

SEPTEMBER 10, 2017

PURPOSE: How do we ACCURATELY  
MEASURE MASS IN LAB?

WARMUP: COPY AND REPLACE  
THE ? WITH A NUMBER



22  
grams



?



49  
grams

(SUBTRACT the cup from  
cheese and cup.  
 $49 - 22 = 27$  grams)

don't put things on the scale  
without a cup

pre write on paper

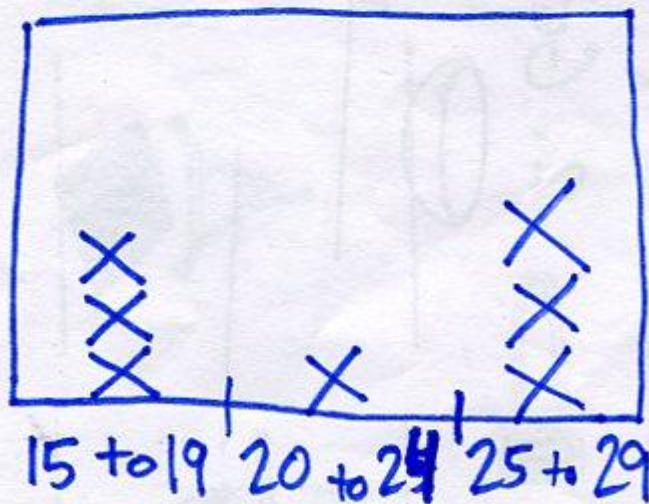
don't monopolize  
the scales

#2 How Do we Find  
WHAT THE CORRECT  
RESULT IS?

ONE WAY IS A HISTOGRAM

POSSIBLE LAB RESULTS :

17 25 16 20 17 26 25

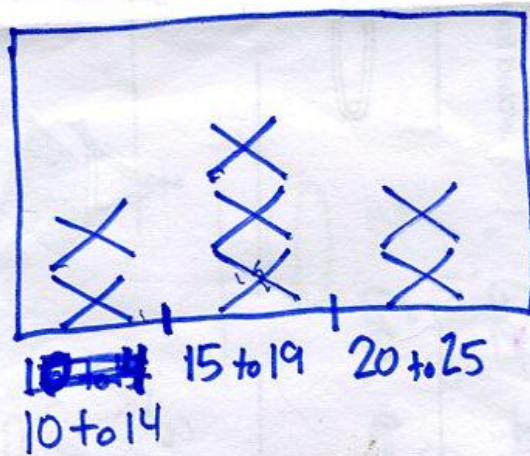


CONCLUSION: WE NEED  
TO RE-DO THE  
EXPERIMENT

One way to sort out bad  
data from good:

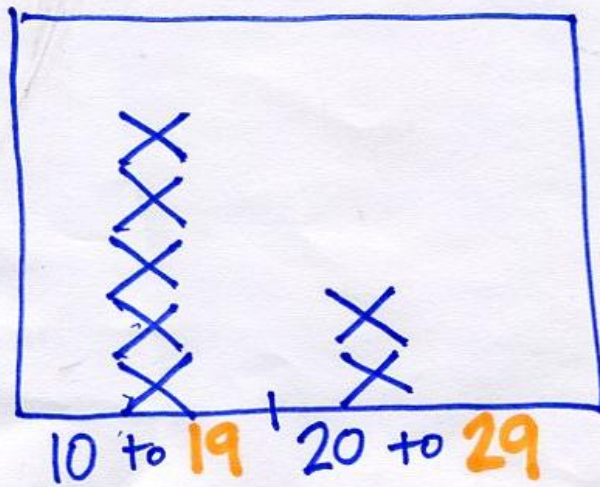
### HISTOGRAM

15, 25, 24, 17, 13, 14, 15





The "real" value seems  
to be in the center  
of the histogram.

9/10/2014. EXPERIMENT: WHAT IS THE  
MASS OF ICE IN WATER BEFORE AND  
AFTER MELTING?



THE "REAL" VALUE  
SEEMS TO BE IN  
THE MOST POPULATED  
BIN

TO COUNT THE PIECES OF  
MATTER, WE CAN TAKE A  
WEIGHT OR MASS.

	Weight	Mass
Definition	A MEASURE OF HOW MUCH GRAVITY PULLS SOMETHING DOWN	A MEASURE OF HOW MUCH MATTER
on the moon	your weight is less	your mass is the SAME
MACHINE TO MEASURE	A SCALE 	A BALANCE 

definition

measure  
with

on  
Jupiter

weight	mass
how strongly the object is pulled down by gravity	how much matter is there
a spring scale	a balance
your weight is more	your mass stays the same

9/10/2014 EXPERIMENT: HOW DOES  
MASS CHANGE WHEN A CHIP OF ICE  
MELTS?

9/10/2014 EXPERIMENT: HOW DOES  
MASS CHANGE WHEN STEEL WOOL  
IS FLUFFED?