NCTM April 5th, 2019
Supporting Math Discourse with the Science Classroom

Presenters:

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David Leib

Wichita Public Schools, Wichita Ks

agenda

1. C versus D Lab to collect data
2. Create data on whiteboards
3. Share whiteboards
4. Dialogue about chapter four, ‘Selecting, sequencing, and Connecting’ , of the book “5 Practices for Orchestrating Task-Based Discussions in Science”.

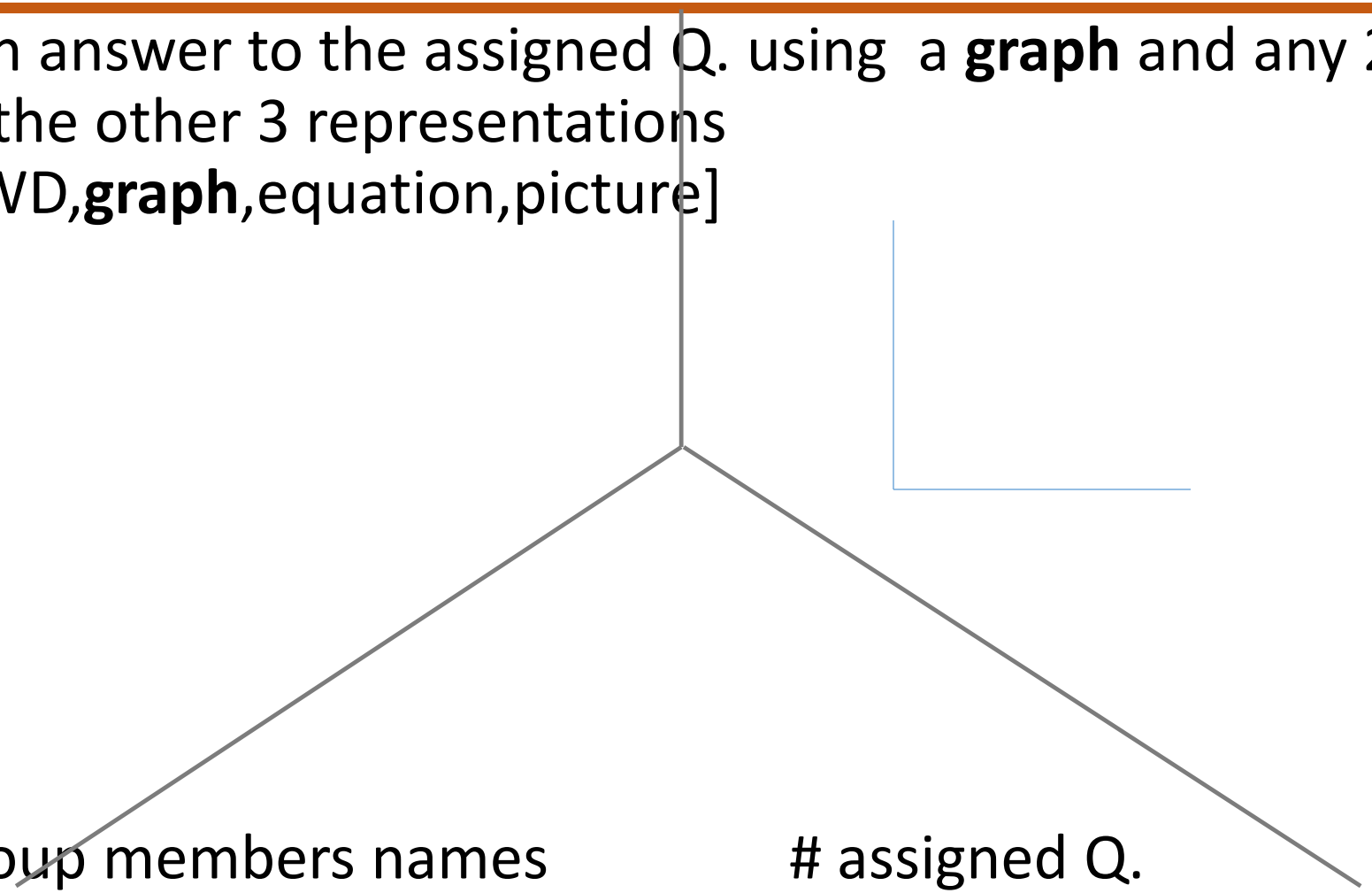
Worktime

- Collect data

Group #:	Assigned Question(s):
One	A,B
Two	A,C
Three	A,D
Four	A,E(D)
Five	A,F
Six	A,G
Seven	A,G

Your whiteboard needs:

An answer to the assigned Q. using a **graph** and any 2 of the other 3 representations [SWD,**graph**,equation,picture]



Group members names

assigned Q.

