

THEORETICAL AND EXPERIMENTAL PROBABILITY

1) A normal dice is to be thrown 30 times by each pair of pupils in the class. Then the results are to be collected to obtain a grand total of 300 throws. Before you start throwing, fill in the table below:

Theoretical Results

Number,	Probability	In 30 throws		In 300 throws	
		Expected Frequency	Range I'll Accept	Expected Frequency	Range I'll Accept
1					
2					
3					
4					
5					
6					

Now throw the dice 30 times and record your results on a tally chart. Then fill in the table below (the results for 300 throws will be collected on the blackboard). Use a tick or cross to show whether or not the results were within your expected range.

Experimental Results

Number	Probability	In 30 throws		In 300 throws	
		Actual Frequency	Within Range?	Actual Frequency	Within Range?
1					
2					
3					
4					
5					
6					

Now write a sentence or two about any conclusions you draw from the experiment.

2) This experiment is similar to the one above, except that drawing pins are being used. This time, it is not really possible to estimate the probabilities of "Pin Up" and "Pin Down" without doing the experiment. Do the experiment and fill in the table below:

Position	In 50 throws		In 500 throws		Probability
	Actual Frequency	Relative Frequency	Actual Frequency	Relative Frequency	
Pin Up					
Pin Down					

Which do you think is a better estimate of the probability of Pin up, and Pin Down - the relative frequencies from 50 throws, or from 500 throws?