PWCS Performance Assessment

Curriculum Focus

Subject/Unit/Title:
Algebra I / Unit 2 / Solving Multi-Step Equations

Standards:

Virginia Standards of Learning
Students will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to:
 	
A.4 a) multistep linear equations in one variable algebraically;
    c) literal equations for a specified variable;
    e) practical problems involving equations.

Understanding(s): *Students will understand that . . .*	Essential Question(s): *Students will keep considering:*
1. practical problems can be interpreted, represented, and solved using linear equations. 2. equations can be used as mathematical models for real-world situations.	1. How can we use algebraic rules and processes to create equations to solve real-world problems?

Overview of Performance Assessment

Hot Under the Collar

The student will write two equations to model the conversion from degrees Celsius to degrees Fahrenheit based on a conversation between two students. One equation is based on the conversion formula and the other is based on a student's approximation of the formula. Given a Celsius temperature, the student will evaluate both equations to find the degrees Fahrenheit. They will then be asked to find the temperature in degrees Celsius at which the two equations give the same temperature in degrees Fahrenheit. Finally, the student will solve a literal equation to find the equation for converting from degrees Fahrenheit to degrees Celsius.

Source: MARS (Mathematics Assessment Resource Service)

Materials and Resources

None.

Suggestions for Differentiation

Name: _____   Date: _____   Period/Block: _____

Hot Under the Collar

Joe and Amie are discussing how they change temperatures in degrees Celsius into degrees Fahrenheit.

Joe

The temperature in degrees Fahrenheit is the temperature in Celsius multiplied by 9, then divided by 5, then increased by 32.

That is the correct method for finding the temperature in degrees Fahrenheit, but I have an easier method you can do in your head. Fahrenheit is 30 more than twice the Celsius figure. That is accurate enough for most purposes.

Amie

1) If F is used to represent the temperature in degrees Fahrenheit and C the temperature in Celsius, write the equation that represents Joe's method (the correct way). Write the equation that represents Amie's method.

2) If the temperature is 20^0 C, what is the temperature in degrees Fahrenheit? What is the difference between the actual temperature and Amie's estimate?

3) At what temperature will Amie's estimate match the actual temperature?

4) How could Joe transform his original equation to find the temperature in Celsius if given the temperature in Fahrenheit?