Question A

x **y**

Circle number	Diameter (X)	Circumference (Y)	Ordered pair (x, y)	About how many diameters are needed to complete a circumference? (Estimate)	Ratio: $\frac{\text{Circumference}}{\text{diameter}}$ Convert to a decimal
1.					
2.					
3.					
4.					
5.					

B.What is the pattern that you notice in your estimations and your exact answers in Chart A?

X-values represent the input of the diameter of the circles.

Y-values represent the changing circumference .

C. Estimate how many diameters it takes to complete a circumference. Show your work.

D. Complete this chart by estimating:

Diameter	Circumference
1	
	15
	36
4	

E. What did you do to find your answers for the missing spaces?

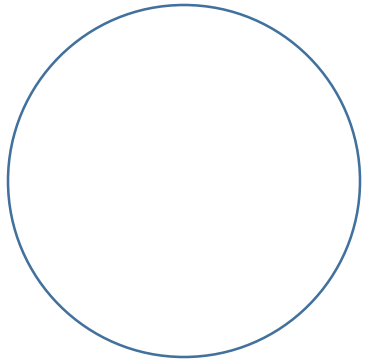
Diameter	Circumference
1	
	15
	36
4	

F. It takes a little more than three diameters to complete a circumference. It takes about 3.14 diameters. Complete the chart again, using this new information

Diameter	Circumference
1	
	15
	36
4	

G.Collect data from more circles and graph the ordered pairs. Find the slope of a line of best fit. How does the slope compare to the ratios? What does the slope of the line tell you about the relationship of the circumference to the diameter?

