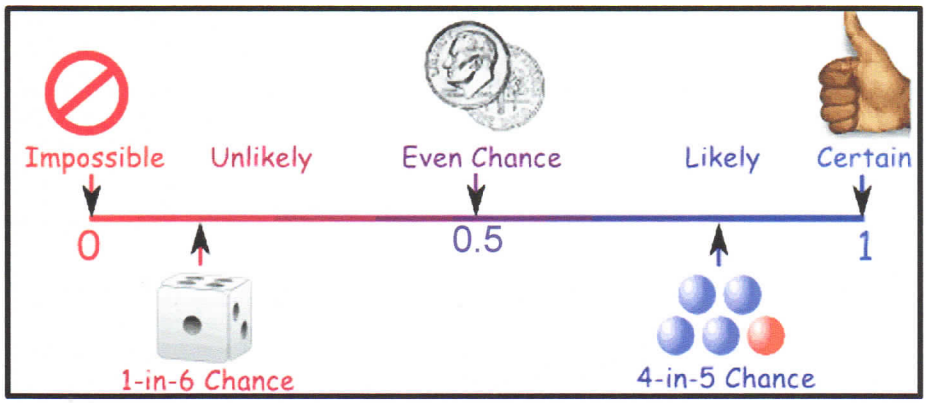
Probability

The probability of an event is a numerical value from 0 to 1 that measures the likelihood of the event. You can write the probability of an event as a fraction, decimal, or percent.



Experimental Probability

Experimental probability of an event measures the likelihood that the event occurs based on the actual results of an experiment.

$$P(\text{event}) = \frac{\text{number of times the event occurs}}{\text{number of times the experiment is done}}$$

A quality control inspector samples 500 LCD monitors and finds defects in three of them.

A) What is the experimental probability that a monitor selected at random will have a defect?

$$P(\text{defect}) = \frac{\text{number of monitors with a defect}}{\text{number of monitors inspected}}$$

$$= \frac{3}{500}$$

$$= 0.006 \text{ or } 0.6\%$$

B) If the company manufactures 15,240 monitors in a month, how many are likely to have a defect based on the quality inspector's results?

$$\text{number of defective monitors} = P(\text{defect}) \cdot \text{total \# of monitors}$$

$$= 0.006 \cdot 15{,}240$$

$$= 91.44 \text{ or } 91 \text{ monitors}$$