**Math-in-CTE Lesson Plan Template**

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| Lesson Title: Measuring Conversions | | | Lesson #3 |
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| Occupational Area: CTE Intro, FACS Exploration or Clothing 1 | | | |
| CTE Concept(s): Converting measurements. | | | |
| Math Concepts: Multiplying by fractions. Conversion from yards to inches. | | | |
| Lesson Objective: | Students will be able to convert inches to yards and yards to inches. | | |
| Supplies Needed: | Tape measures, burrito instructions, fabric for projects. | | |

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| **The "7 Elements"** | **Teacher Notes**  **(and answer key)** |
| 1. **Introduce the CTE lesson.**   Tell the students that we will be checking their pillow case fabric to make sure they have brought in the correct measurements. All students please get out your fabric. | *Students should have already purchased their pillow case fabric. Students will be given their pillow case instructions with a worksheet on the back side.* |
| 1. **Assess students’ math awareness as it relates to the CTE lesson.**   Ask the students “How many inches are in a yard?”  Wait for responses. Tell them that they are going to need to know the answer for today’s lesson. | *Answer: 36 inches=yard* |
| 1. **Work through the math example *embedded* in the CTE lesson.**   The students will work through the following problems.   1. How many inches are in 1/3 of a yard? 2. How many inches are in ¾ of a yard? 3. How many inches are in 1/8 of yard? | *Work these problems out for the students as practice*  *First you must change 1 yard into inches. (36 inches in 1 yard)*  *1/3 of a yard means 1/3 times 36 inches.*   1. *1/3 X 36/1 = 36/3; 36/3 means 36 divided by 3 or 12 inches* 2. *¾ X 36/1 = 3(36)/4 to simplify this problem, divide the 36 by 4 first to get 3(9)/1, then multiply 3 times 9 to get 27 inches. (you can multiply 3 times 36 to get 108 and then divide by 4 to get the same 27 inches).* 3. 1/8 X 36/1 = 36/8; 36 divided by 8 does not divide evenly. 8 divides into 36 four times with 2 as a remainder. Put the remainder over the denominator (8) and reduce the fraction. 2/8 reduces to ¼. The final answer is 8 ¼ inches. |
| **4. Work through *related, contextual* math-in-CTE examples.**  1. How would you measure 2¼ yards?  2. How would you measure 3 ½ yards? | 1. We would not measure the 2 yards in inches, we would measure 2 yards, then convert the ¼ yard to 9 inches 2. Just like in example 1, you would measure 3 yards then convert ½ yards to 18 inches. |
| **5. Work through *traditional math* examples.**  Convert pounds to ounces.   1. Convert 1 ½ pounds to ounces. 2. Convert 2 ¾ miles to feet. | 1. The conversion rate is 1 pound = 16 oz. 1 ½ pounds = 16 oz plus ½ of 16 oz. (16 oz + 8 oz = 24 oz) 2. The conversion rate is 1 mile = 5280 feet. First find how many feet in 2 miles; 2(5280) = 10560. Then find ¾ of a mile; ¾ X 5280 = 3(5280)/4 or 3960. Add the two parts to get 14,520 feet. |
| **6. Students demonstrate their understanding.**  Students will demonstrate what they have learned by measuring their pillow case fabric and filling in the correct answers on their instruction page. If they have measured and converted correctly they will be ready to sew. |  |
| **7. Formal assessment.**  **Make the pillowcase! If the pillowcase fits your pillow that is the true test that you have converted correctly.**  **If the teacher prefers, they could have a quiz or review worksheet that includes the following problems:**   1. **How many inches are in ½ yard?** 2. **How many inches are in ¼ yard?** | 1. 18 inches 2. 9 inches |