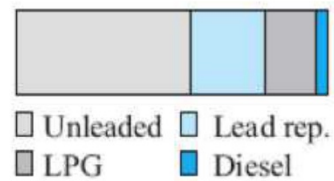
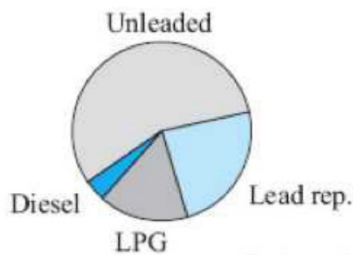
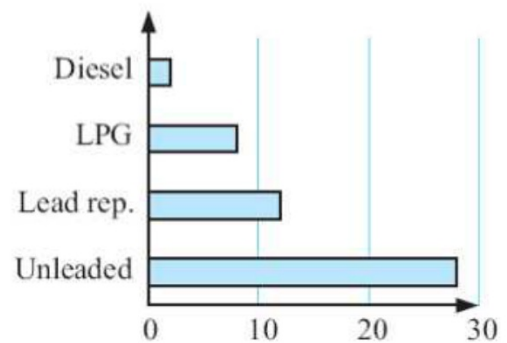
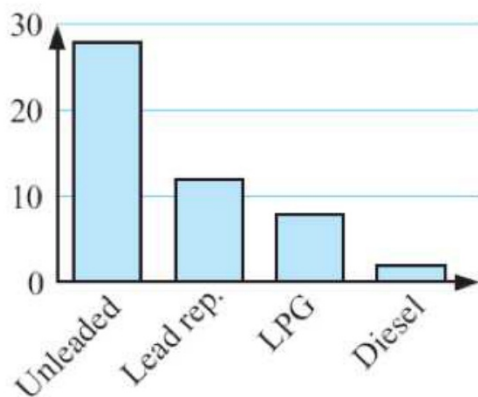


## Displaying data

- Pie Charts and Segment Chart: mostly used with Categorical/quantitative.



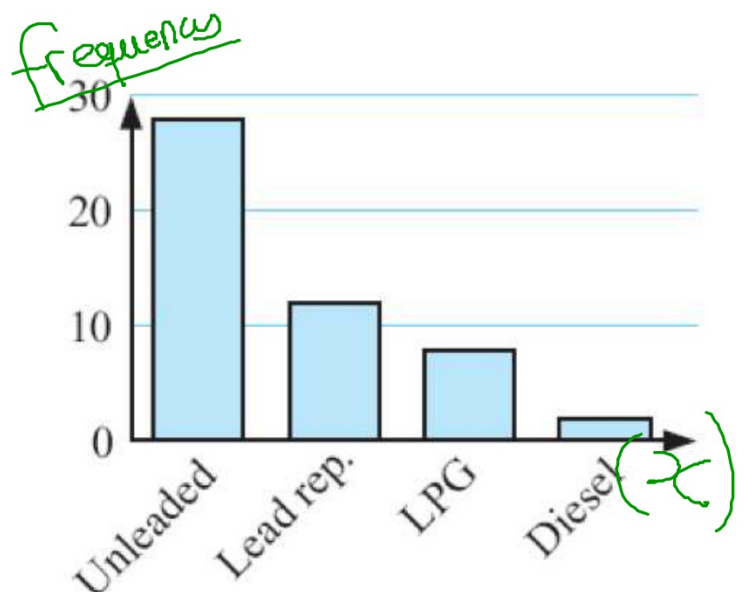
- Bar Charts: Mostly used Categorical or Numerical discrete.  
Not used with Numerical Continuous



## Be able to read Bar Graphs!

- You need to be able to create (or read) frequencies out of your bar graphs.
- For example:

$x$	$f$
Unleaded	28
lead	12
LPG	8
Diesel	1



$\frac{x}{f} \begin{matrix} 1 & 2 & \dots & \dots \end{matrix}$

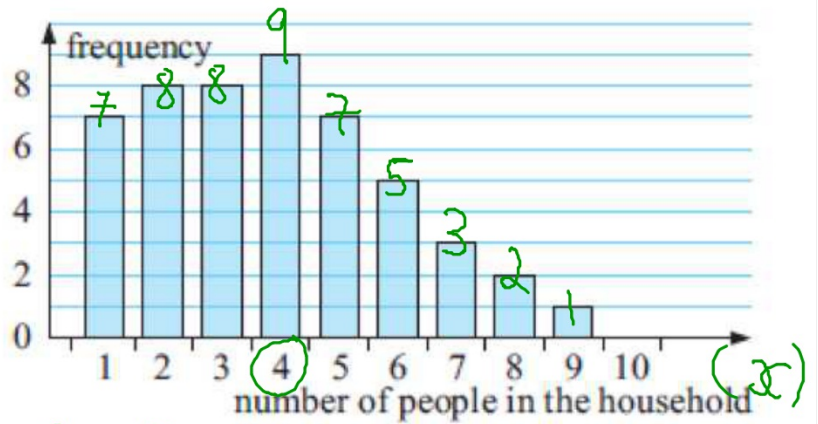
## Be able to read Bar Graphs!