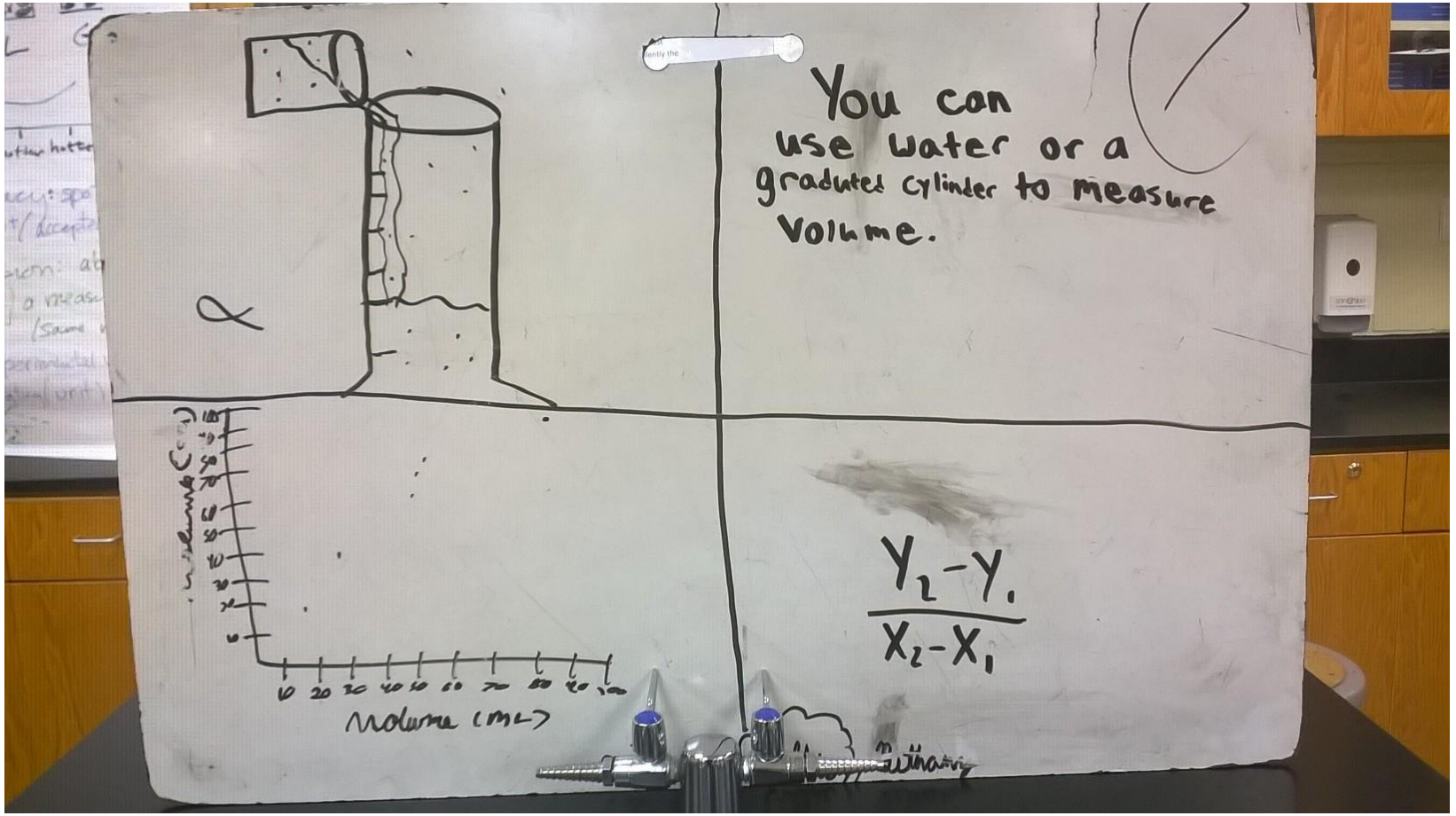
artifact



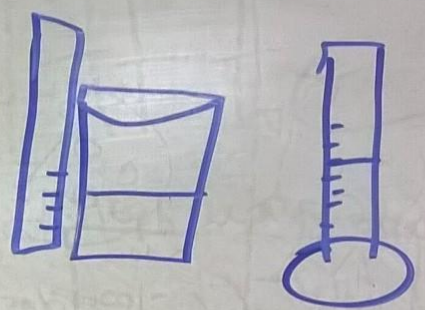
A rule for finding the diameter-of any circle- if you know the circumference would be……

A rule for finding the circumference-of any circle-if you know the diameter would be…..

Displacement linear model



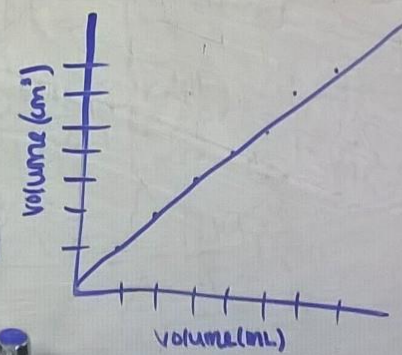
For every cm^3, there is about 1 mL of water

