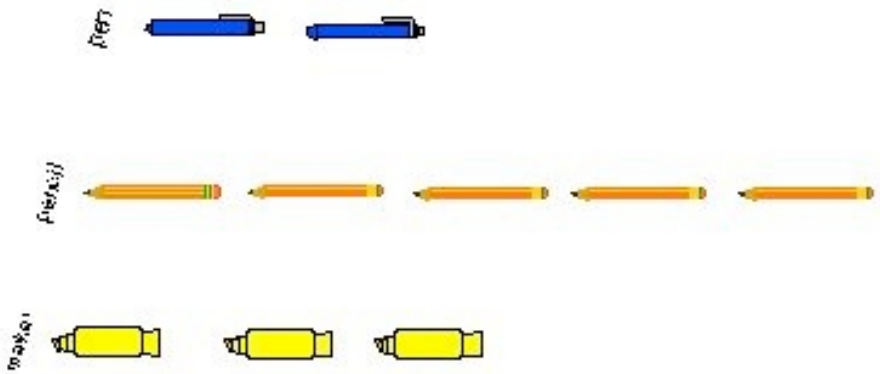
Early Years Data Display Methods

Part A: Graphs

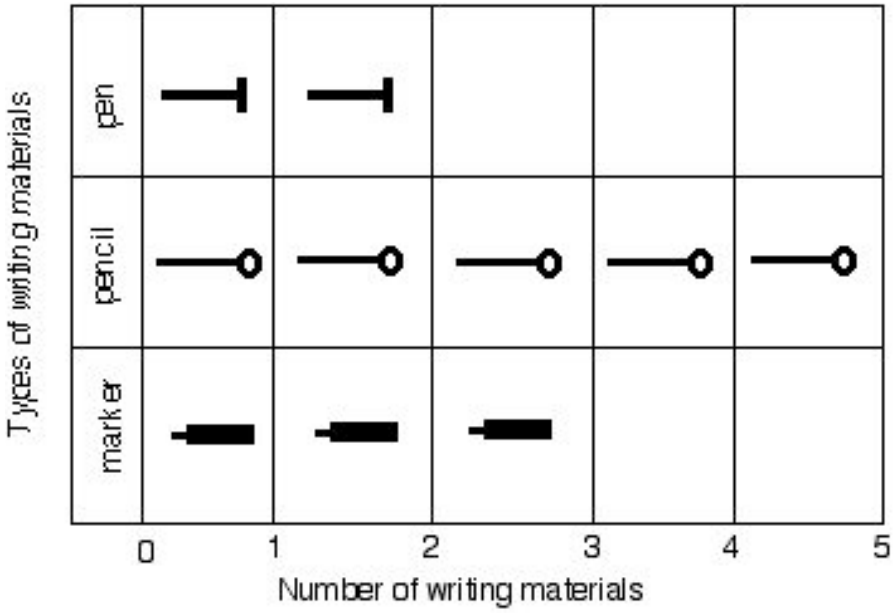
Concrete Graph

A concrete object graph involves categories and counts of the number of people or things in a category (frequency). Actual people or things are located on the floor or elsewhere to display the categories and counts. The layout of the graph can be in any direction. The layout here is horizontal.



