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Using Sales to Understand Math Concepts with TI Calculator

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

Submit as hard copy AND electronically through ANGEL

Name: Thomas A. DeMond, Sr.
Grade level(s)/Subject taught: Technology- 7-9
Objectives: (Remember…*How will the modeling tool help the student better learn the objective?)* To model equations that are used everyday by construction sales people to compute the cost of a job. To have students be able to construct models that represent real world problems in engineering, and determine a valid answer.

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)

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).

Technology Teacher 1. Students use measurement in real-world situations. Performance indicators - Students: • understand the simple attributes of length, weight, volume, time, and temperature. • measure the length or volume of an object. • collect and display simple data.

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

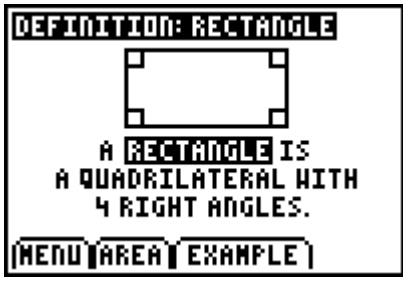
Target	Does not meet standard	Meets Standard	Exceeds Standard	
Student programs TI-84 Calc to derive the answer				
Student uses Calc to learn about The subject				
Student can describe problem				
Student accomplishes lesson objective				
	0	1	2	

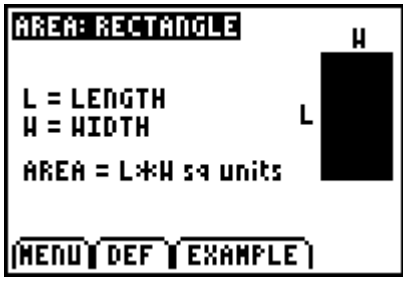
"...a rich **one-page, typed, single-spaced**, description or a *vision* of your best thinking…"

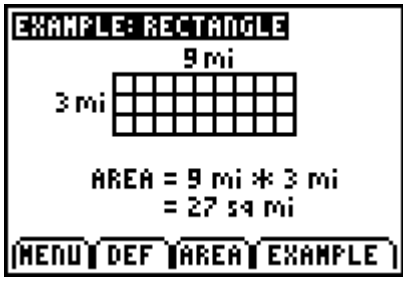
Prompts:

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 <u>doing</u> 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)?

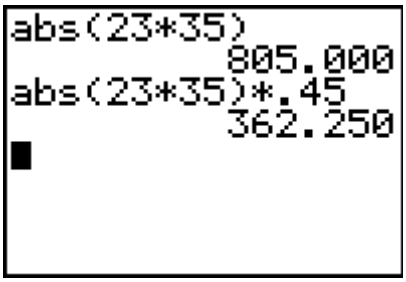
I was thinking about beginning the class with a background activation exercise and assessment by giving a pretest to assess what students know about area. Next, I would present a 10 – 15 minute demonstration of the basics of using area modeling software. I would demonstrate the area formulas application on the TI4 calculator. The class would view 6 geometric shapes in the following manner:



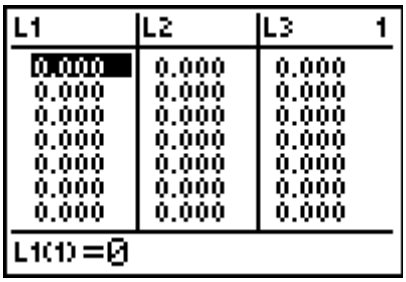


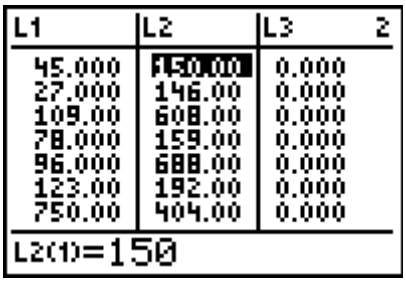


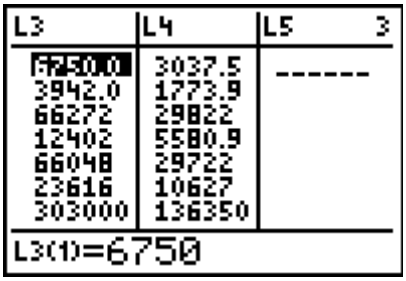
Next, students will work on the TI4 to explore area, by using the area formula software, and completing the area quiz. The aim of this practice and assessment is so that students would gain more confidence in using the software in a meaningful way.



