

Measuring Mass



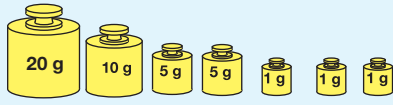
1. Draw a picture of the lab. Include the two main variables and the materials you will use.

2. Before you collect data, how can you tell that your two-pan balance is ready?




Collect

<i>K</i>	20 g	10 g	5 g	1 g	<i>M</i>
eraser	1	1	2	3	43 g



$20 + 10 + 5 + 5 + 1 + 1 + 1 = 43 \text{ g}$



3. Record the mass of 4 small objects and one object that is about 100 grams. Check the results with your partner.

Measuring Mass

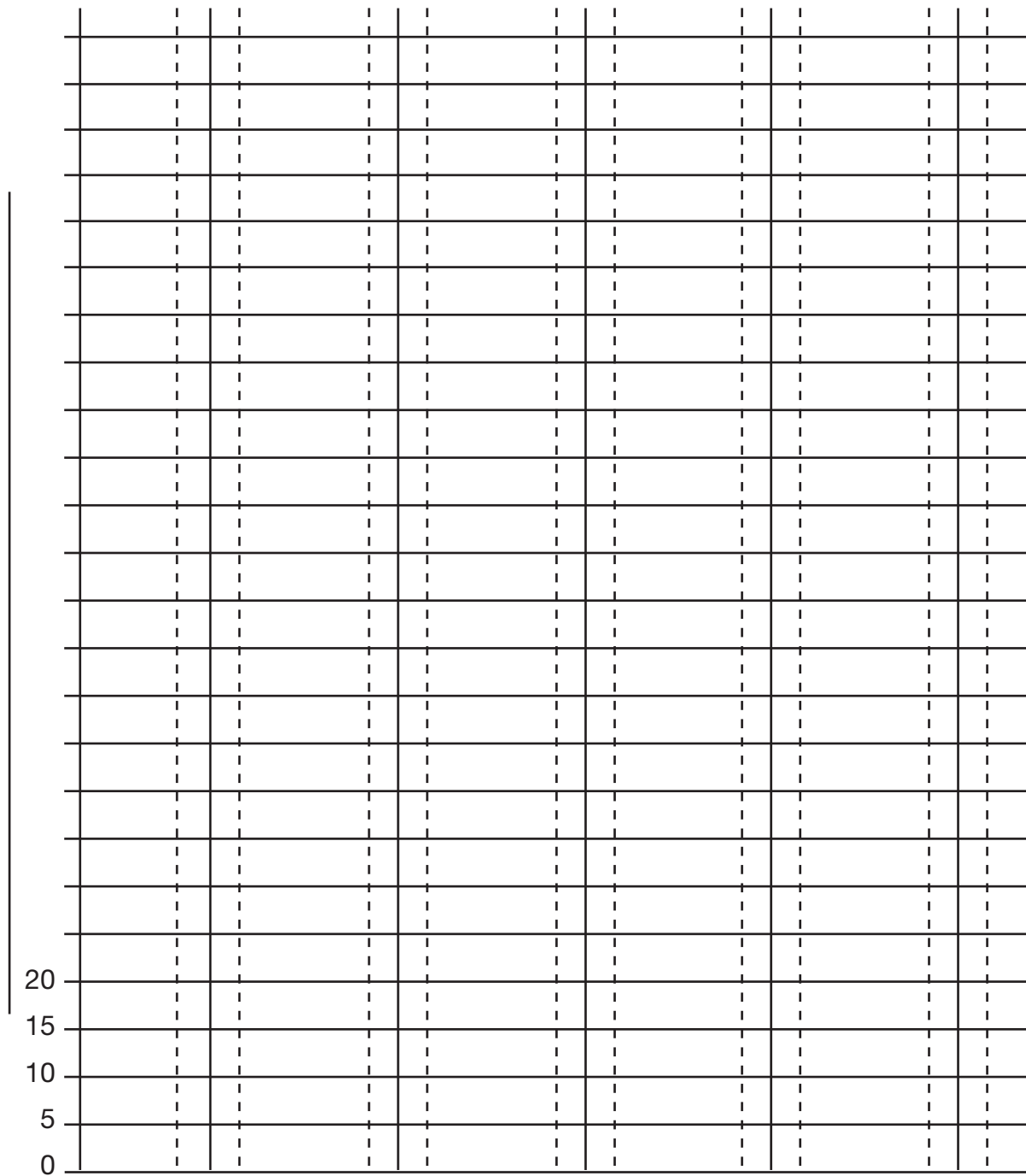
<i>K</i> Kind of Object	20 Grams	10 Grams	5 Grams	1 Gram	<i>M</i> Total Mass (In _____) unit



Graph

4. Make a bar graph of the data on the graph paper on the next page. Label the vertical (\updownarrow) and horizontal (\leftrightarrow) axes.

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5. A. Which of your objects has the least mass?

B. If you had four of these objects, would their combined mass be more than 100 grams?

Tell how you know.

6. A. Which of your objects has the most mass?

B. John has three objects. Each has a mass of 40 grams. Which has more mass, John's three objects or your heaviest object? Show or tell how you know.

