MASS OF OBJECTS LAB SUMMARY

Directions: ***Answer the following questions in complete sentences. You can hand write neatly or you can type your answers. Typed answers must be printed at home and handed in the day they are due.***

1. Describe three things you learned from doing this lab.
2. When you measure the mass of an object are you describing a physical property of the object or a chemical property of the object? Explain.
3. Explain what an outlier is and explain why we crossed them out.
4. Explain what instrument error is and give three examples of instrument error that could have occurred in this lab.
5. Explain what human error is and give three examples of human error that could have occurred in this lab.
6. Explain why we averaged the data for each object instead of picking the mass from one group.
7. Did you get any better at predicting the mass of an object? Explain.
8. Complete each part of this lab summary and staple the following in order to be turned in for a grade:
    a. Page one (top page) = Your Lab Summary answers 1-7 (put your first and last name in top right corner)
    b. Page two = Your bar graph; make sure your x and y axis are labeled with a measurement and unit!
    c. Page three = How do you find mass of object? Data Table / Class Data Table called Mass of Objects

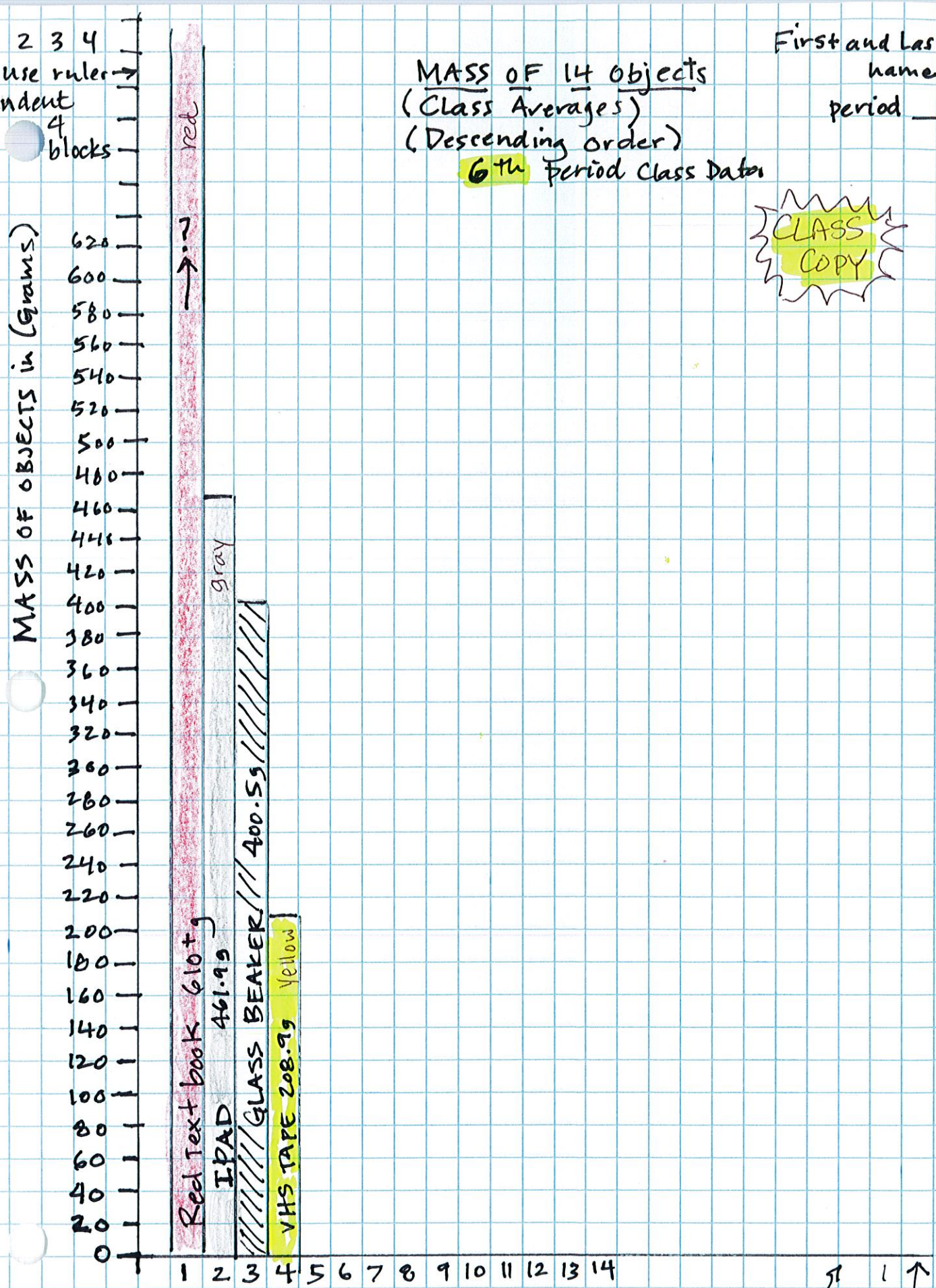
1 2 3 4
use ruler →
indent 4 blocks

First and Last name

period ____

MASS OF 14 objects
(Class Averages)
(Descending order)
6th Period Class Data

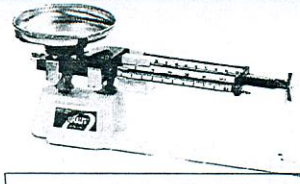
CLASS COPY



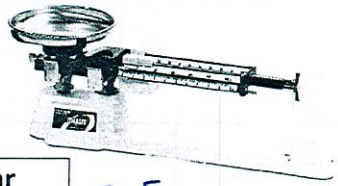
use ruler to draw line

1
2
3

indent



How do you find the mass of an object?



