

5.2 Displaying Data

There are many ways to interpret data. Analyzing measures of central tendency is one we have investigated so far. Today we look at more visual ways of comparing and interpreting data.

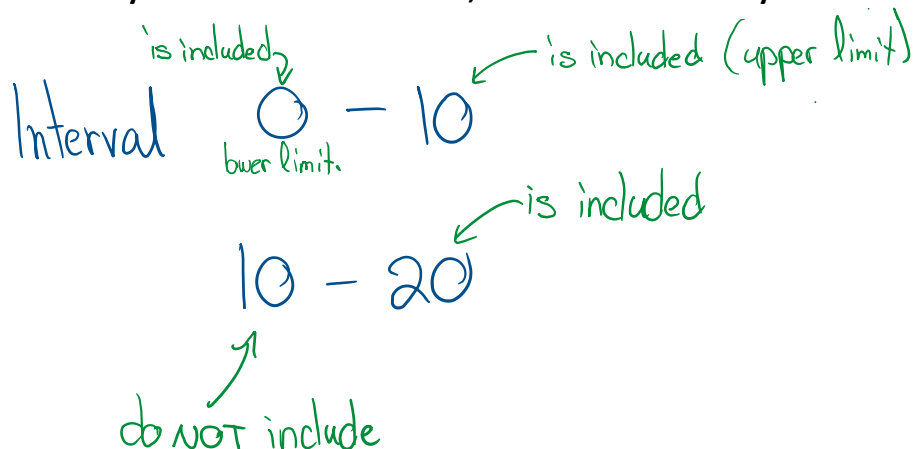
Frequency distribution is a set of intervals (table or graph) in which raw data is organized, each interval is associated w frequency that indicates the # in each interval

Frequency table shows the tally and total # measurements within an interval as you organize.

Histogram graph of frequency table, x-axis are the intervals and y-axis is frequency.

Frequency polygon graph frequency distribution, produced by joining midpoints of intervals w straight lines.

To set up your frequency table, you must determine what your intervals will be. This depends on the dispersion of data and the desired amount of information. When you create your intervals, there are NO GAPS. This can seem confusing as lower and upper limits repeat. Remember, **the upper limit is always included in the interval, the lower limit is only included in the very first interval.**



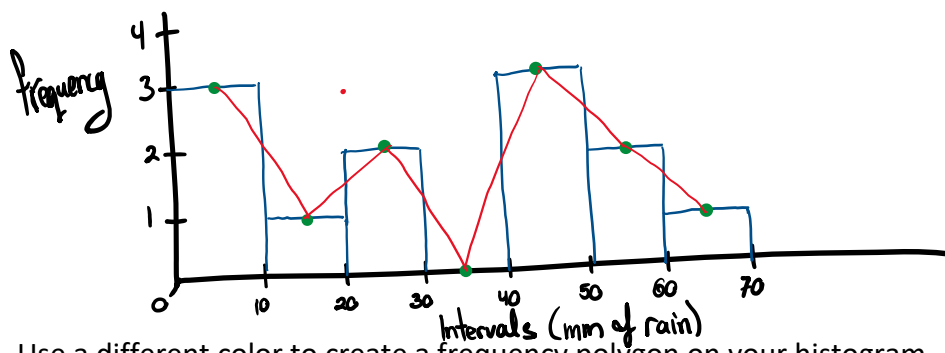
Create a frequency table to analyze the average monthly rainfall in Prince George over the last 30 years. Beside your table, create the corresponding histogram.

Precipitation

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Monthly rainfall (mm)	10	9	16	28	45	63	56	49	50	51	22	9

Included in 0-10.

Interval (mm)	Tally	Frequency
0-10		3
10-20		1
20-30		2
30-40		0
40-50		3
50-60		2
60-70		1



Use a different color to create a frequency polygon on your histogram.

