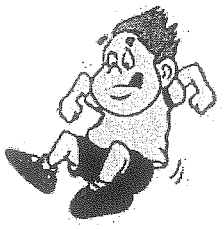
G1

Algebra 1: Unit 9, Lesson 2: Organizing and Displaying Data Name:

Part 1: Theories and collecting data



What is a standing jump?
https://www.youtube.com/watch?v=6P8qmLl4rZQ
- JUMP W/ NO RUNNING START

What factors do you think affect how far you can jump?
- HEIGHT
- USING ARMS MOMENTUM
- LEG LENGTH

Do you think students will jump farther if... THEY JUMP TWICE ?
- YOU KNOW WHAT TO EXPECT, SO YES? MAYBE?

Today you are going to be jumping to see how far you can jump. Twice.

But before we do that, as a class, we have to decide how our jumps will be measured.

- UNITS : INCHES, ROUND TO THE NEAREST INCH.
- STARTING LINE: TOES BEHIND LINE, AFTER JUMP, MEASURE TO BACK OF HEEL.
- SOCKS
- REDO IF TRIP/FALL.

Jump 1: Your jump length:

Before you measure a second jump, decide: do you think there will be a difference in jump length for you?

What are some factors that will affect the length of your second jump?

Jump 2: Your jump length:

Go up to the board to record both of your data values in each list. Then, copy the class's data.

Jump 1	Jump 2
(50) 70 ~~0~~ (44) 53 (43) (48) (54) (49) 33 (47) 67 ~~77~~ 62 64 64 72 69 (49)	(60) (50) (27) (44) 34 76 (49) (47) (51) 64 82 70 56 63 77 66 (53)

Part 2: Organizing Data

What could you describe about the data from Jump 1 just by the form that its in?

- generally, the jump 1's are smaller

If we wanted to get a better idea of how the data is spread out, how groups of data compare to other groups, etc, what would help? Table / graph

To help us organize our data, we will organize it in what is called A FREQUENCY DISTRIBUTION TABLE - A TABLE THAT SHOWS THE RESULTS OF EACH CATEGORY.

How could we categorize our data? *Break it up into ranges of jump lengths.*

Frequency Distribution Table: Jump 1

Jump Length	*Frequency*
33 - 40	1
41 - 48	4
49 - 56	5
57 - 64	3
65 - 72	4
73 - 80	1

TOTAL = 18

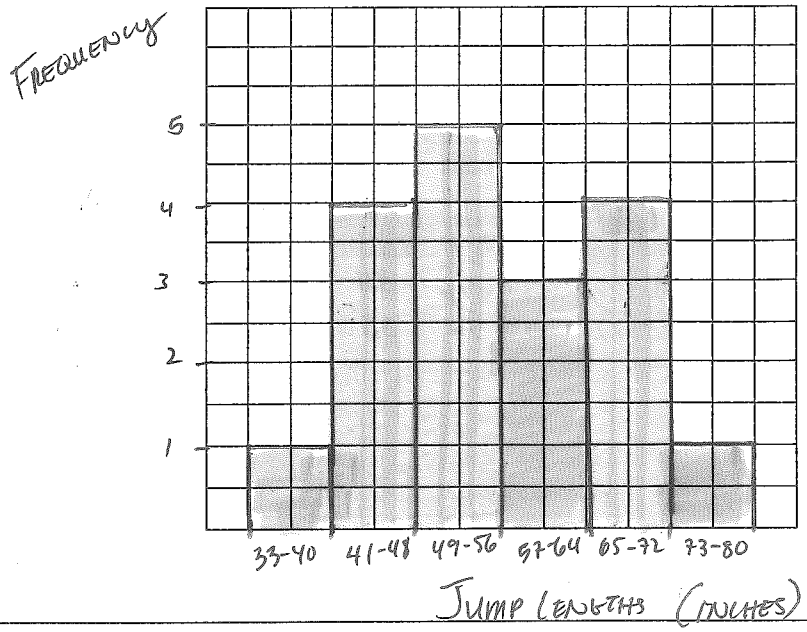
A HISTOGRAM: TYPE OF BAR GRAPH USED TO DISPLAY FREQUENCY OF DATA.

The bars in the graph are of EQUAL WIDTH and TOUCH.

The x-axis: CLASSES

The y-axis: FREQUENCY

Jump 1



How to create a histogram/ FREQUENCY DISTRIBUTION TABLE

1. FIND MAX & MIN: SUBTRACT
   77 - 33 = 44
2. DECIDE HOW MANY CLASSES YOU WANT: 5-15
3. GUESS AND CHECK WITH THE BOUNDARIES: ⇒ THE VALUES THAT BEGIN & END EACH CLASS.

Algebra 1: Unit 9, Lesson 2: Organizing and Displaying Data Name:

Part 3: What, more frequency tables?

We can further analyze our frequency distribution by creating a ***relative frequency table.***

For example, ***Jump 1:***

Jump Length	33-40"	41-48"	49-56"	57"-64"	65-72"	73"-80"	TOTAL
Relative frequency	$\frac{1}{18} = 0.056$	$\frac{4}{18} = 0.222$	$\frac{5}{18} = 0.278$	$\frac{3}{18} = 0.167$	$\frac{4}{18} = 0.222$	$\frac{1}{18} = 0.056$	$\frac{18}{18} = 1$

1. Using some relative frequencies, form some conclusions:

   EX: 22% OF ALGEBRA STUDENTS CAN JUMP 41"-48";
   MOST OF THE STUDENTS CAN JUMP 49"-56",
   THE

2. How can you ensure that you've correctly converted the frequencies to relative frequencies?

   THE SUM IS 1 : 18 OUT OF 18

We organized this data into categories, and based on them, found the frequencies. The categorical variable was jump length. What other categories could we break out data into?

3. Create a two-way table based on our results.

	Jump 1 Length (Classes)						Total
Gender	33-40"	41-48"	49-56"	57"-64"	65-72"	73"-80"	
Girl	0	4	4	0	0	0	8
Boy	1	0	1	3	4	1	10
Total	1	4	5	3	4	1	18

From this two-way table…

1. What percentage of students could jump at least 49-56 in? $\frac{5}{18}$
2. What percentage of girls could jump at least 49-56 in? $\frac{4}{8} = 0.5$
3. Versus…what percentage of people who jumped 49-56 in were girls? $\frac{4}{5} = 0.80$
4. What percentage of boys could jump at least 49-56 in?

   $\frac{1}{10} + \frac{3}{10} + \frac{4}{10} + \frac{1}{10} = \frac{9}{10} = 0.90$