

Year 8 Unit 1

Probability and Statistics

AVERAGES AND SPREAD

mean	add up all the amounts, and then divide the total by the number of amounts
mode	the value which occurs the most
median	the middle value . Method: put the data in numerical order, cross off from the beginning and end until you find the middle value if there are two middle values , find half-way between them
range	largest value – smallest value the spread of the data

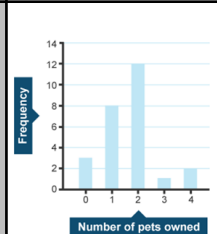
DISPLAYING CATEGORICAL DATA

data	a collection of information a set of numbers giving information about a context
frequency	the number of times an event or a value occurs

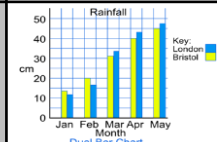
frequency table	usually a tally , showing the totals of data collect data using this before displaying it in a chart
-----------------	---

Country	Frequency
France	3
Wales	4
England	11

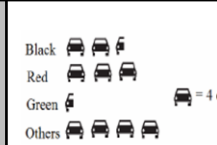
bar chart	the height of the bars represents the frequency (y-axis) , x-axis is the thing we are measuring , there are gaps between bars , all bars are equal width and axes are labelled
-----------	--



comparative / dual bar chart	a bar chart showing data side by side good for comparing data
------------------------------	--



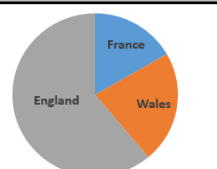
pictogram	each picture represents a set frequency it has a key to tell you what each picture is worth
-----------	--



PIE CHARTS

how to draw	the size of the sector of the circle represents the frequency Steps: divide 360 by the total frequency , this is the value of one unit multiply this by each individual frequency to get the angle size for that section draw the pie chart using your protractor , always measure from the line you just drew, starting from zero on your scale
-------------	--

example	England is the largest sector so has the highest frequency
---------	--



PROBABILITY

probability	the likelihood or chance of something happening it is given on a scale between 0 (impossible) and 1 (certain) , and can be a fraction, decimal , or sometimes a percentage
theoretical probability	the probability of something in theory
relative frequency	the probability of something worked out from real life data , also called empirical probability
experiment (in probability)	when a number of trials are conducted to determine the probability of an event
event	one possible outcome in a probability experiment, <i>e.g. getting a 6 on a die</i>
expectation	what you predict will happen in a probability experiment, you multiply the probability by the number of trials

LIKELIHOOD VOCABULARY

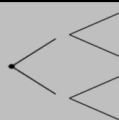
impossible	when there is no chance – it will not happen an outcome with a probability of 0
unlikely	when it will probably not happen an outcome with a probability between 0 and 0.5
even	when there is an equal chance of something happening or not happening an outcome with a probability of 0.5
likely	when it will probably happen an outcome with a probability between 0.5 and 1
certain	when it is inevitable – it will definitely happen an outcome with a probability of 1
fair	when all outcomes are equally likely
bias	when something is not fair

PROBABILITY NOTATION

$P(A) =$	the probability of an event A =
$P(A') =$	the probability that event A will not occur = the complement of A

REPRESENTING PROBABILITIES

sample space	the set of all possible outcomes of an experiment
probability tree	a diagram shaped like a tree used to display a sample space by using one branch for each possible outcome



SYSTEMATIC LISTING

product rule for counting	if there are x ways of doing something and y ways of doing something else, then there are xy ways of performing both (the product of the two numbers)
---------------------------	---