Section 10-2 Displaying Data Part I

In this section we look at how to visually illustrate data.

Data collected may be categorical, numerical, or ordinal.

1. Categorical data represent characteristics in groups (or categories).

2. Numerical data are collected on numerical variables.

3. Ordinal data combine categorical and numerical data. This data take categories and asks survey participants to rate them on a scale.

1. Pictographs use pictures to represent tallies of categorical data. It is important to have a legend that explains what the picture represents. Pictographs are useful for a quick visualization of data, but are not accurate when partial pictures are used.

Day	# mins spent reading
Mon	25
Tues	18
Wed	20
Thurs	15
Fri	30

Mon	□□□□□
Tues	□□□▯
Wed	□□□□
Thurs	□□□
Fri	□□□□□▯

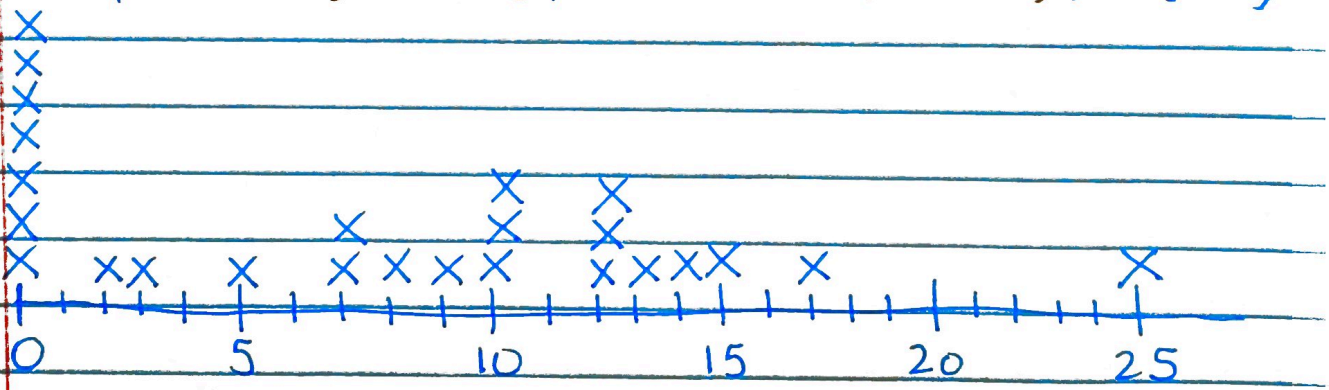
Each □ = 5 mins

2. Dot Plots (Line Plots)

A line plot is similar to a pictograph, but no numerical values are lost in the graph. Gaps, clusters, and outliers are more apparent with line plots than with tables.

ex1 Construct a line plot for the following data.

12, 5, 7, 3, 0, 2, 0, 10, 12, 9, 0, 0,
15, 17, 25, 7, 8, 10, 12, 13, 0, 0, 10, 14, 0



3. Stem + Leaf Plots

These are similar to line plots, except they are drawn vertically and digits are used instead of x s.

ex 2 Draw a stem + leaf plot for:

97, 63, 21, 63, 52, 87, 82, 91, 73, 70, 81, 66, 92, 85

9	7, 1, 2
8	7, 2, 1, 5
7	3, 0
6	3, 3, 6
5	2
4	
3	
2	1

My Lab may ask you to put the leaves in numerical order

stem ↗ ↖ leaves

* To compare similar data we can use a back to back stem + leaf plot.

3, 2, 0	9	3, 4, 4, 8
9, 4, 1, 1	8	1, 2
6, 3	7	0, 1, 1, 5

4. Frequency Table

These are similar to a stem + leaf plot except exact values are omitted & instead a tally is kept.