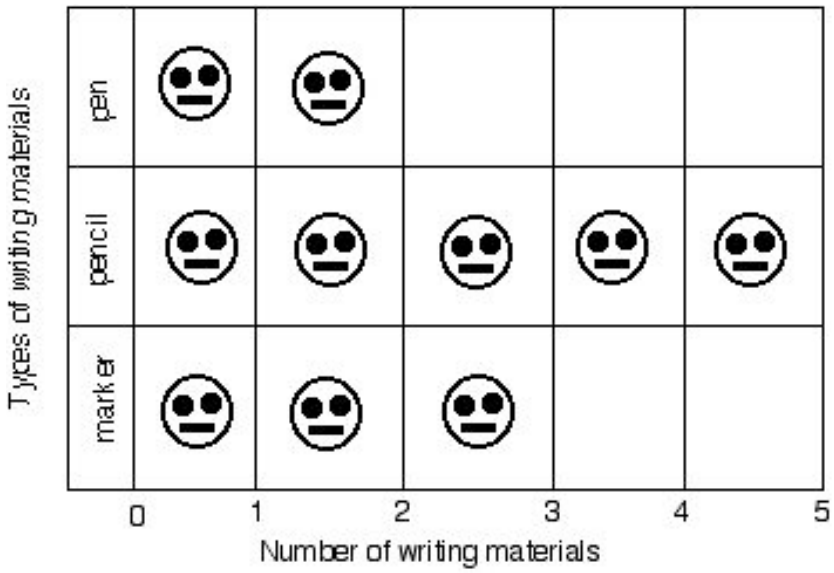
Pictograph

A pictograph or pictorial graph involves categories and counts of the number of people or things in a category (frequency). Pictures/drawings are used to display the categories and counts. The layout of the graph can be horizontal or vertical. The layout here is horizontal.



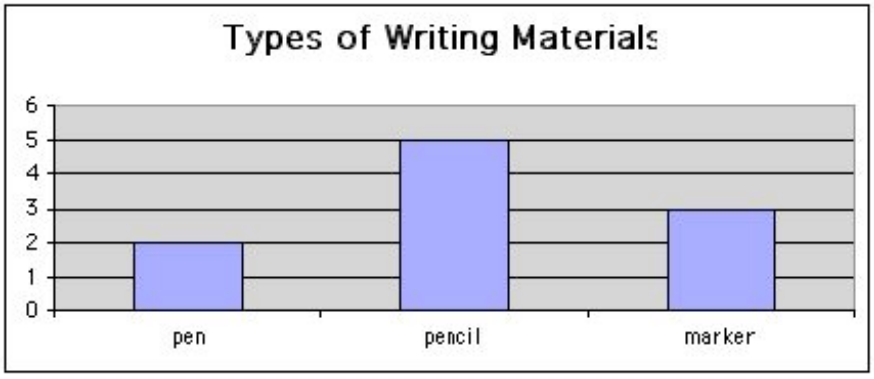
Symbolic Graph

A symbolic graph involves categories and counts of the number of people or things in a category (frequency). Some type of symbol (e.g. an X, a happy face, etc.) is used to display the count in each category. The layout of the graph can be horizontal or vertical. The layout here is horizontal.



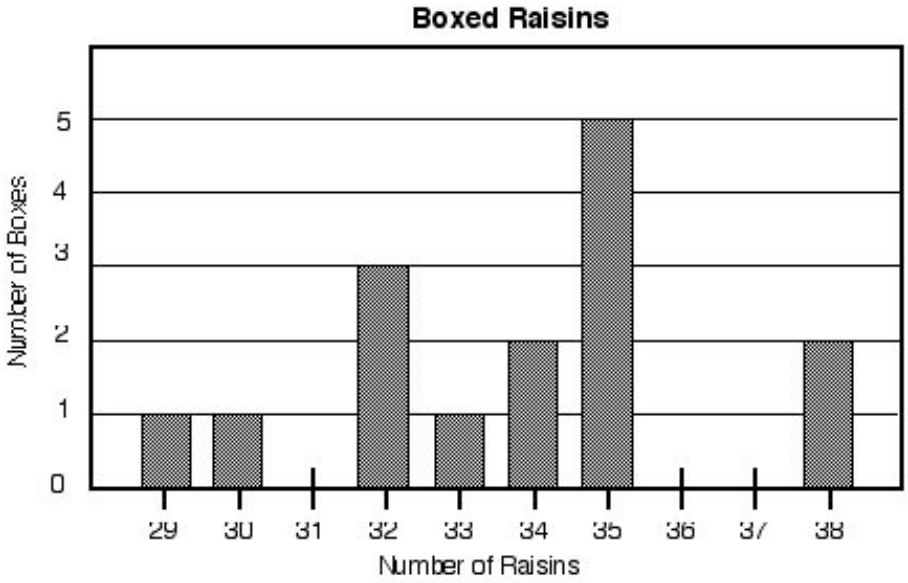
Bar Graph

A bar graph involves categories and counts of the number of people or things in a category (frequency). A bar is used to display the count in each category. The bars are separated from each other to indicate that the categories are discrete (non-continuous). The layout of the graph can be horizontal or vertical. The layout here is vertical.

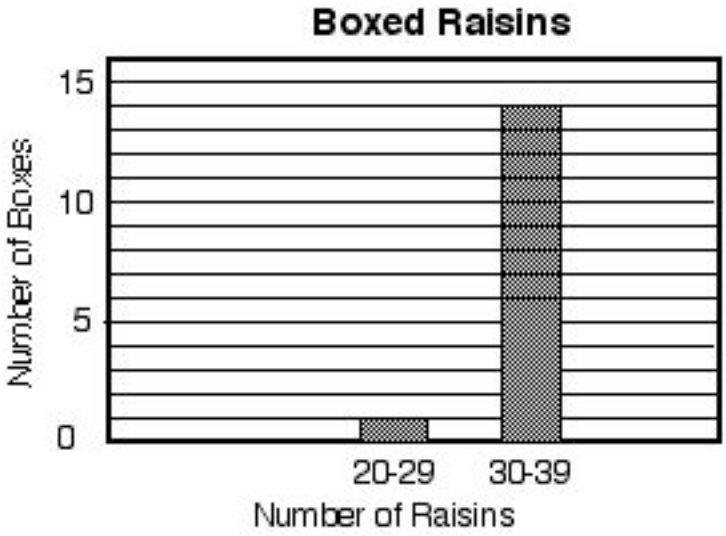


Attributes of numbers can be used as categories (e.g. even, multiple of 5, prime, divisible by 3, specific numbers). The bars should be separated because attributes are discrete (non-continuous). Joining the bars makes a type of graph known as a histogram (a middle years outcome). A histogram involves numerical data that is continuous (e.g. measurement of height) and therefore is not appropriate for displaying numerical categories that involve attributes of numbers.

An example of a bar graph involving numerical categories is shown on the right. It concerns the number of boxes (the frequency) that have particular counts of raisins (the categories) in them. Counts of raisins are non-continuous because counts are whole numbers. You cannot have a count of 2 3/4 raisins (for example). You either count 2 raisins or 3 raisins.



Numerical intervals can be categories as well. If the numerical data are non-continuous (as in the raisin data above), then the bars should be separated. Otherwise you are making a histogram and that involves continuous numerical data (e.g. measurement of weight). An example of a bar graph involving intervals follows. It concerns the number of boxes (frequency) that have particular counts of raisins (categories) in them.



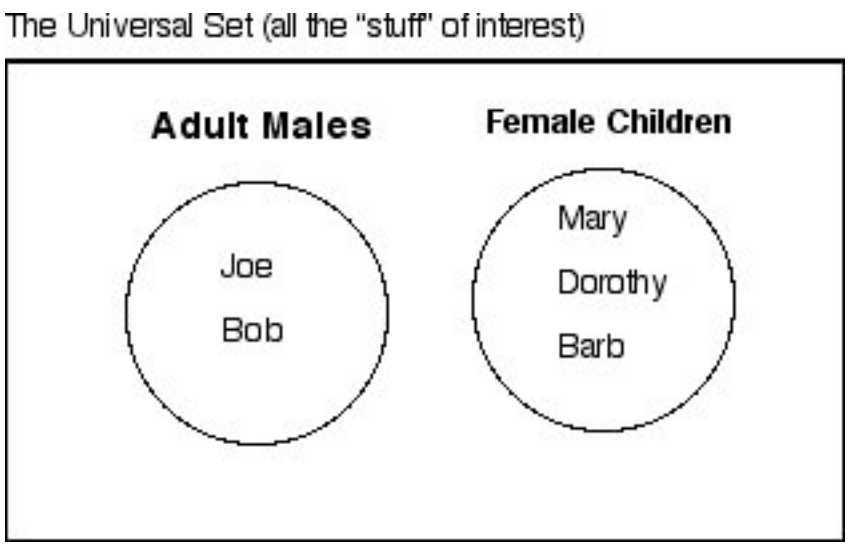
Part B: Diagrams

Venn Diagram

A Venn diagram displays categorical data as sets. A set is a collection of things that have the same attribute (e.g. colour, shape, size). The surrounding rectangle of a Venn diagram represents the Universal set (all the stuff being considered). Each circle represents a set of the universal set. Many types of situations are possible. Circles must overlap (intersect) when they have something in common. Circles normally do not overlap when two sets have nothing in common.

