Bar Graph

What kind of pet do you own?
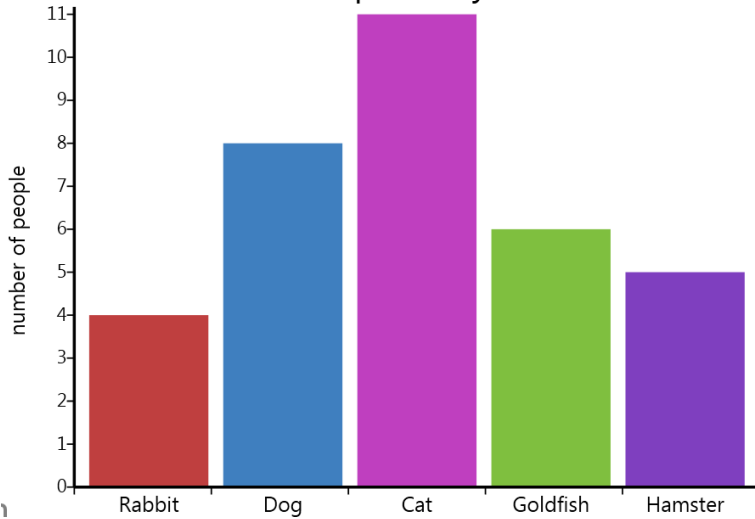
Histogram

Heights of 30 people

Heights in cm   www.analyzemath.com
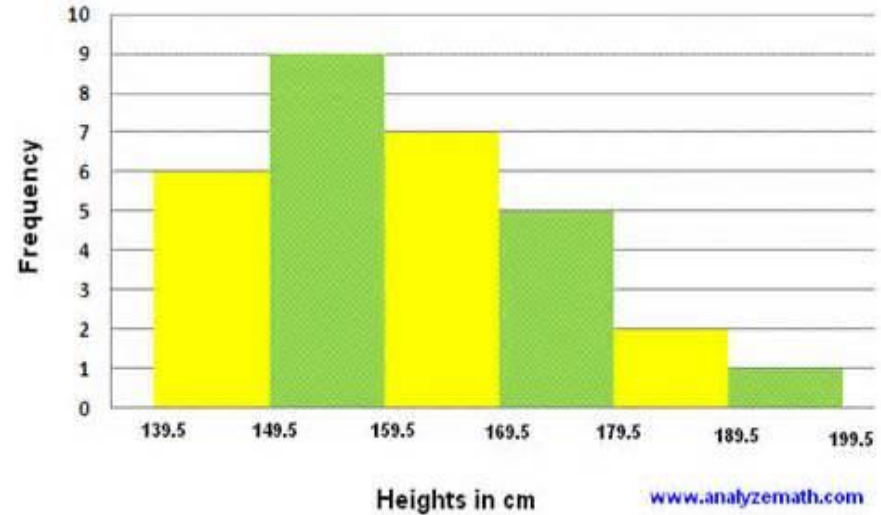
Differences?
1) Bars do not touch in a bar graph. They do in a histogram.
2) Data is often *qualitative* in a bar graph.
3) Data is often *continuous* in a histogram. (i.e. can be a range of *real* numbers).

3 The data below represents the approximate distance (in m) between the school and the house of each student in a class.

5 000	12 000	27 000	9 000	17 500	22 800	13 450	34 500
800	15 000	17 000	7 500	2 000	3 400	2 700	1 600
1 200	3 700	950	5 100	5 100	6 200	8 000	4 700
3 000	3 600	1 800	450 .	9 200	6 300	5 500	4 100

a) Group the data into classes and organize it in a data table.

b) Draw the corresponding histogram.

