

# Do I Compare the Same in Other Units?

1. Each group needs a long piece of paper and a straw and measuring tape. Each person needs to lay down on the sheet and mark their height. Then use the measuring tapes, pencils, and your foot to find the your height and the length of your foot. Record them in the table.

	My Foot	Straw	Inches	Centimeters
Length of foot	1			
Height of person				
Ratio of Foot Length to Height				
Ratio in Decimal Form				

2. Calculator Directions:
  - a. TI-15 Calculators:
    - i. Use the n and d keys to form ratios requested in the chart.
    - ii. Convert the ratios to simplest form
    - iii. Set the Decimal answers to two decimal places by using FIX 0.01.
    - iv. Convert the ratios to decimals.
    - v. If the ratios are different try averaging the ratios to see what the average ratio is these measurements.

3. Questions to think about:
- a. What do the decimal expressions suggest about the ratios?
  - b. How close do they need to be to consider them the “same”?
  - c. How do your ratios of measurements using the straw and foot compare to the ratios with the centimeters and inches?
  - d. Do you see any patterns in the ratio column? Try to summarize what you see.
  - e. When you converted the ratios to decimal what additional pattern(s) did you see?
  - f. When you found the average of all the decimal expressions for your ratios, what did this tell you?
  - g. Convert this average back to a fraction. What does this tell you about the comparison of the length of your foot to your height?
  - h. What does this tell you about the type of measuring device you choose?
  - i. If you used different units to measure the length of your foot and your height, what would the ratio be? What would the decimal form for that ratio be?
  - j. Does it matter what unit we use to form a ratio?