Example 1:

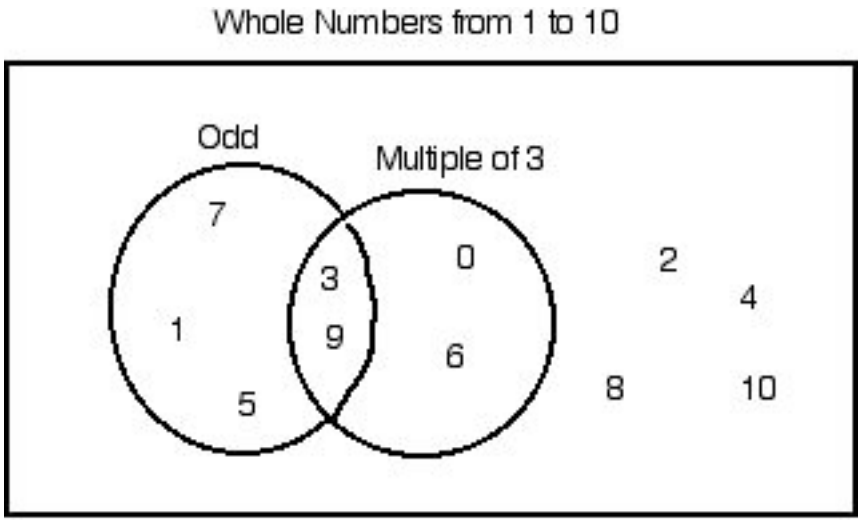
Sets do not intersect



Example 2:

Two sets intersect

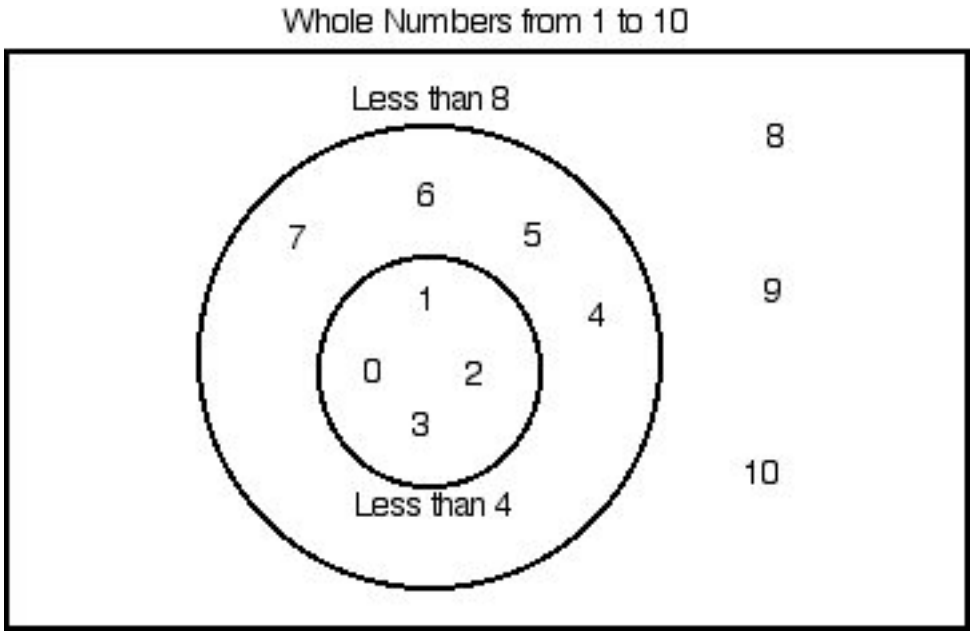
Notice in this example that stuff can be displayed outside of the circles.



Example 3:

Nested sets

One set is contained entirely in another set.

