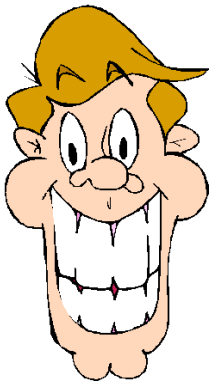
Smile Metric Lab



Lab Score:

_____ /40 pts

Objectives:

* to learn how to use a metric ruler to measure length
* to accurately read and record measurements taken in centimeters (cm) and millimeters (mm)

Materials:

rulers
yarn
smiles

Procedures:

1. Take a piece of yarn and measure your partner's smile straight across from corner to corner
2. Keep your fingers on the yarn as you transfer the yarn to the ruler
3. Write the student name, and record measurements, cm and mm, in Data Table for your classroom table
4. Pick a table representative to complete the classroom data table on the projector
4. Complete your own data chart from the projector data
5. Throw yarn away
6. Complete the questions, graph and conclusion

Data Table: (10 pts)

Student name	Measurement	Student name	Measurement	Student name	Measurement
Table 1		Table 3		Table 5	
1		13		25	
2		14		26	
3		15		27	
4		16		28	
5		17		29	
6		18		30	
Table 2		Table 4		Table 6	
7		19		31	
8		20		32	
9		21		33	
10		22		34	
11		23		35	
12		24		36	
Total Length		Total Length		Total Length	

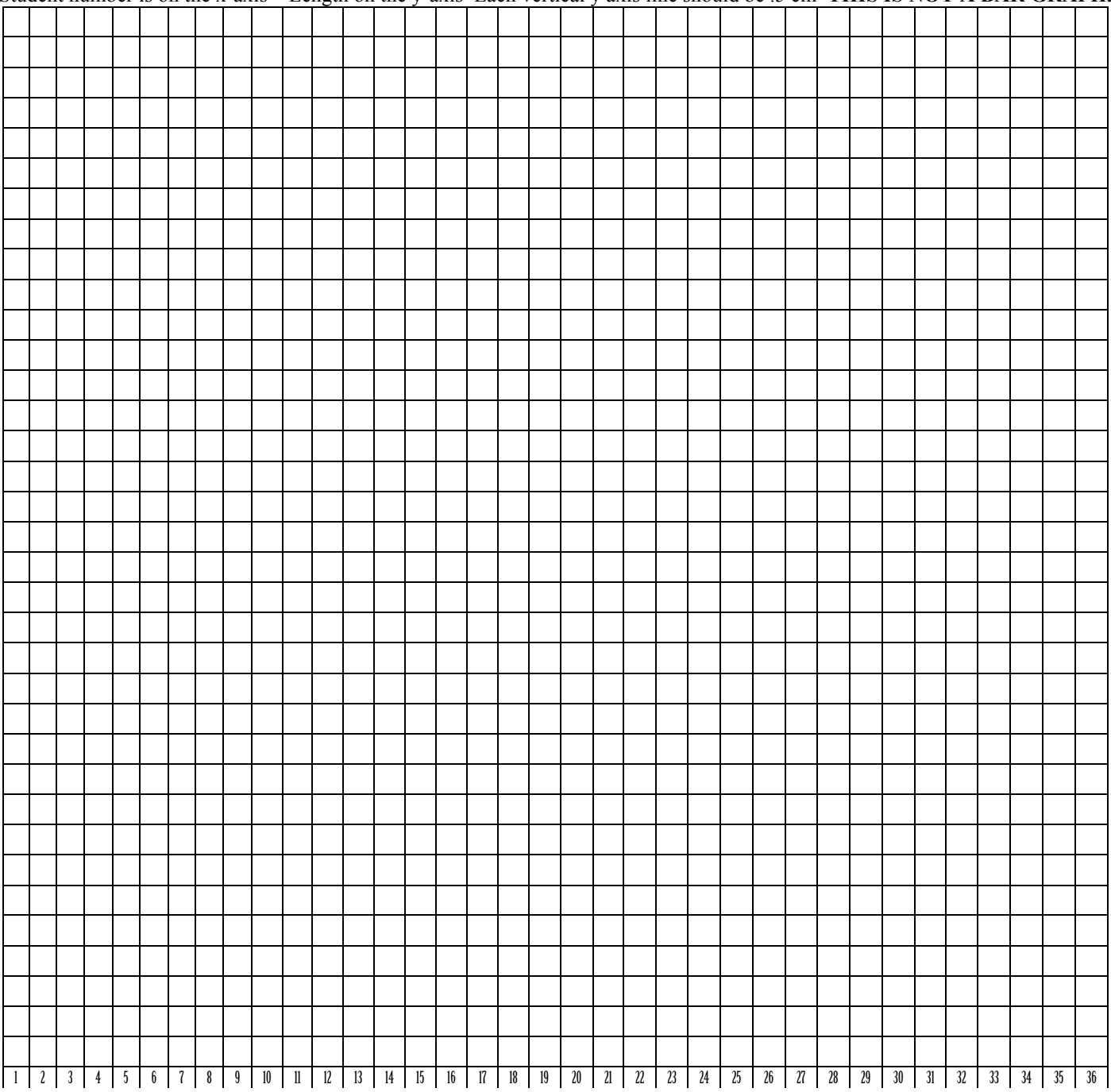
Total Length for the class: _____ Average Length in the class: _____

