

Math-in-CTE Lesson Plan Template

Lesson Title: Minimizing Sheet Metal Waste		Lesson # M-20
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Occupational Area: Sheet Metal-Welding		
CTE Concept(s): <u>WORK IN PROGRESS!</u>		
Math Concepts:		
Lesson Objective:		
Supplies Needed:		

THE "7 ELEMENTS"	TEACHER NOTES (and answer key)
<p>1. Introduce the CTE lesson.</p> <p>What we need to learn today is how to develop a material cut procedure and a material cut list in order to minimize sheet metal waste</p> <p>Sheet Metal normally comes in 3'x8' and 4'x8' sizes.</p> <p>The shear makes full width cuts therefore it is important to arrange your parts in a way that leaves the least amount of waste.</p>	

<p>2. Assess students' math awareness as it relates to the CTE lesson.</p> <p>Who remembers how to convert feet to inches?</p> <p>Your math instructor will probably use the term “Unit Conversions”</p> <p>On your worksheet are a few examples to be completed.</p> <p>Formula: Length in feet x 12 = Total inches</p> <p>In every job, there is a certain amount of waste. Our goal is to minimize the amount of waste.</p> <p>Let's calculate waste in these examples on your worksheet.</p> <p>Remember that in industry we use the term Drop and Waste as the same where your math teacher would use the term remainder when dividing and the term would be difference when subtracting.</p>	<ol style="list-style-type: none">1. 20' x 12" = 240"2. 12' x 12" = 144"3. 10.5' x 12" = 126"

<p>4. Work through <i>related, contextual</i> math-in-CTE examples</p> <p>Up to this point we've been dealing with mostly in feet. In many situation such as this project we will be working in inches. The dimensions in following worksheet will be in inches.</p> <p>Remembering that sheets of material you will be using come in 3' x8' and 4' x8' sizes. You will need to convert into inches and develop a cut procedure.</p>	<p>Worksheet 3</p> <p>From the material list develop a cut procedure.</p> <p>Include actual cut procedure, number of sheets required, and size and number of drops.</p>
<p>5. Work through <i>traditional math</i> examples.</p>	<p>1.</p>

6. Students demonstrate their understanding. Form a cut procedure sheet with the given material list including the size and number of drops/waste and number of sheets needed to complete the order.	
7. Formal assessment.	

NOTES: