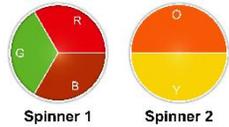


# Activity 10 Assessment

## Exploring Theoretical and Experimental Probability

### Exploring Theoretical and Experimental Probability

Identifies the experimental probability of an outcome for two independent events



The results for 8 trials:

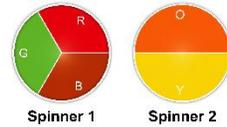
Spinner 1	Spinner 2
R	O
G	O
G	O
B	Y
G	Y
R	O
G	O
B	Y

The outcome, green, orange, occurred 3 times. So, the experimental probability of green, orange is:

$$\frac{3}{8} = 0.375$$

$$= 37.5\%$$

Identifies the theoretical probability of an outcome for two independent events



Sample space:

		Spinner 2	
		O	Y
Spinner 1	R	R, O	R, Y
	B	B, O	B, Y
	G	G, O	G, Y

For green, orange, there is 1 favourable outcome and 6 possible outcomes.

So, the theoretical probability of green, orange is:

$$\frac{1}{6} = 0.1666\dots$$

$$\approx 17\%$$

Compares the theoretical and experimental probabilities for a probability experiment



The results for 10 trials.

Nickel	Dime
T	H
T	H
H	H
H	T
H	T
H	H
T	H
T	H
H	H
H	H

Sample space:

		Nickel	
		H	T
Dime	H	H, H	H, T
	T	T, H	T, T

Experimental probability of 2 heads

$$\text{is: } \frac{4}{10} = 0.4 = 40\%$$

Theoretical probability of 2 heads is:

$$\frac{1}{4} = 0.25 = 25\%$$

The experimental probability is greater than the theoretical probability.

Understands how experimental and theoretical probabilities may be related if many trials are conducted

For 100s of trials of an experiment, the experimental probability of an outcome may approach its theoretical probability.

### Observations/Documentation