Analysis/Results: (5pts)

1. Who had the largest smile? _____cm: _____mm
2. Smallest _____cm? _____mm
3. Whose smile is in the average range? _____
4. Including everyone, how big is our smile as a class?!?! _____cm _____mm
5. What is the connection between cm and mm?
6. How many centimeters are on your ruler? _____ Millimeters? _____

(15pts) **GRAPH THE DATA POINTS** **Be sure to indicate the average with a color line**

Student number is on the x-axis Length on the y-axis Each vertical y axis line should be .5 cm **THIS IS NOT A BAR GRAPH.**



Conclusion: In 10 sentences write: what you learned, some concrete details, what you liked about this lab, what you would do different (10pts)

Lab: Lengthy Limbs

Part One: Thumb Length

Did you know… everyone has the same size thumb?

1. Record the names of all group members.
2. Measure from the **tip** of your thumb to the **first knuckle** in centimeters.
3. Record all results in the table.
4. Write the measurements on the **white board**.

Names	Thumb length (cm)

Part Two: Forearm to Foot

Did you know… the length of your forearm is equal to your foot?

Did you know? Shaquille O'Neal's

1. Measure from your wrist to your elbow in centimeters.
2. Record all results in the table below.
3. Take off a shoe & measure the length of your foot in centimeters.
4. Record all results in the table below.

Names	Forearm length (cm)	Foot length (cm)

Part Three: Height to Arm span

Did you know? Lebron James' wingspan is 214

Did you know…your arm span is equal to your height?

1. Take off your shoes & measure your height in centimeters (use the meter sticks by doors).
2. Record all results in the table below.
3. Then, record your current height to the **class chart** on the whiteboard.
4. Measure from the tip of your fingers to the tip of your fingers on the other arm (arm span).
5. Record all results in the table below.

Name	Height (cm)	Arm span (cm)

Conclusion/Analysis (2 points each)

1. Look at all the thumb measurements for the class on the whiteboard. Speculate what the average thumb measurement is: _____ cm

2. How close are everyone's thumb measurements?

3. Give one possible explanation for why that is.

4. How many centimeters different are your **forearm** & your **foot**? _____

5. How many centimeters different is your **height** from your **arm span**? _____

6. Do you think there is a relationship between a person's height & the size of their foot? Explain.

7. What are two advantages to using the metric system?

8. Find an item of approximately each length & write it on the line.

   - 5 mm _____
   - 500 mm _____
   - 40 cm _____
   - 400 cm _____
   - 1.2 m _____
   - 12 m _____