Name of Object	Prediction- Tell what you think the mass is before using the TBB	Your Group's Actual Mass Place object on TBB to find the actual mass in grams	Give the class Average for the mass of this object	Calculate how far off your prediction was from the class average
① Paper Clip	2.5g	1.3g	1.3g	1.2g off
② SMart Water Bottle	36.0 g		39.9g	3.6g off
③ Styrofoam Cup			3.1g	
④ Unsharpened Pencil			5.5g	
⑤ Petri Dish			17.4g	
⑥ WLMS Achiever Sign			39.4g	
⑦ Maxell Cassette Tape			65.8g	
⑧ JVC VHS Tape			208.9g	
⑨ IPAD			461.9g	
⑩ 100 mL Graduated Cylinder			40.4g	
⑪ Metal Tongs			169.2g	
⑫ Plastic Pipette			1.5g	
⑬ Glass Beaker (1000mL)			400.5g	
⑭ Red Text Book			610+ g	

$$\begin{array}{r} 2.5 \\ -1.3 \\ \hline 1.2 \end{array}$$

$$\begin{array}{r} 39.6 \\ -36.0 \\ \hline 3.6 \end{array}$$

1st pd
Jan 2017

MASS OF OBJECTS

	Name of Object	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	AVERAGE MASS
	Paperclip	1.3g	1.3g	1.3g	1.3g	1.3g	1.3g	1.3g	1.3g	1.3g
	H_2O Bottle	41.7g	39.1g	39.2g	41.5g	39.1g	39.0g	40.3g	39.1g	39.9
1	Styrofoam Cup	3.3g	3.0g	3.0g	3.1g	3.1g	3.3g	3.3g	3.0g	3.1g
2	Unsharpened pencil	5.6g	5.9g	5.5g	~~6.2g~~	5.3g	5.6g	5.9g	5.5g	5.6g
3	Petri Dish	17.3g	17.5g	17.1g		17.5g	17.6g	17.2g	~~16.6g~~	17.4g
4	WLMS Achiever sign	40.3g	39.8	39.5g	40.1g	39.5g	39.5g	40.2g	39.0g	39.7g
5	Cassette Tape	66.2g	65.5g	66.5g	65.3g	65.6g	65.5g	65.7g	~~64.5g~~	65.8g
6	VHS Tape	210.9g	209.3g	210.8g ~~207.8g~~	210.3g	~~207.5g~~	209.4g	209.5g	210.0g	209.7g
7	Ipad	~~408.1g~~	461.0g	466.4g	463.0g	464.0g	460.3g	460.1g	465.0g	462.9g
8	Grad cylinder	40.2g	40.2g	40.4g	~~46.3g~~	40.5g	40.5g	40.2g	40.3g	40.3g
1,2	Tongs		169.5g	169.1g	170.0g	168.1g	170.0g	168.2g	169.3g	169.2g
3,4	Pipette		1.5g	1.3g		1.5g	1.4g	1.5g	1.3g	1.4g
5,6	Beaker					398.0g	408.3g	400.1g	403.0g	403.1g
7,8	Text Book	too much	610+ grams							610+g