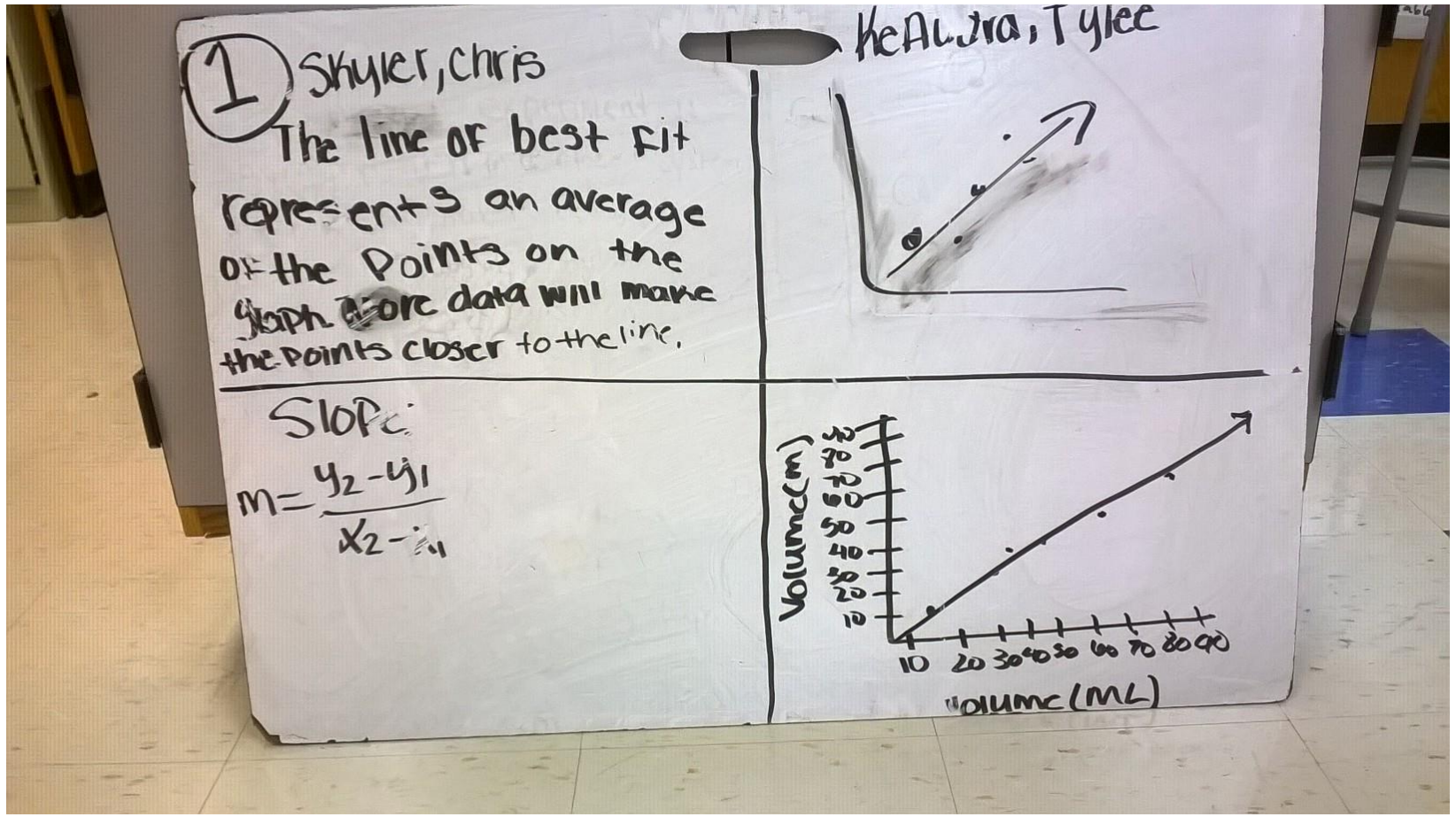


$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