Distance between the school and the students' houses

Distance (m)	Frequency
[0, 5000[	
[5000, 10000[	
[10000, 15000[	
[15000, 20000[	
[20000, 25000[	
[25000, 30000[	
[30000, 35000[	

Distance to school

students

15
12
9
6
3
0

5 000   10 000   15 000   20 000   25 000   30 000   35 000

Distance (m)
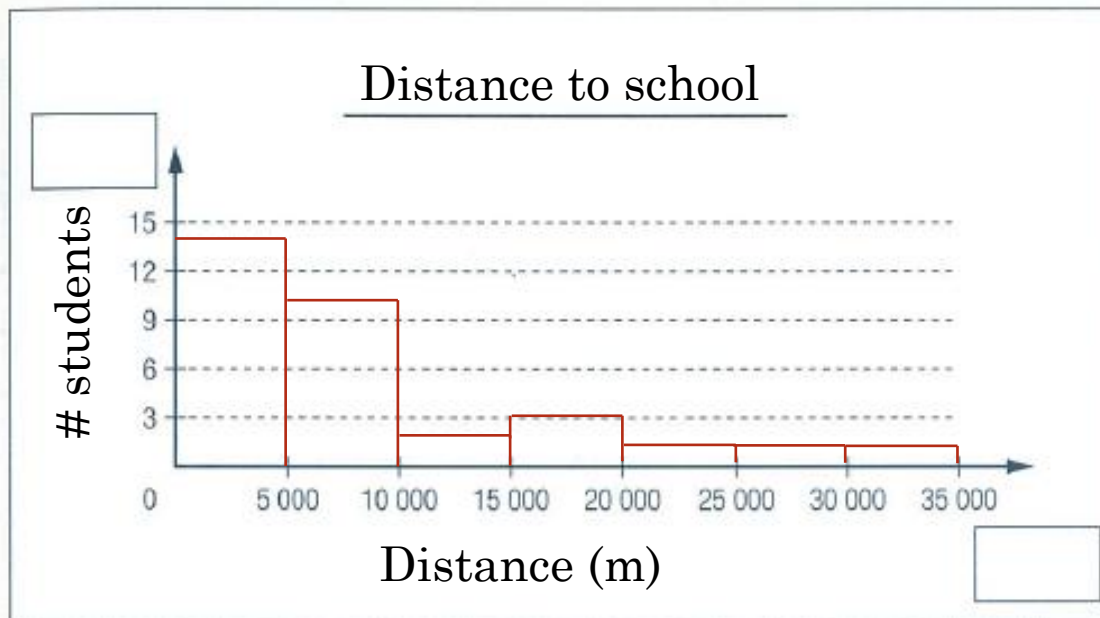
WORLD 10-3, PART 2: MEAN, MEDIAN, & MODE FROM GROUPED DATA TABLES

Learning Intention:
Goals: To calculate mean, median, and mode from grouped data, or for a histogram.

Success Criteria:
1) I understand the difference between an odd-numbered and even-numbered group of data, and how that affects median.
2) I understand how to find the central value of a "class" to find the mean.
3) I understand how to find the modal class.

HANDOUT: A light-bulb company tests the lifespan (in hrs) of the electric light bulbs it produces. A random sample of 50 bulbs is taken.

Lifespan (h)	Frequency		
[80 – 120[	4		
[120 – 160[	8		
[160 – 200[	10		
[200 – 240[	14		
[240 – 280[	8		
[280 – 320[	6		
Total	50		

The modal class is the class with the highest frequency.
What is the modal class? _____[200-240[_____

HANDOUT: A light-bulb company tests the lifespan (in hrs) of the electric light bulbs it produces. A random sample of 50 bulbs is taken.

Lifespan (h)	Frequency		
[80 – 120[	4		
[120 – 160[	8		
[160 – 200[	10		
[200 – 240[	14		
[240 – 280[	8		
[280 – 320[	6		
Total	50		

We approximate the median using the centre of the medial class.

a) What is the medial class? ___[200-240[___

b) What is the median? (Approx?) __220___

Total frequency = 50 (even list)
Median = value of the *middle* of the 25th and 26th light bulb in the list

HANDOUT: A light-bulb company tests the lifespan (in hrs) of the electric light bulbs it produces. A random sample of 50 bulbs is taken.

Lifespan (h)	Frequency	Centre	Freq x C
[80 – 120[	4	(80+120)/2 = 100	4 x 100 = 400
[120 – 160[	8	140	1120
[160 – 200[	10	180	1800
[200 – 240[	14	220	3080
[240 – 280[	8	260	2080
[280 – 320[	6	300	1800
Total	50		10 280

What is the mean? $\dfrac{Sum}{Total\ Freq} = \dfrac{10\ 280}{50} = 205.6\ hours$

Practice
Page 159, 160: #3, #4, #5