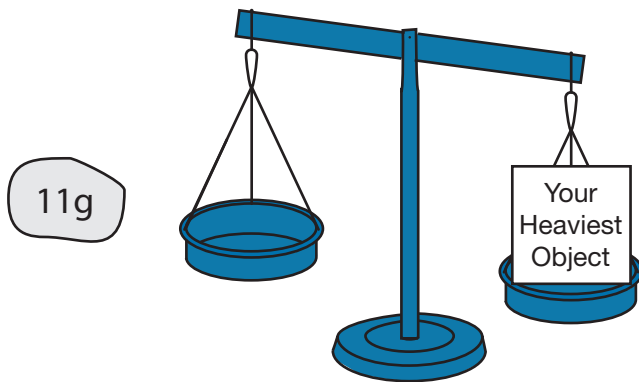


7. A. Add the mass of your lightest object to the mass of your heaviest object. What is the mass of the objects together? Write a number sentence.

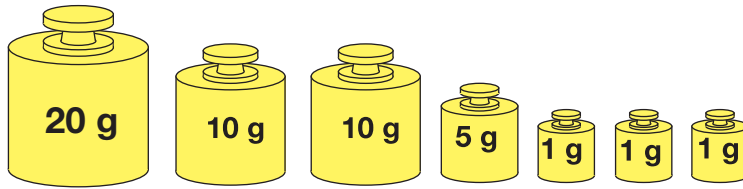
B. Put these two objects in one balance pan. Find their total mass using the balance. Did you get the same answer as in Question 7A? Why or why not?

8. How many more grams is your heaviest object than your lightest object?

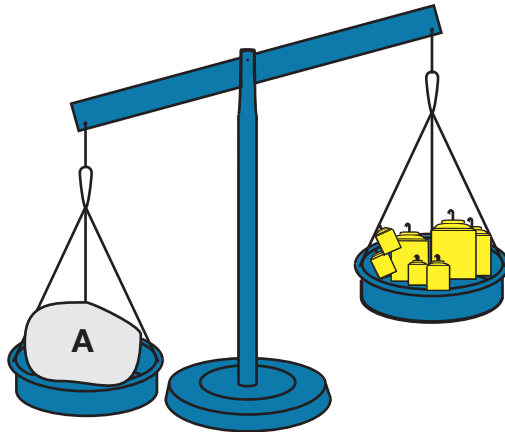
9. Frank's objects are each 11 grams. About how many of Frank's objects must go into the pan to equal your heaviest object?



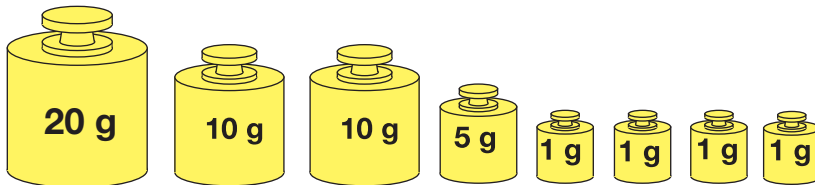
10. Mark uses these masses:



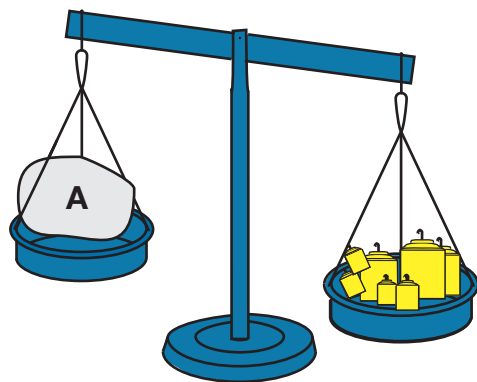
The balance looks like this.



Then Mark uses these masses.



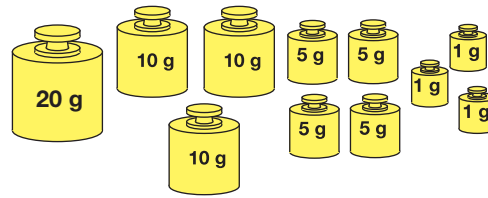
Now the balance looks like this.



Estimate the mass of Object A. _____ grams

11. Irma used these gram masses to measure the mass of her rock.

20 g	10 g	5 g	1 g
1	3	4	3



A. Write a number sentence to show the mass of Irma’s rock.

Number sentence _____

B. Frank measured the mass of the same rock and said, “I used different masses.” What masses could Frank have used to get the same total mass? Draw a picture and fill in the table.

20 g	10 g	5 g	1 g

Number sentence _____

C. Is there another way Frank could have gotten the same total? Show it.

20 g	10 g	5 g	1 g

Number sentence _____

Name _____ Date _____

Measuring Mass Feedback Box	Expectation	Check In	Comments
Compose and decompose numbers using ones, fives, and tens. [Q# 9–11B]	E1		
Compare and order quantities [Q# 5A–B, 6A–B]	E3		
Recognize that different partitions of a number have the same total. [Q# 11C–D]	E4		
Apply the properties of addition to write number sentences that represent mass. [Q# 11A–D]	E5		
Solve addition and subtraction problems (e.g., part-whole, join, take away) involving mass. [Q# 5B, 6B, 7A, 8]	E6		
Measure and compare the mass of objects using a two-pan balance and standard gram masses. [Q# 3, 7B, 10]	E7		
Make a scaled bar graph to find information about a data set. [Q# 4]	E10		
Read a data table or bar graph to find information about a data set. [Q# 5A, 6A]	E11		