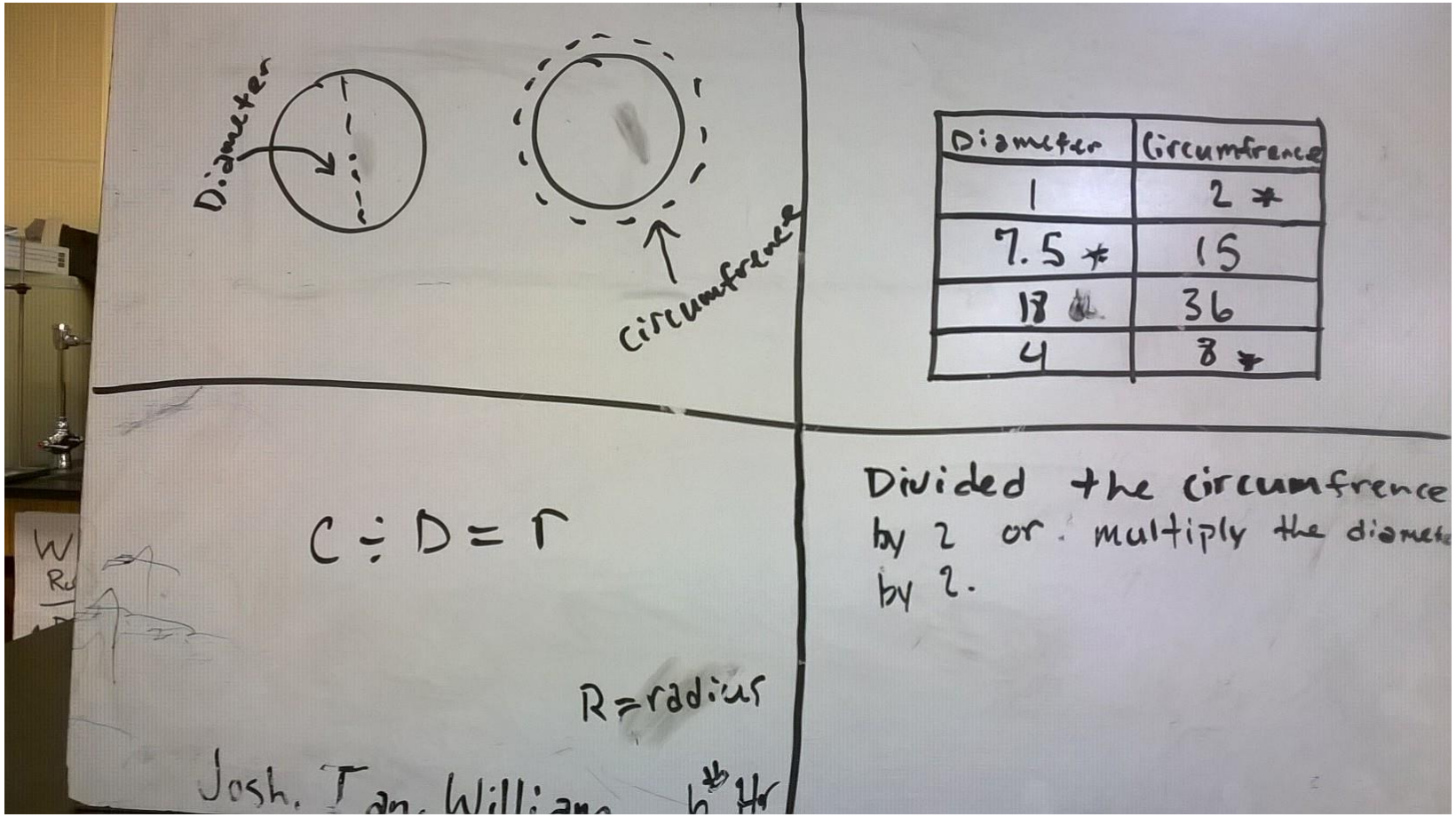
$$\frac{70 - 20}{50 - 10} = \frac{50}{40}$$