- Numerical data: a bit more tricky!

$n = ?$

$x$	$f$
1	7
2	8
3	8
4	9
5	7
6	5
7	3
8	2
9	1
10	0

$\rightarrow \sum f = 50$



$n = 50$

Mode = 4 people in the household

## Grouped data: why do you think?

- Discrete data could be presented in groups.
- Reason: it's more relevant bc the data is too vast

For example: A local kindergarden is concerned about the number of vehicles passing by. (between 8:45 am and 9:00). They collected the data over 30 consecutive days:

$n = 30$

Results:

~~27~~, 30, 17, 13, 46, 23, 40, 28, 38, 24, 23, 22, 18, 29, 16, 35, 24, 18, 24, 44, 32, 52, 31, 39, 32, 9, 41, 38, 24, 32

## Grouped data: why do you think?

- How can you better present the data?

discrete grouped.

endpoints of intervals

Number of cars	Tally	Frequency
0 to 9		1
10 to 19		5
20 to 29		10
30 to 39		9
40 to 49		4
50 to 59		1
Total		$\Sigma f = 30$

## Grouped data: why do you think?

- How can you better display the data?

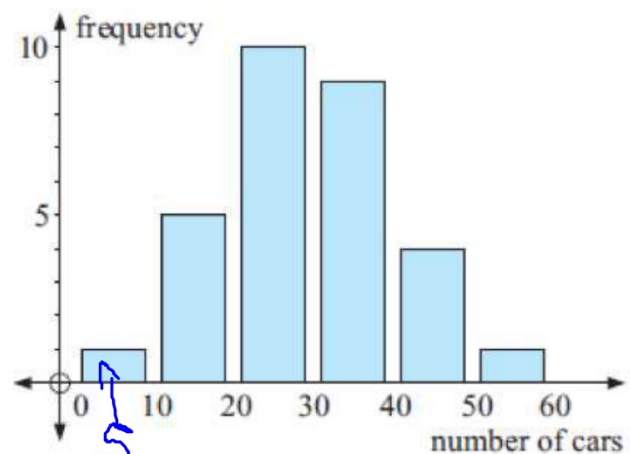
column graph

This display works very well to show the **MODE** of the data!

- Be careful for:

endpoints.

Number of cars	Frequency
0 to 9	1
10 to 19	5
20 to 29	10
30 to 39	9
40 to 49	4
50 to 59	1





Now let's really do some work?

Categorical data:

What can you really do with it?

- Mode: The one value of the variable that occurs the most.
- Percentages: (back and forth)  
(refer: colour of cars project)

## Examples

$n=60$

2. The number of matches in a box is stated to be 50, but the actual number has been found to vary. The number of matches in a sample of 60 boxes were counted & the results found are shown:

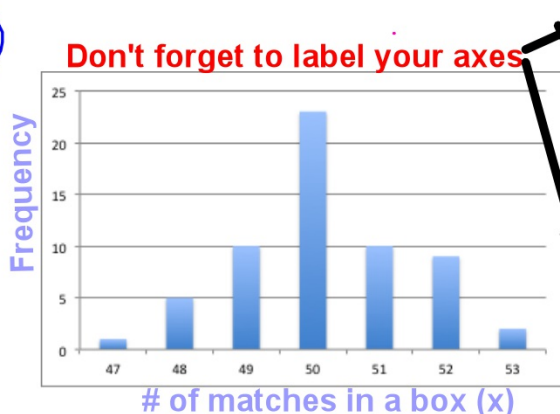
51 50 50 51 52 49 50 48 51 50 47 50 52 48 50 49 51 50 50 52  
52 51 50 50 52 50 53 48 50 51 50 50 49 48 51 49 52 50 49 50  
50 52 50 51 49 52 52 50 49 50 49 51 50 50 51 50 53 48 49 49

- Construct a frequency table for this data.
- Display the data using a bar chart.
- What is the mode?
- What percentage of the boxes contained exactly 50 matches?

ⓐ

x	f
47	1
48	5
49	10
50	23
51	10
52	9
53	2
$\Sigma f$	$= 60$

ⓑ



Horizontal axis is the values of your variable (the "thingy" you are analysing!!!)

Vertical axis is the frequency for each value (the "how many of each")

c) Mode: Look @ highest frequency  
(23)

mode = 50 matches

d)

$$\% \text{ of exactly } 50 = \frac{23}{60} \times 100$$

$$= 38.3\%$$