On Doing the Standards
What Should a Standards-Level Lesson Look Like?

by Thor Charischak

If you are like most educators these days, you have probably at one time or another asked yourself the question: "Am I doing the Standards? Now, what does that mean exactly? Webster defines a standard as something set up and established by authority to be a rule for the measure of something. In the thirteenth century King Edward I in response to confusion about measurements ordered a permanent measuring stick (made out of iron and called the iron ulna) to serve as the standard for a yardstick. After this bold move if merchants had an argument over what the standard was for the yard, they would go visit the iron ulna and clear up any confusion. Can we do the same with the NCTM Standards? Can we "visit" where the Standards are housed, and clear up any confusion?

What follows is a comparison of two lessons both intending to "teach" the same ideas and both claiming to be supporting the Standards. You be the judge as to their "success".

Exhibit #1
Activity: Estimating Heights

This lesson was in an excerpt from a recently published Algebra text that was proclaiming how it effectively supports the NCTM Standards.

Did you know that there are formulas relating the sizes of some parts of the human body? And that these formulas are the same for all people? For example, suppose you know only the length of a person's radius bone, r centimeters. You want to estimate this person's height, h centimeters. You can substitute the value for r in the appropriate formula below. Then solve to determine her or his approximate height.

Female	$h=3.34r + 81.2$
Male	$h=3.27r + 85.9$

1. A radius bone 24.5 cm long was found. Substitute 24.5 for r in both formulas. Use your calculator to estimate the height if the person was a female and if the person was a male.

2. a) For a female, choose some values of r between 20 cm and 30 cm. Calculate the corresponding values of h. Make a table of values. Graph the height of the person against radius bone length.
   b) Repeat part a for a male.

3. Use a computer to set up a spreadsheet like the one shown below. Copy the formula in row 5 to row 6, and beyond.
   a) Describe what each formula does. Then enter an initial radius bone length in cell A4.
   b) Use the spreadsheet to check your solutions to exercise 3.

A	B	C	D
ESTIMATING HEIGHTS			
LENGTH OF RADIUS BONE	HEIGHT OF FEMALE	HEIGHT OF MALE	DIFFERENCE
	=3.34*A4+81.2	=3.27*A4+85.9	=C4-B4
	=3.34*A5+81.2	=3.27*A5+85.9	=C5-B5