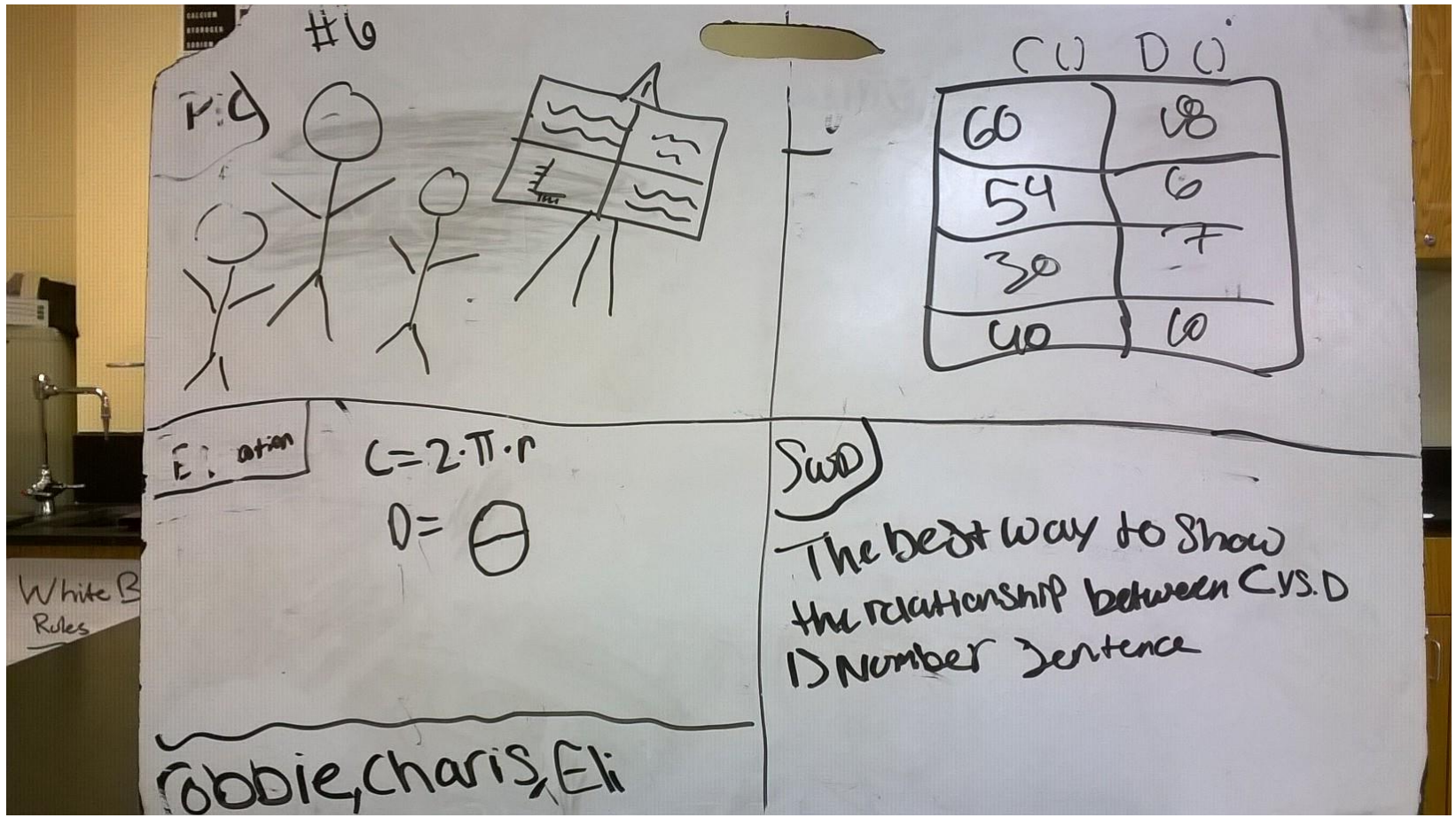
$$m = \frac{1.25}{1}$$

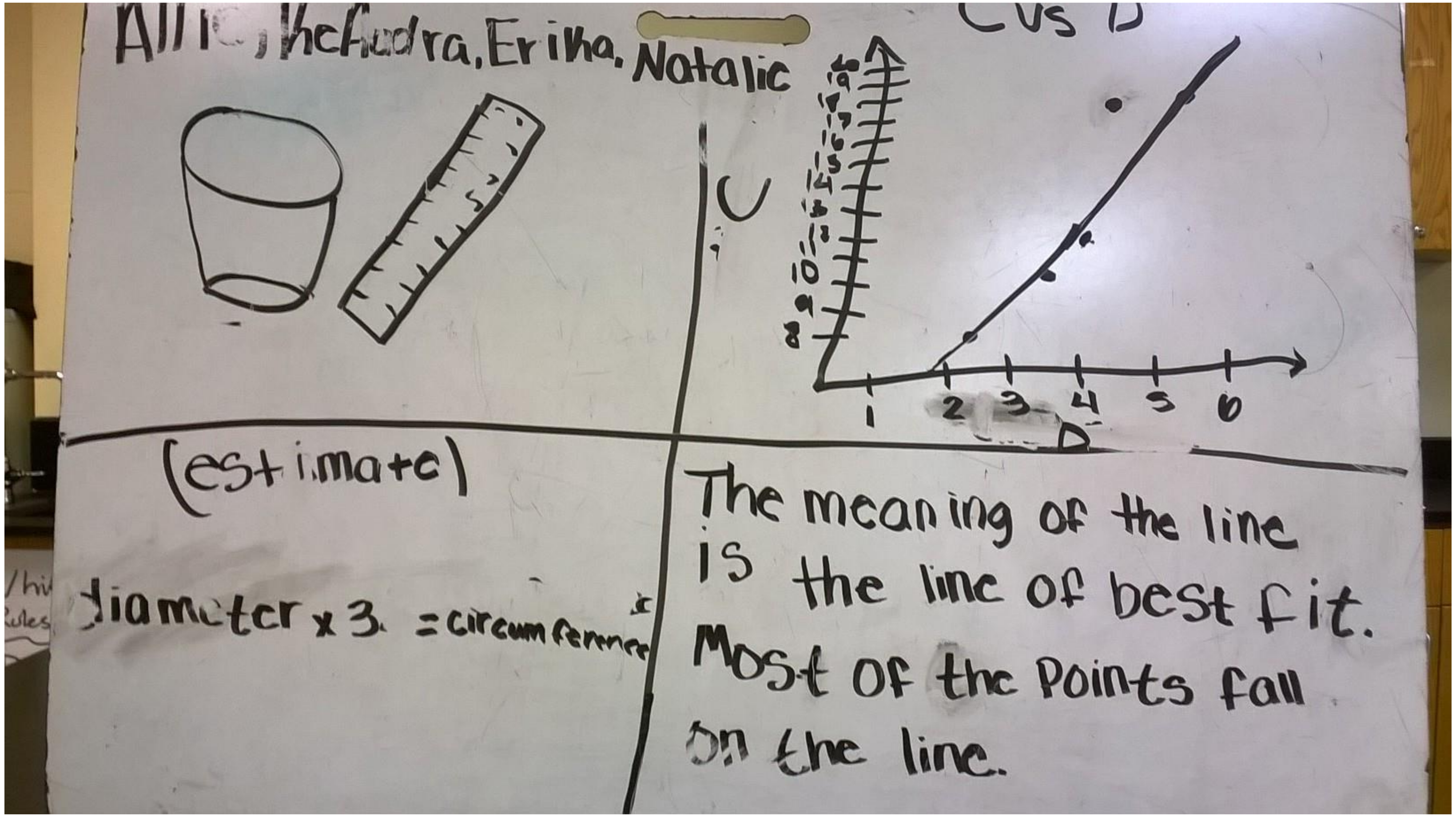


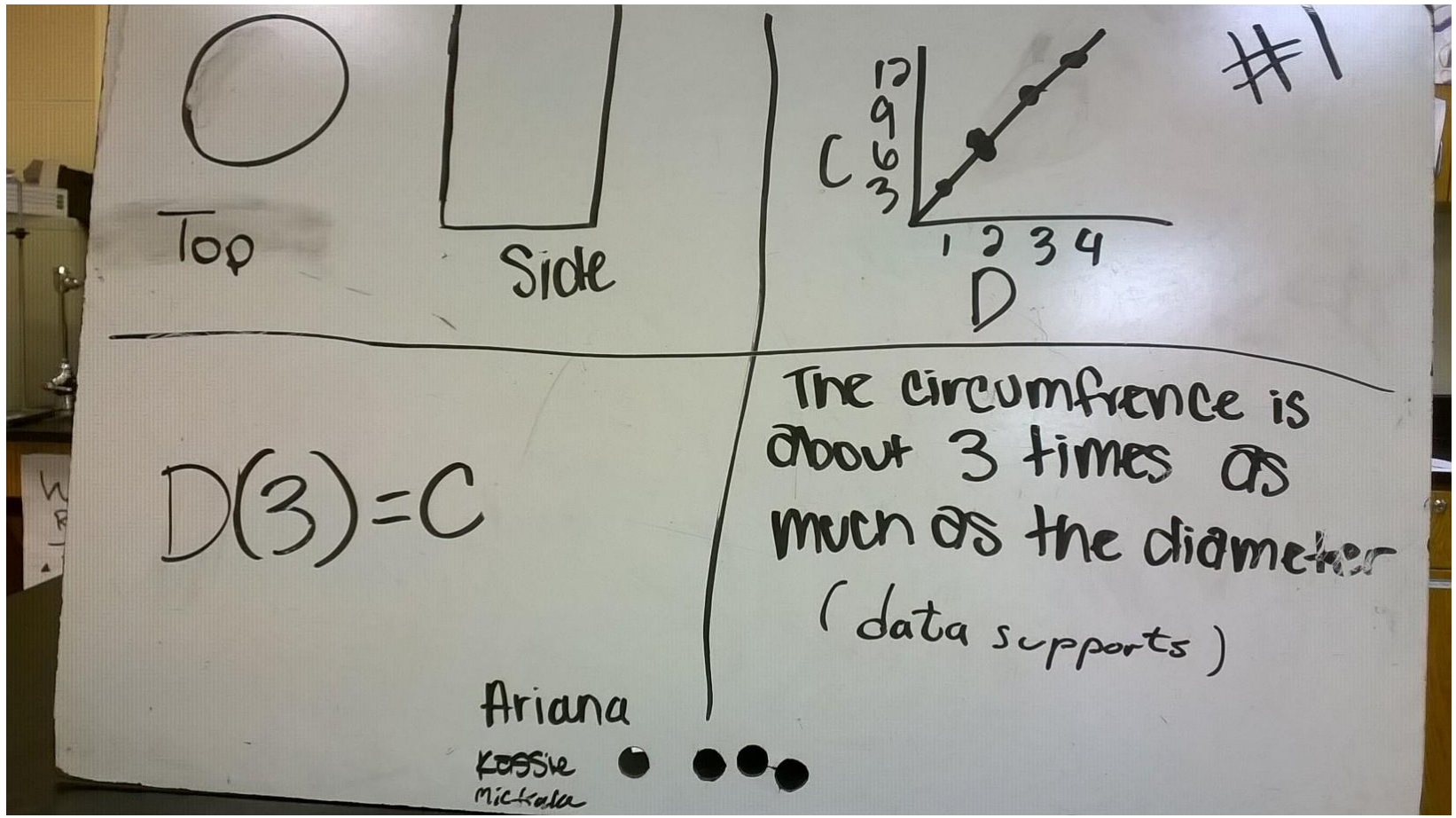

1 Skyler, Chris
The line of best fit represents an average of the points on the graph. More data will make the points closer to the line.
Slope:
$m = \frac{y_2 - y_1}{x_2 - x_1}$
Kealjra, Tylee
Volume (ml)
10 20 30 40 50 60 70 80 90
Volume (ML)

