



Name: _____

Date: _____ Per: _____

Metric Me

Measurement Mini-Lab



Objectives:

- ★ You will learn to make measurements using the metric system and convert the measurements within the metric system.
- ★ A graph will be constructed so the data you obtain can be visually observed.

Materials: Lab Paper, Metric Measuring Tape, Graph Paper

Procedure:

1. Work with a partner and take the listed body measurements using the measuring tape.
2. Follow the directions below for the appropriate points to measure for each body part.
3. Complete the table by performing the appropriate conversions.
4. Record your data in the Data Table below.

Results:

Table 1: Anatomical Measurements

Wrist (circumference): measure it at its widest point - tape measure should go over the large knob of the ulna.	_____ mm	_____ cm	_____ m
Forearm (circumference): measure at the widest point in a relaxed position.	_____ mm	_____ cm	_____ m
Forearm (length): measure from the wrist joint to the elbow joint.	_____ mm	_____ cm	_____ m
Ankle: measure it at the point just above the two large knobs of the tibia.	_____ mm	_____ cm	_____ m
Calf: measure the circumference of the calf at its widest point in a relaxed position.	_____ mm	_____ cm	_____ m
Foreleg (length): measure from the bottom of the tibial knob to the knee joint.	_____ mm	_____ cm	_____ m
Bicep (Flexed): measure your bicep while it is flexed. Do this at the peak of your muscle.	_____ mm	_____ cm	_____ m
Bicep (relaxed): measure the bicep of your arm while relaxed (at the same point as when it was flexed).	_____ mm	_____ cm	_____ m

Create a Bar Graph of your Data – be sure the graph contains all the appropriate components!

**Choose 1 set of measurements (mm, cm, OR m – not all 3!)*

Questions:

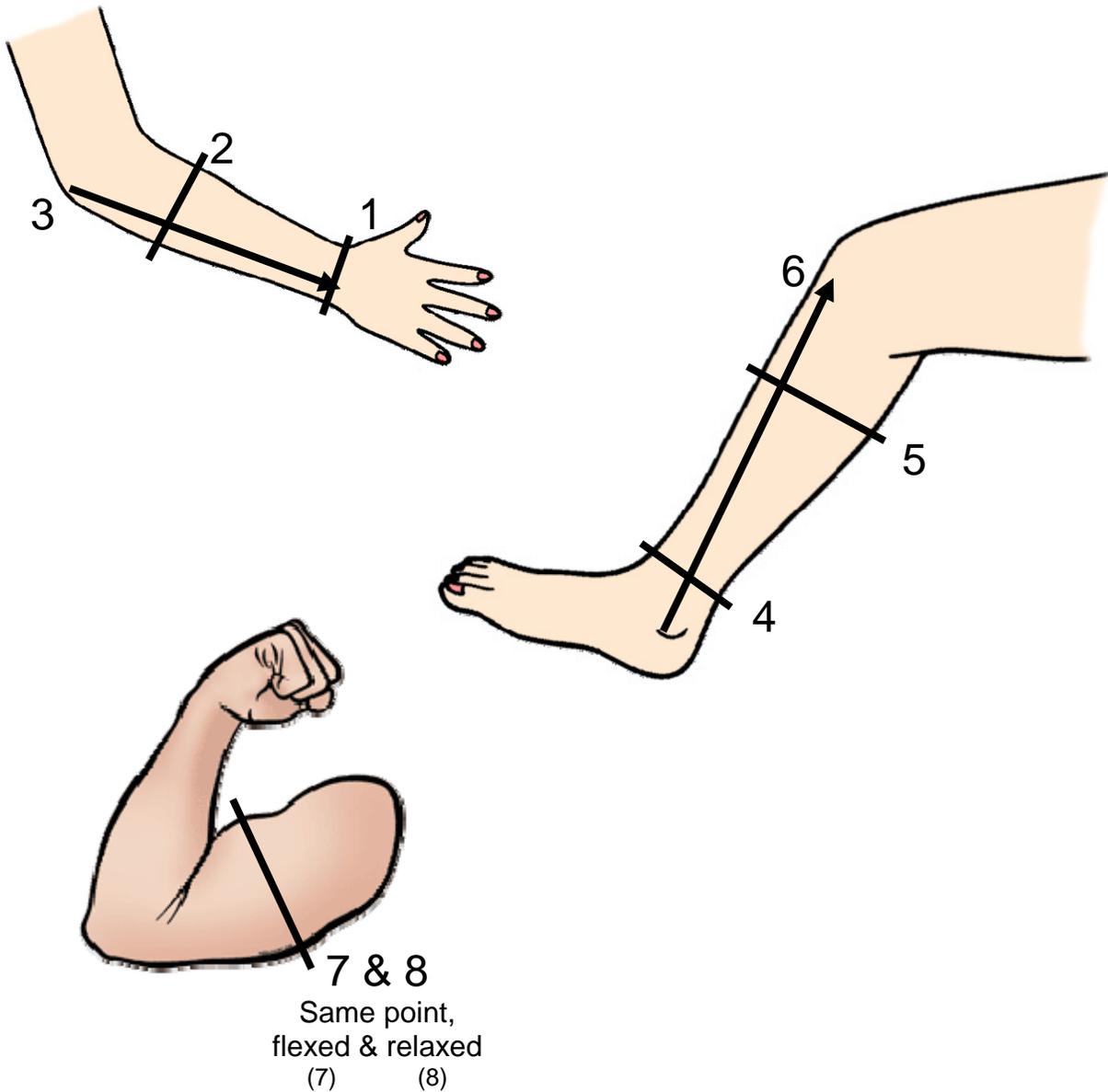
1. What is the dependent variable in this lab? Explain why it is considered dependent.
2. What is the ratio of wrist to ankle measurement? _____ : _____
 forearm to calf measurement? _____ : _____
 forearm to foreleg measurement? _____ : _____
 flexed to relaxed bicep? _____ : _____