"In red" ↑

Comparing Data Using Histograms

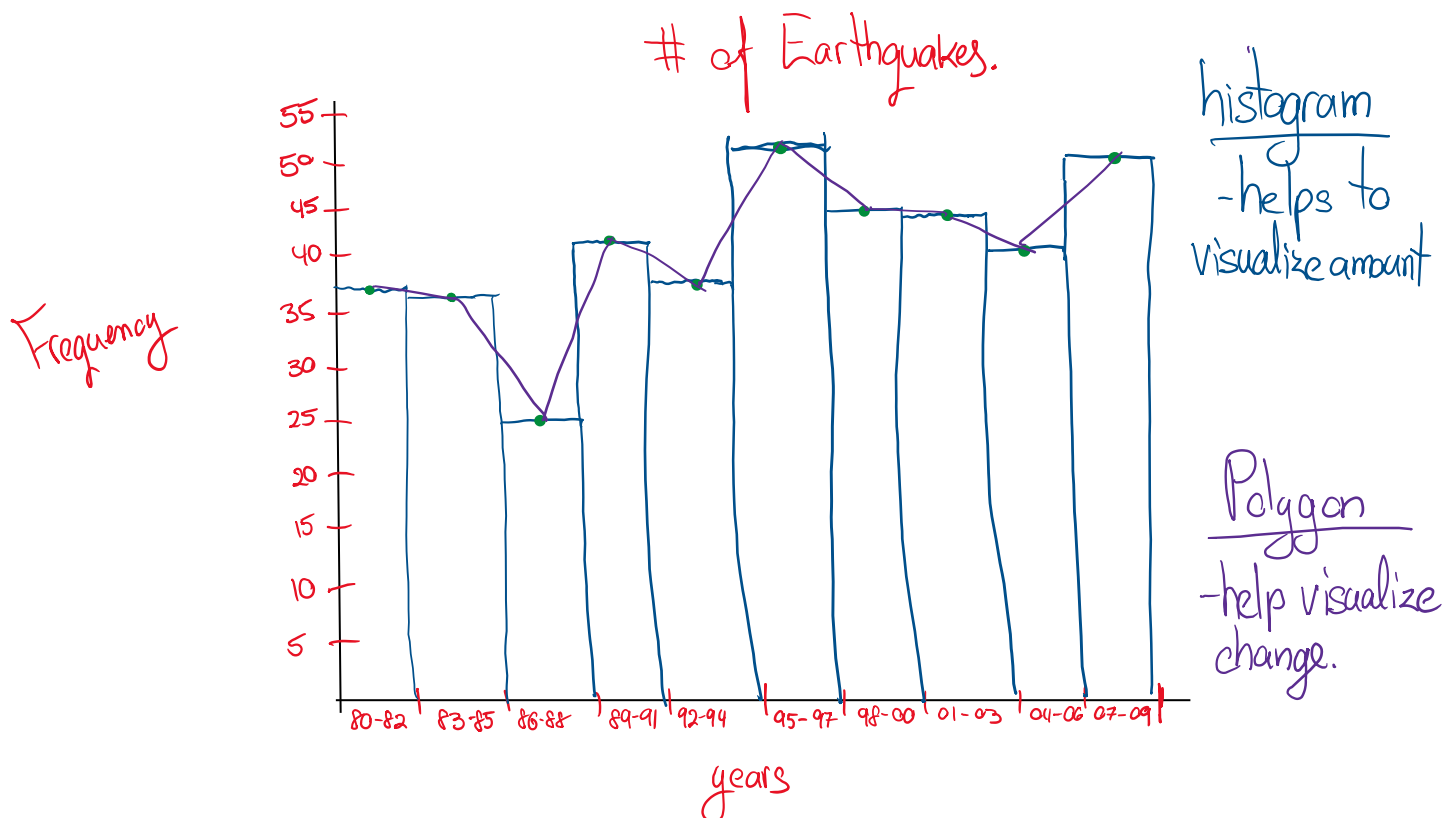
The table shows the number of earthquakes measuring 7 and greater on the Richter scale that occurred from 1980 to 2009.

- Determine a suitable interval size for the data
- Create a frequency table to organize the data
- Display the data using a histogram and a frequency polygon
- Compare the two graphs.

Describe how the data is distributed.

Year	#	Year	#	Year	#
1980	14	1990	18	2000	15
1981	13	1991	16	2001	16
1982	10	1992	13	2002	13
1983	14	1993	12	2003	15
1984	8	1994	13	2004	16
1985	14	1995	20	2005	11
1986	6	1996	15	2006	11
1987	11	1997	16	2007	18
1988	8	1998	12	2008	12
1989	7	1999	18	2009	17

Interval	Tally	Frequency
1980-1982	14 + 13 + 10	37
1983-1985	14 + 8 + 14	36
1986-1988	6 + 11 + 8	25
1989-1991	7 + 18 + 16	41
1992-1994	13 + 12 + 13	38
1995-1997	20 + 15 + 16	51
1998-2000	12 + 18 + 15	45
2001-2003	16 + 13 + 15	44
2004-2006	16 + 11 + 11	38
2007-2009	18 + 12 + 17	47



near pg 220.

Key Ideas:

- Large data sets can be difficult to interpret. _____ the data is key to interpreting it successfully.
- A frequency _____ is a set of intervals and can be displayed as a _____, _____ or a _____.

Need to Know:

- In general, a frequency distribution should have a minimum of _____ intervals and a maximum of _____ intervals.
- The interval width can be determined by _____ the range of the data by the desired number of _____ and _____ appropriately.
- The height of bars in a histogram represents the _____.
- Because individual pieces of data are not available in a histogram, you cannot determine _____.
- Frequency polygons display the same data as _____ however they are more useful when displaying _____ because they can be graphed _____ each other.