We can have categorical freq tables or grouped frequency tables. Your book only focuses on grouped freq. tables.

ex 3 Construct a grouped freq table for:
97, 63, 21, 63, 52, 87, 82, 91, 73, 70, 81, 66, 92, 85

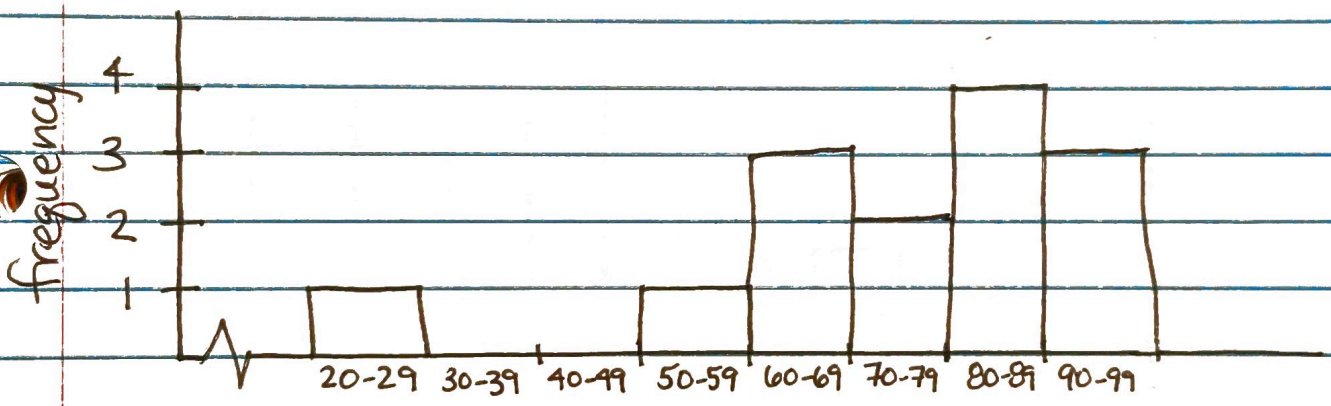
We must first group scores into intervals (classes) that are all the same size with no overlap.

class	tally	frequency
90-99	III	3
80-89	IIII	4
70-79	II	2
60-69	III	3
50-59	I	1
40-49		0
30-39		0
20-29	I	1

5. Histogram

A histogram is the graph of the data from a grouped frequency table. It is made up of adjacent bars whose height is the frequency.

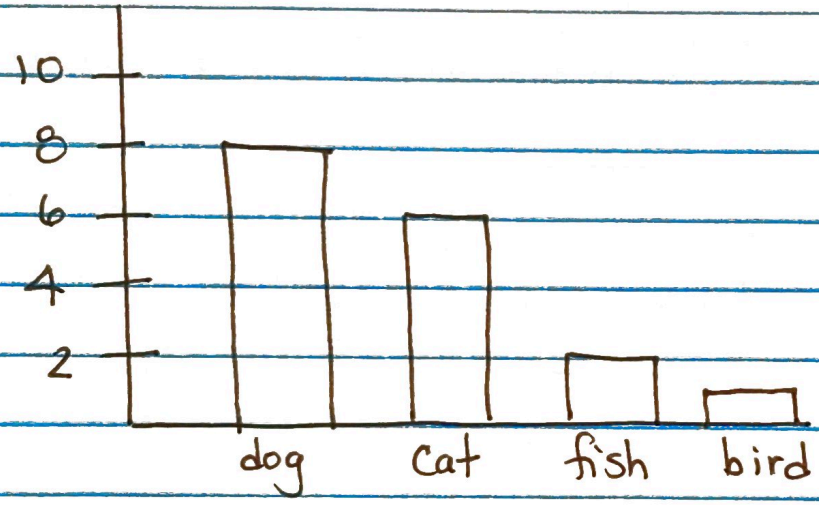
ex 4 Draw a histogram for the data in ex 3.



The bars should touch, have equal width, and the height be the frequency of that interval.