Conclusion:

Be sure to tell me what you have learned from this mini-lab!!

Metric Me Measurement Points

1. **Wrist:** (circumference): measure it at its widest point
2. **Forearm** (circumference): measure at the widest point in a relaxed position.
3. **Forearm** (length): measure from the wrist joint to the elbow joint.
4. **Ankle:** measure it at the point just above the two large knobs of the tibia.
5. **Calf:** measure the circumference of the calf at its widest point in a relaxed position.
6. **Foreleg** (length): measure from the bottom of the tibial knob to the knee joint.
7. **Bicep** (Flexed): measure your bicep while it is flexed. Do this at the peak of your muscle.
8. **Bicep** (relaxed): measure the bicep of your arm while relaxed (at the same point as when it was flexed).



Crouch Biology



Teacher Notes:

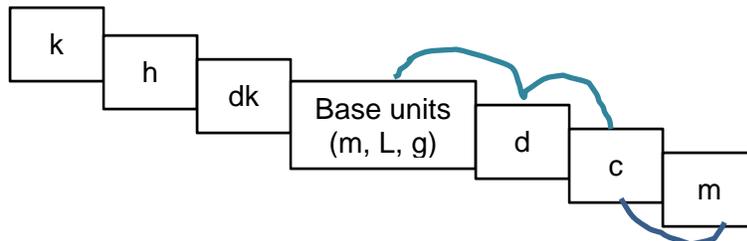
This activity helps to reinforce metric measurement by having students measure each other and convert to mm, cm, & m. They also create a graph of the information (my favorite!) ☺

Supplies needed:

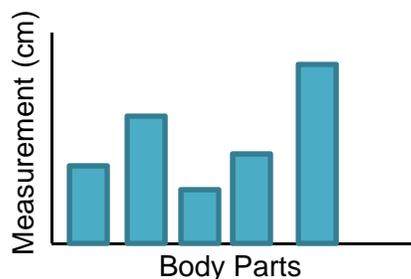
- ✓ Worksheets
- ✓ Metric tape measures (the flexible fabric kind)
- ✓ Graph Paper

Some things I always need to remind students of while they are working:

- ✓ Most rulers will give you the measurements in cm. Move the decimal once to the right to convert to mm & twice to the left to find m. (ex: 17.3 cm = 173 mm and 0.173 m)
*I like the metric stairs method:



- ✓ When creating the graph, choose 1 set of measurements (cm, mm, OR m) to compare body parts, not all 3 – it doesn't make sense, & that's the whole point of a graph!



- ✓ We use “interactive notebooks”, & this mini-lab goes right in. I have them put the WS on the right hand page, the graph & their answers on the left. *As this is a front to back WS, they create a “flap” and still have room under the WS to write the conclusion or answer questions as needed.

I hope you enjoy this activity! Please let me know if you have any questions, etc.

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Thanks again! Please feel free to contact me (crouchbiology4@gmail.com) with any questions or comments.

Thanks from Crouch Biology to:

