



- ii. Choose only two measurements from Circumference, (a) – (d) in #1, and record the class measurements (centimeters only). You may choose to use (a) or (c) again, but not both.

Body Part	Class Measurements (centimeters)													

- iii. Choose two measurements from Length, (e) – (i) in #1, and record the class measurements (centimeters only).

Body Part	Class Measurements (centimeters)													

- iv. Choose one measurement from (a) – (d) in #1 and one measurement from (e) – (i) in #1. You may reuse one of each of the measurements you chose for parts (ii) and (iii) or choose different measurements.

Body Part	Class Measurements (centimeters)													



4. Convert your group's measurements from inches to feet, yards, and miles (yes miles). You may need to use the conversion table at the end of this worksheet. Your answers should be in decimals. *(You may use a calculator for this part of the activity, if allowed by your instructor.)*

<b>Body Part</b>	<b>Inches</b>	<b>Feet</b>	<b>Yards</b>	<b>Miles</b>
(a) Head				
(b) Neck				
(c) Wrist				
(d) Closed fist				
(e) Tibia				
(f) Hand span				
(g) Radius				
(h) Wing span				
(i) Height				

5. In this problem you are going to create ratios (as fractions) to compare the measurements of centimeters and inches. You are working with the measurements from problem #1. Convert all inches in both tables in problem #1 to decimals if they are currently written as fractions. *(You may use a calculator for this part of the activity, if allowed by your instructor.)*

(i) Choose three different measurements from (a) – (d) in #1 and create three different fractions as a ratio of the centimeter measurement to the inch measurement. Convert your fractions to decimals. Your final answers for each fraction should also be in decimals for easier comparison.

(ii) Choose three different measurements from (e) – (i) in #1 and create three different fractions as a ratio of the inch measurement to the centimeter measurement. Convert your fractions to decimals. Your final answers for each fraction should also be in decimals for easier comparison.

(iii) Describe the relationship with the ratios in part (i). Describe the relationship with the ratios in part (ii). Compare your results with two other groups. Write down one answer from each of from the two groups for parts (i) and (ii). What is the difference between your ratios and the other group's ratios? What can we conclude from this?

**What to turn in: (one report per group)**

Your report should include the following:

1. **Introduction:** Explain the purpose of this activity.
2. **Describe** the procedure for each of the following, including any challenges you had.
  - a) Using the measuring tape to measure in inches, centimeters, or millimeters.
  - b) Converting between metric measurements only.
  - c) Converting between U.S. measurements only.
3. **Data and Analysis:** Complete the MEASUREMENT, CONVERSION, AND RATIOS activity worksheet.
4. **Conclusions:** Explain in a few sentences what math you learned here, what particular concepts and problem solving strategies helped you as worked through converting measurements and how your ratios compared with two other groups. How can you connect your experience during this activity to something outside the classroom?

## UNITS OF CONVERSION

k      h      d      units      d      c      m  
(King Henry Died Drinking Chocolate Milk)

### U.S. Units of Length

12 inches = 1 foot

3 feet = 1 yard

36 inches = 1 yard

5280 feet = 1 mile

### Metric Units of Length

1 kilometer = 1000 meters

1 hectometer = 100 meters

1 decameter = 10 meters

1 meter = 1 meter

1 decimeter =  $\frac{1}{10}$  meter

1 centimeter =  $\frac{1}{100}$  meter

1 millimeter =  $\frac{1}{1000}$  meter