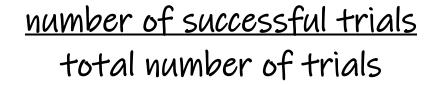# Relative Frequency

Relative Frequency calculates a probability based on a previously conducted experiment:
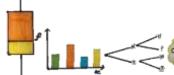
number of successful trials
total number of trials

We can then use this probability to test if our experiment is fair and to predict future results if it were to be repeated many times

Expected Probabilities

To calculate expected probabilities based on relative frequency we multiple the relative frequency by the number of times the trial is to be repeated:
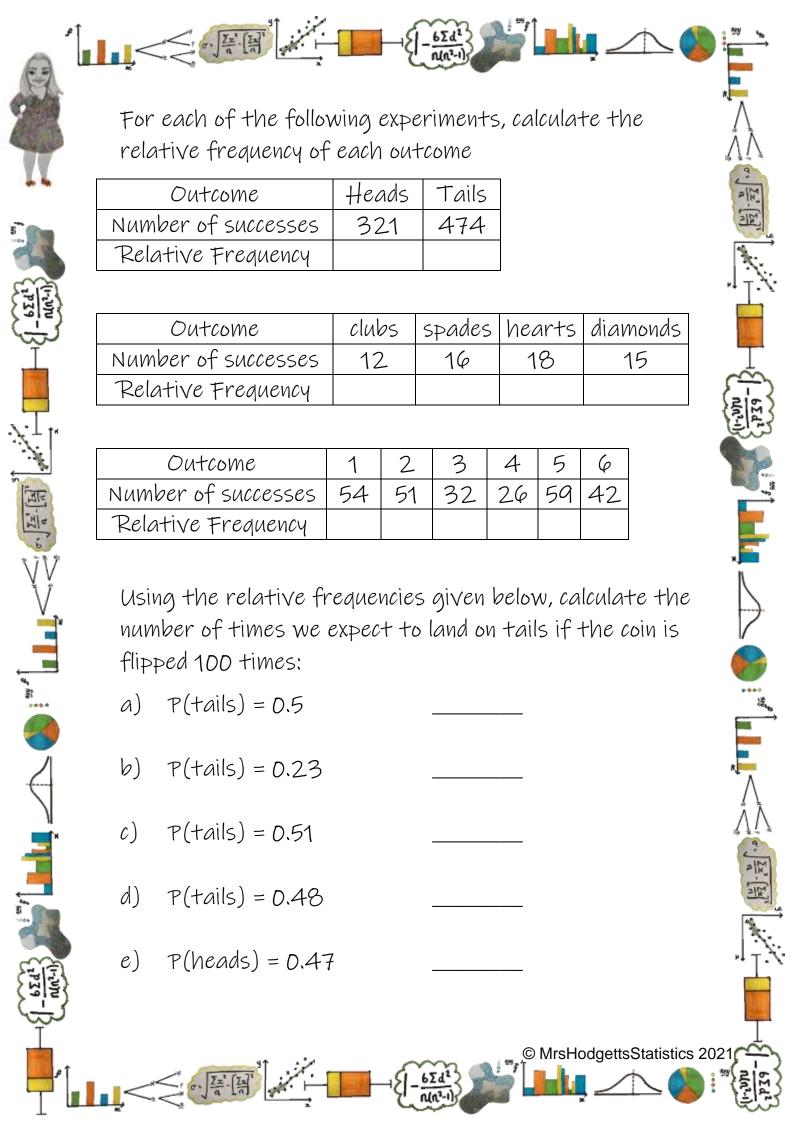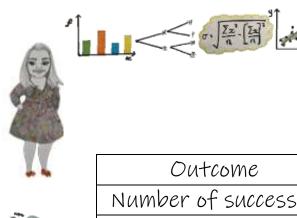
Relative Frequency X N

For each of the following experiments, calculate the relative frequency of each outcome

Outcome	Heads	Tails
Number of successes	321	474
Relative Frequency		

Outcome	clubs	spades	hearts	diamonds
Number of successes	12	16	18	15
Relative Frequency				

Outcome	1	2	3	4	5	6
Number of successes	54	51	32	26	59	42
Relative Frequency						

Using the relative frequencies given below, calculate the number of times we expect to land on tails if the coin is flipped 100 times:

a) P(tails) = 0.5   _____

b) P(tails) = 0.23   _____

c) P(tails) = 0.51   _____

d) P(tails) = 0.48   _____

e) P(heads) = 0.47   _____

Solutions

Outcome	Heads	Tails
Number of successes	321	474
Relative Frequency	321/795	474/975

Outcome	clubs	spades	hearts	diamonds
Number of successes	12	16	18	15
Relative Frequency	12/61	16/61	18/61	15/61

Outcome	1	2	3	4	5	6
Number of successes	54	51	32	26	59	42
Relative Frequency	54/264	51/264	32/264	26/264	59/264	42/264

Using the relative frequencies given below, calculate the number of times we expect to land on tails if the coin is flipped 100 times:

f) P(tails) = 0.5   0.5 x 100 = 50

g) P(tails) = 0.23   0.23 x 100 = 23

h) P(tails) = 0.51   0.51 x 100 = 51

i) P(tails) = 0.48   0.48 x 100 = 48

j) P(heads) = 0.47   0.47 x 100 = 47