

CHARTS & GRAPHS

PRAXIS FLASHCARD #165

BAR GRAPH

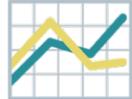
A **bar graph** is used to demonstrate relative values in a data set. The primary purpose of a bar graph is to compare values: The height (or length) of the bars shows how the values compare to other values in the data set.



PRAXIS FLASHCARD #180

LINE GRAPH

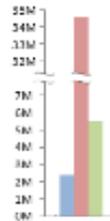
A **line graph** is a statistical graph showing the data points connected by line segments. A line graph is used to visualize trends in the data. The graphic below is a line graph showing two trend lines.



PRAXIS FLASHCARD #153

SCALE ON BAR OR LINE GRAPH

Bar graphs and line graphs will often have a symbol on the vertical axis to indicate that some numbers have been left out. Be aware of these “**broken scales**” when analyzing graphs. The break in the scale is used when one or more of the bars/lines are significantly out of range of the other bars/lines. These broken scales can visually give a wrong impression. In the bar graph to the right, the red bar looks about twice the size of the green bar; whereas, the red bar is actually six or seven times the size of the green bar!



PRAXIS FLASHCARD #168 & #149

CIRCLE GRAPH

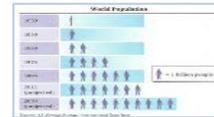
A **circle graph** (also known as a **pie chart**) is a circular graph where sections of the circle represent parts of the whole. A pie chart ALWAYS gives parts of a whole. The pie sections are usually labeled with percentages.



PRAXIS FLASHCARD #148

PICTOGRAPH

A **pictograph** is a graph or chart where pictures are used to indicate a specific number of objects.



PRAXIS FLASHCARD #169

TABLE (OF DATA)

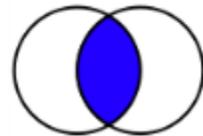
A **table** is used to display the information in an organized manner. A table usually has column headings -- each record is in a row of the data table.

Earthquakes Worldwide per Year	
Magnitude	EQ/year
8.5 – 8.9	0.3
8.0 – 8.4	1.1
7.5 – 7.9	3.1
7.0 – 7.4	15
6.5 – 6.9	56
6.0 – 6.4	210

PRAXIS FLASHCARD #182

VENN DIAGRAM

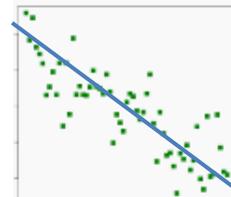
A **Venn diagram** is a diagram using circles to show logic statements. Most Venn diagrams display overlapping circles. Venn diagrams are named after John Venn who developed the concept of Venn diagrams about 1880. By shading portions of the overlapping circles, set theory concepts such as UNION and INTERSECTION can be shown.



PRAXIS FLASHCARD #160

SCATTER PLOT

A **scatter plot** is a graph showing a collection of two-coordinate points. The points are not connected with line segments, but the points may demonstrate a trend. A technique called the “line of best fit” determines a line through the points where about half of the points are above the line and about half the points are below the line. This line of best fit visually demonstrates a trend.



PRAXIS FLASHCARD #163

STEM & LEAF PLOT

The **stem & leaf plot** is a table used to show **all** data values, but in an organized manner. The table has two columns. The right column gives the ones place and the left column displays the tens place values:

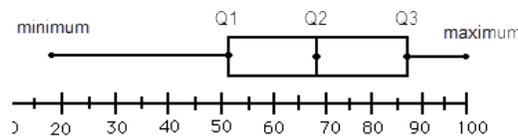
tens	ones
0	1 5 8 8
1	3 6 6 6 7
2	
3	1 2 5

The stem & leaf plot above displays the numbers 1, 5, 8, 8, 13, 16, 16, 16, 17, 31, 32, and 35.

PRAXIS FLASHCARD #246

BOX AND WHISKERS PLOT

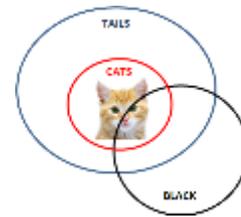
A **box and whiskers plot** is a visual way to show the five statistical number summaries: Minimum, Q1, Q2, Q3, and Maximum



PRAXIS FLASHCARD #293

LOGIC DIAGRAM

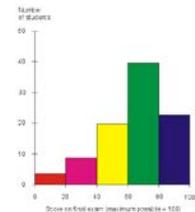
A **logic diagram** is a visual way to determine the truth or logic of statements. A truth table may also be used. With a logic diagram, use circles to show relationships. For example: (1) ALL cats have tails. (2) SOME cats are black. (3) Goldy is a cat. **ALL** means the circle is completely inside another circle. **SOME** means the circle is partially inside another circle. **NONE** means the circles are completely separate. From the logic diagram, we see that Goldy definitely has a tail but may or may not be black.



PRAXIS FLASHCARD #178

HISTOGRAM

A **histogram** is a bar graph where the bars are vertical; the bars represent *continuous groups* of numerical data; and the *bars touch*. The term comes from the late 1890's meaning an **historical diagram**. Example: children's ages at the movie. A *bar graph* would have a bar showing how many children of each age attended the movie, i.e. 6-year olds, 7-year olds, 8-year olds, etc. A *histogram* would have a bar showing how many of each age *GROUP* attended the movie, i.e., 6-9-year-olds, 10-13-year-olds, 14-17-year-olds.



PRAXIS FLASHCARD #284

FLOW CHARTS

A **flow chart** is a diagram used to visually describe an algorithm. A flow chart shows a step-by-step path for the algorithm. Small circles are used to show the start and end points. Diamonds are used for decisions -- to ask questions and branch the flow chart depending on the answer to the question. A rectangle is used to show a process or action step. Input and output are represented by parallelograms. Other symbols are used in more complex flow charts.

