

<b>Cornell Notes</b>		Name: _____
Topic: <b><u>Converting Measures, Lesson 5.7</u></b>		Date: _____
		Period: _____
Essential Question: <b>How can you compare lengths between the customary and metric systems?</b>		
<b>Questions/Main Ideas:</b>	<b>Notes:</b>	
	<b>Equivalent Customary Lengths</b>	
	1 ft = 12 in.      1 yd = 3 ft      1 mi = 5,280 ft	
	<b>Equivalent Metric Lengths</b>	
	1 m = 1,000 mm      1 m = 100 cm      1 km = 1,000 m	
	<b>Converting Between Systems</b>	
	1 in. = 2.54 cm      1 mi is about 1.61 km	
<b>Vocabulary</b>	<b><u>U.S. customary units</u></b> - a system of measurement that contains units for length, capacity, and weight.	
	<b><u>Metric system</u></b> -a decimal system of measurement, based on powers of 10, that contain units for length, capacity, and weight.	
	<b><u>Conversion factor</u></b> - a rate that equals 1	
	<i>Relationship</i>	<i>Conversion Factors</i>
	<b>Example</b> 1 m ≈ 3.28 ft	$\frac{1 \text{ m}}{3.28 \text{ ft}}$ and $\frac{3.28 \text{ ft}}{1 \text{ m}}$
	<b><u>Unit analysis</u></b> - to decide which conversion factor will produce the appropriate units.	
<b>Example 1</b>	<b>Converting Units</b>	
	Convert 36 quarts to gallons. Use a conversion factor.	
	$36 \cancel{\text{qt}} \cdot \frac{1 \text{ gal}}{4 \cancel{\text{qt}}} = \frac{36 \cdot 1 \text{ gal}}{4}$	

	<p><b>Convert 20 centimeters to inches.</b> Use a conversion factor.</p> $20 \text{ cm} \cdot \frac{1 \text{ in.}}{2.54 \text{ cm}} \approx 7.87 \text{ in.}$
	1.) 48 ft =        yd
	2.) 5 g =         mg
<b>Example 2</b>	<b>Comparing Units</b>
	<p><b>Copy and complete the statement using &lt; or &gt;: 25 oz <span style="background-color: yellow; border: 1px solid black; padding: 2px;">  </span> 2 kg.</b></p> <p>Convert 25 ounces to kilograms.</p> $25 \text{ oz} \approx 25 \text{ oz} \times \frac{1 \text{ lb}}{16 \text{ oz}} \times \frac{0.45 \text{ kg}}{1 \text{ lb}} = \frac{25 \cdot 1 \cdot 0.45 \text{ kg}}{16 \cdot 1} \approx 0.70 \text{ kg}$
<b>Example 3</b>	<b>Converting a Rate: Changing One Unit</b>
	<p><b>How many liters does the human heart pump per minute?</b></p> $\frac{5 \text{ qt}}{1 \text{ min}} \approx \frac{5 \text{ qt}}{1 \text{ min}} \cdot \frac{0.95 \text{ L}}{1 \text{ qt}} \approx \frac{4.75 \text{ L}}{1 \text{ min}}$
<b>Example 4</b>	<b>Converting a Speed: Changing Both Units</b>
	<p><b>You are riding on a zip line. Your speed is 15 miles per hour. What is your speed in feet per second?</b></p> $\begin{aligned} \frac{15 \text{ mi}}{1 \text{ hr}} \left( \frac{5280 \text{ ft}}{1 \text{ mi}} \right) \left( \frac{1 \text{ hr}}{3600 \text{ sec}} \right) &= \frac{15 \cdot 5280 \text{ ft}}{3600 \text{ sec}} \\ &= \frac{79,200 \text{ ft}}{3600 \text{ sec}} \\ &= \frac{22 \text{ ft}}{1 \text{ sec}} \end{aligned}$
<p><b>Summary: Students should write a summary reflecting the above essential question.</b></p>	