

Activity 6 Assessment Part B

Determining the Probability of Events (Dependent Events)

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Uses examples to explain the difference between dependent events and independent events

Dependent events: the outcome of one event affects the outcome of the other event, for example, removing a marble from a bag, and not replacing it before a second marble is taken.

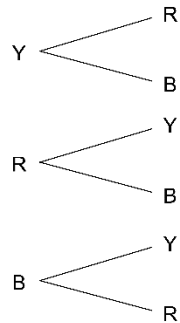
Independent events: the outcome of one event does not affect the outcome of the other event, for example, removing a marble from a bag, then replacing it before a second marble is taken.

Identifies the sample space for two dependent events



- (Y) Marbles: 1
- (R) Marbles: 1
- (B) Marbles: 1

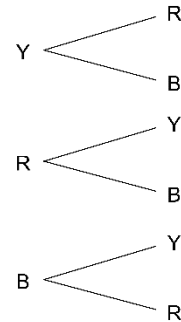
First Marble Second Marble



The sample space is:
Y, R; Y, B; R, Y; R, B; B, Y; B, R

Determines the probability of two dependent events using the sample space

First Marble Second Marble



From the sample space, the probability of removing blue and yellow marbles is:

$$\frac{2}{6} = \frac{1}{3}, \text{ or } 0.\bar{3}, \text{ or } 33.\bar{3}\%$$

Determines the probability of two dependent events using operations

Probability of removing blue then yellow is:

$$\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$$

Probability of removing yellow then blue is:

$$\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$$

So, the probability of removing blue and yellow marbles is:

$$\frac{1}{6} + \frac{1}{6} = \frac{1}{3}$$

Observations/Documentation