An extended lesson would involve making a list of variables (l, w) and have students then use the formula to generate a table of answers.







Using Equation solver, I would first have students find the area for a list of lengths and widths. Then students would be expected to add in the cost factor (45 cents per square foot) and come up with a cost.

In the last example above, list L1 (length) and L2 (width) were multiplied to give List 3 (square footage). Then list L4 was computed by multiplying L3 x $.45 to get the answer of $3,037.50.

This data is easily calculated from the lists.

Student Assessment

Pre-test
Post Test (check one)

Use complete sentences to define the following words:

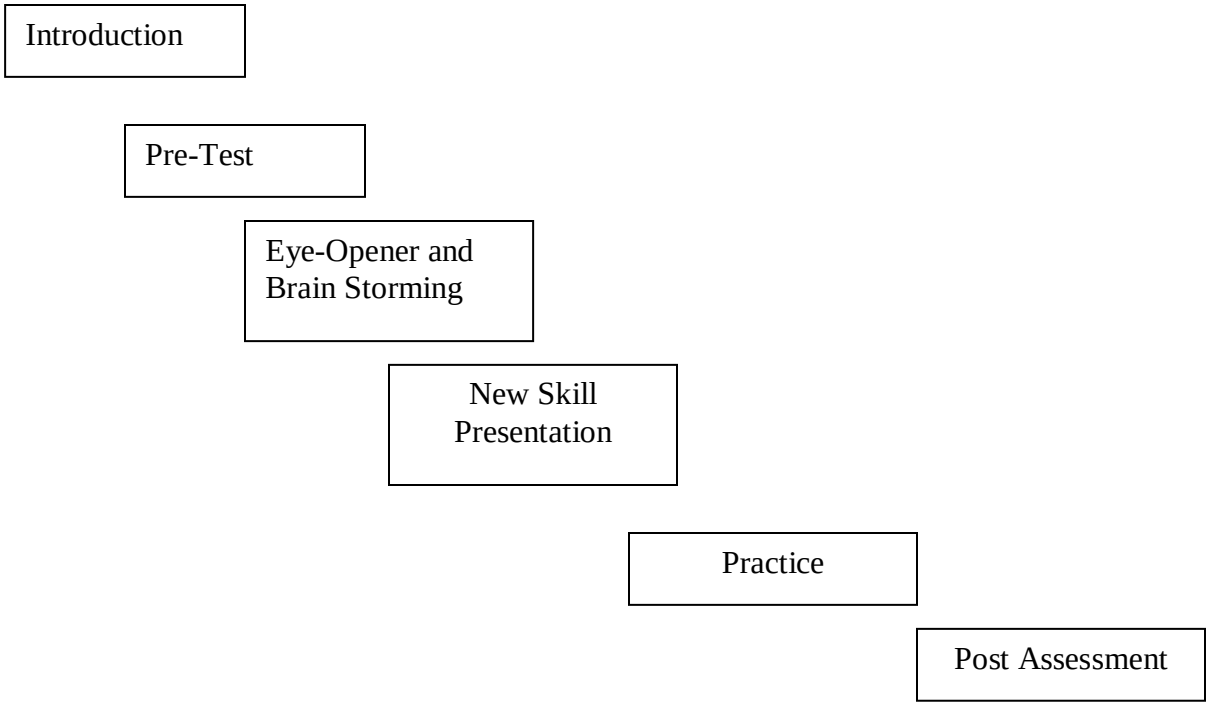
Rectangle
Square
Parallelogram
Trapezoid
Circle
Polygon

Write the formula for the area of a rectangle.

Write the formula for the area of a trapezoid.

If you measure a parcel of land, and the North side is 50 feet, South side – 75 feet, West side 60 feet, east side 75 feet, distance from north to south side is 50 feet. What is the area of the land.

Lesson Flow Chart



Flow Chart showing lesson parts.

Additional Objectives:

85% of the class will have an increased ability to use tool and method as evidenced by

- Pass post test
- Complete exercise
- Participate in lesson
- Use TI-84 calc to compute area by entering equation
- Use calc to complete Apps/AreaForm/area quiz successfully, after studying definitions and formulas.