☒ = outliar (mistake) - do not average in

3rd
Jan 2017

MASS OF OBJECTS

	Name of Object	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	AVERAGE MASS
	Paperclip	1.3g	1.3g	1.3g	1.3g	1.3g	1.3g	1.3g	1.3g	1.3g
1	Water Bottle	41.0g	39.0g	X	38.1g	40.0g	39.0g	41.3g	39.1g	39.6g
2	Styr. cup	3.1g	2.9g	X	3.2g	3.2g	3.0g	2.7g	3.0g	3.0g
4	Pencil	5.5g	5.8g	X	6.1g	5.4g	5.5g	5.6g	5.5g	5.6g
5	Petri Dish		~~8.2g~~	X	17.9g	17.6g	~~7.5g~~	17.4g	17.2g	17.5g
6	Achiever Sign		39.9g	X	39.7g	39.8g	~~25.6g~~	40.4g	39.4g	39.8g
7	Cassette Tape		65.6g	X	64.5g	65.9g	65.9g	65.7g	65.2g	65.4g
8	VHS Tape		209.8g	X	210.4g	211.2g	209.5g	210.3g		210.2g
1	Ipad		461.0g	X	466.1g	463.1g	460.0g	461.5g	466.0g	462.3g
2	Grad Cyl.		40.3g	X	40.6g	40.5g	40.0g	~~41.3g~~	40.2g	40.3g
4	Tongs		169.5g	X	~~179.6g~~	168.4g	167.5g		168.1g	168.3g
5	Pipette		1.3g	X	1.5g	1.1g	1.5g	1.9g	1.5g	1.4g
6	Beaker		397.9g	X		397.1g	400.0g		403.0g	399.6g
	Red Text book	610+ grams		X						610+g

~~X~~ = outlier - mistake (do not include in average)

4th pd
Jan 2017

MASS OF OBJECTS

	Name of Object	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	AVERAGE MASS
1	paperclip	1.2g	1.4g	1.3g	1.4g	1.2g	1.3g	1.3g	1.3g	1.3g
2	water Bottle	41.1g	39.2g	39.1g	41.7g	~~30.0g~~	39.2g	41.1g	39.7g	39.9g
3	styrofoam cup	3.1g	3.1g	3.5g	3.3g	3.0g	~~1.0~~	3.1g	3.0g	3.2g
4	Pencil	5.7g	6.1g	5.5g	6.1g	5.3g		5.6g	5.6g	5.7g
5	Petri Dish	16.0g	~~10.2g~~	17.0g	17.2g	~~20.0g~~	17.6g	17.9g	~~14.2g~~	17.2g
6	WLMS Achiever	39.6g	40.0g	39.5g	40.0g	39.5g	39.4g	39.7g	~~35.5g~~	39.6g
7	Cassette Tape	65.0g	65.5g	66.5g	65.3g	65.5g	65.6g	65.5g	~~60.7g~~	65.6g
8	VHS Tape	211.0g	209.4g	209.0g	210.4g	~~207.4g~~	209.6g	209.5g		209.8g
1	Ipad	460.0g	461.5g	~~407.0g~~	464.4g	~~425.8g~~	466.4g	465.0g		463.4g
2	Grad Cyl.	40.4g	40.1g	40.5g	40.6g	40.2g	40.4g	40.5g		40.3g
3	Trngs		169.5g	169.5g	170.3g	168.0g	169.9g	169.7g		169.4g
4	Pipette		1.6g	1.3g	1.6g	1.4g	1.4g	1.5g		1.4g
5	Beaker		398.0g	405.3g	399.6g	398.1g	407.9g	400.7g		401.6g
	Red Text book	610+ grams								more than 610g

~~X~~ = outlier (mistake) - do not include in average

6th

Jan 2017

MASS OF OBJECTS

	Name of Object	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	AVERAGE MASS
1	paper Clip	1.2g	1.3g	1.3g	1.3g	1.5g	1.3g	1.3g	1.6g	1.3g
2	H_2O B.	40g ~~13.4g~~	37.5g	39.0g	41.5g	39.1g	39.0g	~~70~~	39.2g	39.9g
3	styrofoam cup	3.5g	3.2g	3.0g	2.9g	3.3g	3.0g	3.0g	3.2g	3.1g
4	unsharpened pencil	5.5g	5.8g	5.5g		5.3g	5.5g	5.5g	5.6g	5.5g
5	Petri Dish	~~10.0g~~	18.3g	17.0g	17.7g	~~9.4g~~	17.5g	~~15.3g~~	17.4g	17.4g
6	WLMS Achiever		~~38.2g~~	39.6g	~~28.0g~~	39.6g	39.3g	39.2g	39.4g	39.4g
7	Cassette Tape		66.5g	66.6g	~~64.9g~~	66.0g	65.5g	66.4g	65.5g	65.8g
8	VHS Tape		~~203.6g~~	209.0g	210.4g	207.5g	209.4	207.3g	209.6g	208.9g
1	Ipad		~~458.5g~~	461.9g	461.7g	462.6g	462.0g	461.3g	461.7g	461.9g
2	Grad. cylinder		~~37.5g~~	40.4g	40.5g	40.4g	40.5g	40.3g	40.4g	40.4g
3	Tongs		~~138.1~~	169.3g	170.1g	168.3g	170.0g	168.4g	~~165.1g~~	169.2g
4	Pipette			1.5g		1.5g	1.4g	1.4g	1.5g	1.5g
5	Beaker			400.4g		398.2g	400.0g	400.5g	403.2g	400.5g
	Red Text book	610+ grams								610+g

~~X~~ = outlier (error) - do not include in average