

# [Representing Data]

(§9.2 worksheet 1)

**Categorical Data:** The most common way to display categorical data is with a bar chart or a histogram.

Collect the data from classmates on eye color

Color	Number
brown	
blue or grey	
green or hazel	

**Make a Bar Chart of the eye colors:** A bar chart of categorical data displays the categories across the horizontal axis and the height of the bar indicates the number of responses in each category.

**Make a Pie chart of the eye colors:** A pie chart shows the relative size of the categories by dividing the circle into sectors with the same proportions.

**Which graph more accurately shows the proportion of people in the class who have brown eyes? Explain.**

**Quantitative Data** The following are test scores for 24 people on a midterm math exam:

75	80	76	81	74	90
60	83	81	81	95	82
99	65	54	77	79	97
91	82	97	70	80	77

**Stem and leaf plot:** A stem and leaf plot is sort of a cross between a dot plot and a histogram. Each number represents a single data point, the actual value of the data point is given, and if you turn it on its side it looks like a histogram.

Each data point is broken into a “stem” and “leaf” according to the most convenient or illustrative place value break point. As an example we’ll do our test scores using the tens place for our stems and the units place for our leaves.

Frequency tables record the frequency of each response.

Test Scores for 25 people on a midterm math exam (bin width 10)		Test Scores for 25 people on a midterm math exam (bin width 5)			
Scores	Frequency	Scores	Frequency	Scores	Frequency
51-60		50-55		76-80	
61-70		56-60		81-85	
71-80		61-65		86-90	
81-90		66-70		91-95	
91-100		71-75		96-100	

Histograms – these are like bar charts but represent quantitative data. The bars do touch to indicate one category picks up where the previous left off. Draw the graphs listed below. Note: **Bar lengths should be proportional to the values they represent (i.e. your vertical axis should start at 0).**

Frequency Histogram (bin width 10)

Frequency Histogram (bin width 5)