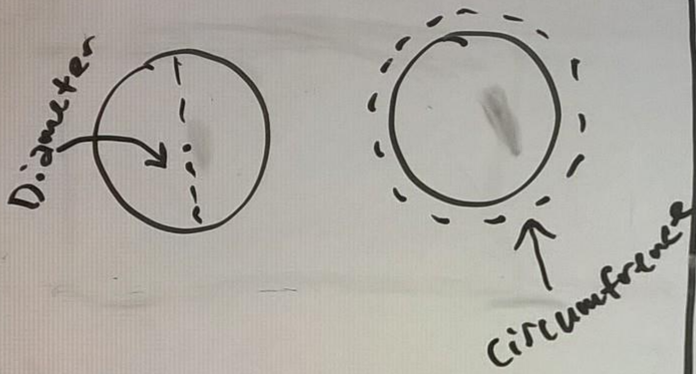
C and D lab linear model




#6
C ( ) D ( )
60 68
54 6
30 7
40 60
C=2·π·r
D=
The best way to show the relationship between C vs. D is Number Sentence
Robbie, Charis, Eli


Erika, Natalie
C vs D
C
1 2 3 4 5 6
D
(estimate)
diameter x 3 = circumference
The meaning of the line
is the line of best fit.
Most of the points fall
on the line.


Top
Side
C
12
9
6
3
1 2 3 4
D
#1
D(3)=C
The circumfrence is about 3 times as much as the diameter
(data supports)
Ariana
Kassie
Mickala



Diameter	Circumfrence
1	2 *
7.5 *	15
18	36
4	8 *

C ÷ D = r

R = radius

Divided the circumfrence by 2 or multiply the diameter by 2.

Josh, Ian, Williams 6th Hr

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American Modeling Teachers Association

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