationships)

The mathematical concepts I am aiming for are : • Use variables to represent relationships • Use a computer (TI 84) as a modeling tool • Applying mathematics to real world situations.

and/or…

For the Science teacher:

1b. *Write* the Science Concept or "key idea" that TI Technologies will be used to teach: (e.g. Organisms maintain a dynamic equilibrium that sustains life).

For your **TI Technologies** lesson and using the following prompts, please provide a rich **one-page, single-spaced** description or a *vision* of your best thinking on a way or ways you might teach the planned lesson using the TI technology. Pay special attention to the modeling package in your description. Also, construct and submit a tentative rubric that you might use with your students. ** see example page 5

"...a rich **one-page, typed, single-spaced**, description or a *vision* of your best thinking…"

Prompts:

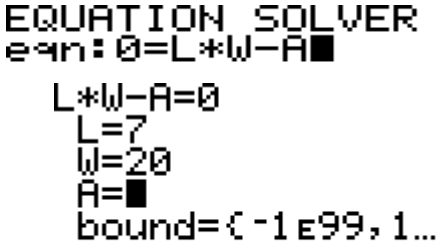
1. How will you assess the prior knowledge of the student?
2. How will you begin the lesson?
3. What are the teacher and students doing every 5-10 minutes? (Teacher Actions and Student Actions
4. How will you assess the learning for the lesson?
5. How will TI be integrated into your teaching? (i.e. you may want to discuss a problem or describe how you might use the chosen modeling package in your plan. How does the model/tool help the concept(s) to be taught)?

Using __Solver_____, I plan on having my students…
(software / modeling package(s

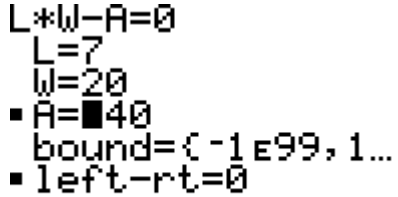
I would begin this lesson brain storming about formulas. Starting off with a definition of what a formula is. A formula is a mathematical representation (or model) of a real world situation. I would give them a formula…(maybe $a^2 + b^2 = c^2$) , and then see how many I could get from them.(10 mins) I would then let them get into small groups and take one of the formulas and come up with a word problem that would require the formula they choose to solve the problem (group time 10 min. share time 10-15). I would have some groups share their problems.

Next, I would introduce the solver application on the calculator. And give a small demonstration. (10 – 15 min)

- Choose a formula A= l * w
- We need to make the equation equal to zero so subtract A from both sides
- 0 = L x W – A
- Put into solver
- Press Enter
- Give value to 2 of three



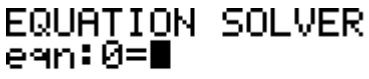
- L= 7 W = 9 A is highlighted with guess



- Press ALPHA ENTER
- Answer will be 140 (which they will see.)

HAND OUT

- Go to Math 0 (SOLVER) Screen



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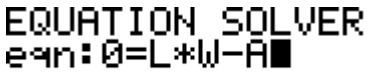
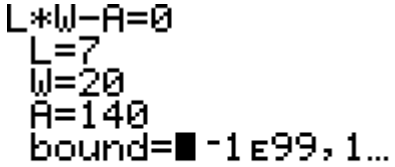
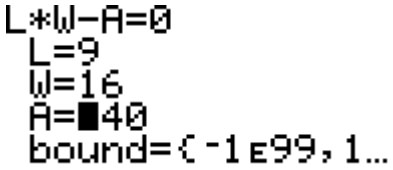
- Fill in formula in Zero form



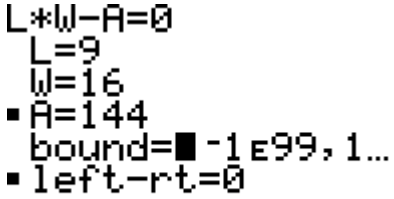
- Press Enter



- Fill in L = 9, W = 16 highlight 140



- Press ALPHA ENTER



- 144 is the answer!!!!!

Page Two of Hand out

Try the following formulas (Remember to convert them to Zero Statements First)

1. $a^2 + b^2 = c^2$ $0 = a^2 + b^2 - c^2$

Where a = 3 c= 25 find b

Where a= 7 b= 34 find c

Where a= b= find c (make your own!)

2. V = H * W *L 0= H * W *L - V
Where H = 19 w = 19 L = 10 find V

3. R * T = D ____________________

Rate = 60 Time = 2 find d

;;;

Tommy rode his bike to his grandmothers house which is two miles from his house. It took him ¾ of an hour to get there. What was his rate of speed?

I would follow up this lesson with more word problems for the next class as well as practice changing formulas into Zero Statements.

The assessment would consist of a group project where they would have to set up a problem and use a formula to solve that problem (to be reported to the class.) Also a test with a formula they had not seen yet to make sure they knew how to implement a new formula.
In addition, this would be reinforced in any unit that includes a formula.