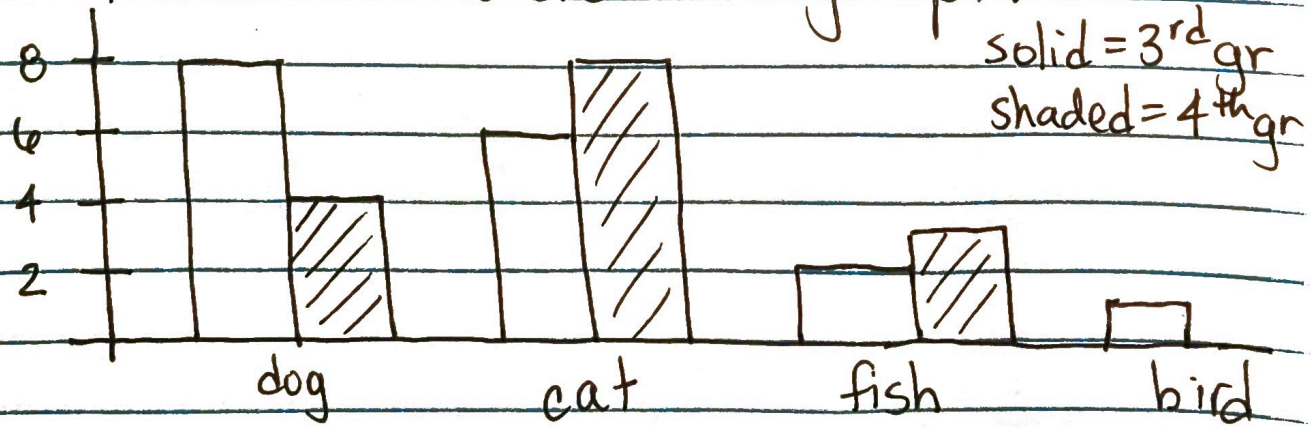
6. Bar Graph

A bar graph is somewhat like a histogram but it typically is used for categorical data. The bars have spaces between them, unlike histograms.



(from a survey of a 3rd grade class)

* If we wanted to compare data we could use a double bar graph.



7. Circle Graph (Pie Chart)
These are useful when showing parts of a total.

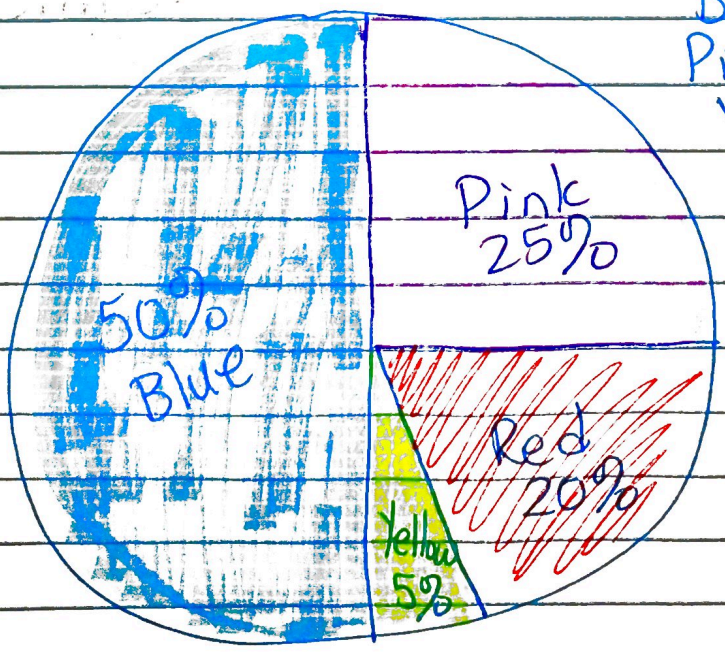
ex 5 Draw a Pie chart for the following data.

Favorite colors of a 2nd grade class

Blue	10
Pink	5
Yellow	1
Red	4

Total is 20

Blue 10/20 = 50%
Pink 5/20 = 25%
Yellow 1/20 = 5%
Red 4/20 = 20%



end 10-2