Developing Metric/English Conversion Factors

Name_____ Block _____

Partner: _____

1. Using a ruler and a blank sheet of paper, draw straight lines <u>measured in inches</u> as listed in the table below.

2. Now measure each line in centimeters and fill in the <u>Length in Centimeters</u> column, using the correct number of significant digits.

3. For each line, divide its length in centimeters by its length in inches, and put the result in the last column.

4. Total the <u>first two columns</u> the row indicated; then compute their ratio

5. Compute the average of the <u>first two columns</u> in the row indicated by dividing the total by 5; then compute that ratio.

	Lines in inches	Length in centimeters	Ratio (Length in centimeters ÷ Length in inches)
	1 in		
	3 in		
	5 in		
	8 in		
	12 in		
Total of all 5 measurements			
Average = Total ÷ 5			

Analysis:

1. What is the result when you divide the average length in inches by the average length in centimeters? Show your work below.

2. What are the units on your answer to #1?

3. What is the result when you divide the average length in centimeters by the average length in inches? Show your work below.

4. What are the units on your answer to #3?

Application:

By dividing the average length in centimeters by the average length in inches, you have created a relationship between *measurements of the same object in different units.* Any measurement made in centimeters could be changed to be a measurement in inches using this relationship:

Measurement in centimeters x [answer to #1] = Measurement in inches

You could also change a measurement in inches to one in centimeters using your other work:

Measurement in inches x [answer to #3] = Measurement in centimeters

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Try it out! (Practice your Canadian accent: "about" should be pronounced "aboat".)

1. If your shoe is about 10" long, how long would it be in centimeters?

2. If your thumb is about 7 cm long, how many inches long is it?

3. Your cat's eye is about 0.8 inches wide. How many centimeters is that?

4. Choose your own measurement: _____ inches tall is the same as how many centimeters tall?