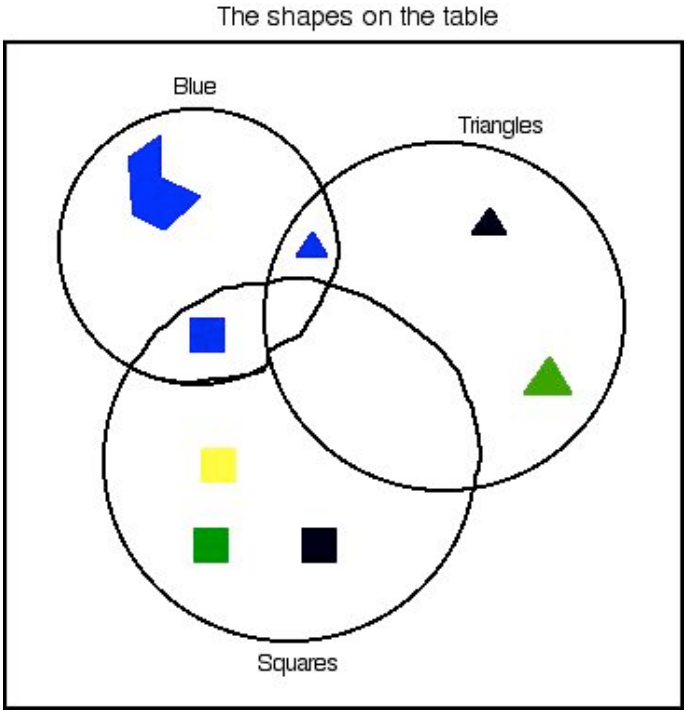


Example 4:

Three sets intersect

Notice that some intersections are empty while others are not.

In complex situations (e.g. when at least three sets are involved) some pairs of sets may share an attribute while other pairs may not.



Carroll Diagram

A Carroll diagram displays yes/no categorical data (e.g. even/not even, red/not red) in table form (rows and columns).

Example 1:

Two attributes

Multiple of 5 & odd for whole numbers 0-10

	Odd	Not odd
Multiple of 5	5	0, 10
Not multiple of 5	1, 3, 7, 9	2, 4, 6, 8

Example 2:

Three attributes

Multiple of 5, odd, & less than 5 for whole numbers 0-10

	Less than 5		Not less than 5	
	Odd	Not odd	Odd	Not odd
Multiple of 5		0	5	10
Not multiple of 5	1, 3	2, 4	7, 9	6, 8

Tree Diagram

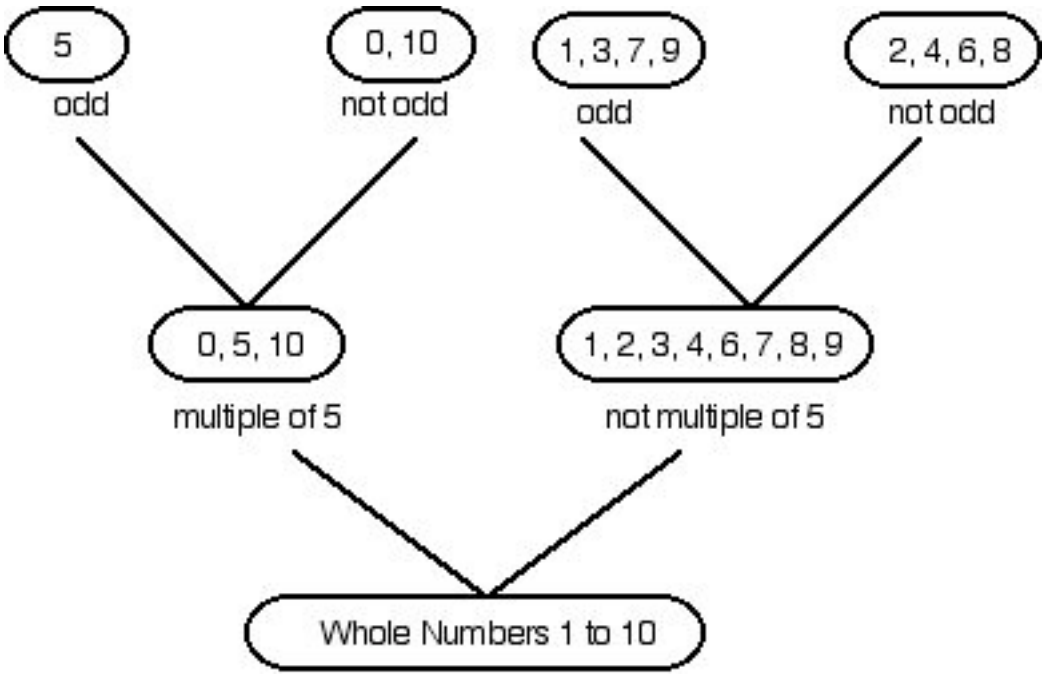
A Tree diagram displays yes/no categorical data (e.g. even/not even, red/not red) in a branching form (like tree branches).

Example 1:

Two attributes

Multiple of 5 & odd for whole numbers 0-10.

This example has two decision-making levels.



Example 2:

Three attributes

Multiple of 5, odd, & less than 5 for whole numbers 0-10.

This example has three decision-making levels.