

Generate sample spaces for single events

1 Write the sample spaces for the events.

a) rolling a standard six-sided dice



$$S = \{1, 2, 3, 4, 5, 6\}$$

b) tossing a fair coin



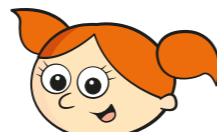
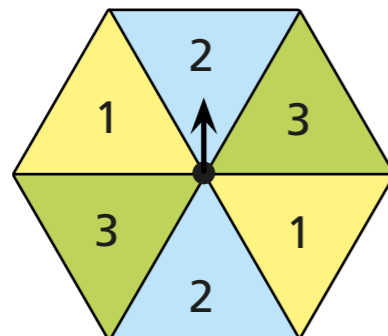
$$S = \{\text{Heads, Tails}\}$$

2 Dexter and Alex have written the sample space for this spinner.



Dexter

$$\{1, 1, 2, 2, 3, 3\}$$



Alex

$$S = \{1, 2, 3\}$$

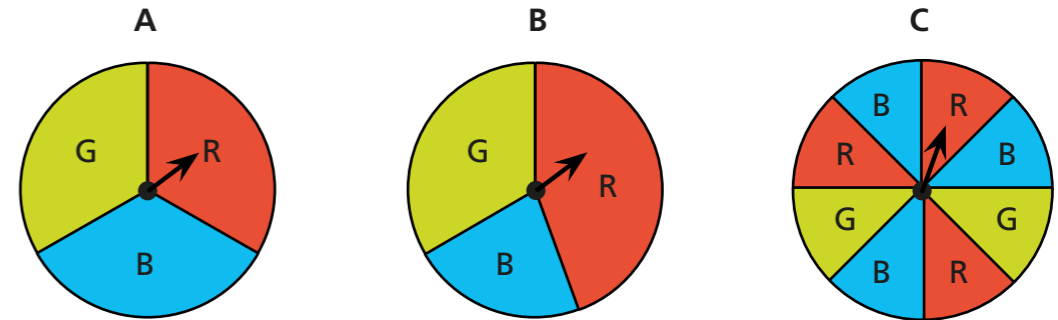
Who is correct? Alex

Explain your answer.

You only need to write each number once in a sample space.

Discuss your answer with a partner.

3 Dani spins these spinners.



a) What is the same and what is different about the spinners?

Same: they show the same colours.
Different: the amount of the spinner that is covered by each colour.

b) Write the sample spaces of the outcomes for each spinner.

$$A S = \{\text{red, blue, green}\}$$

$$B S = \{\text{red, blue, green}\}$$

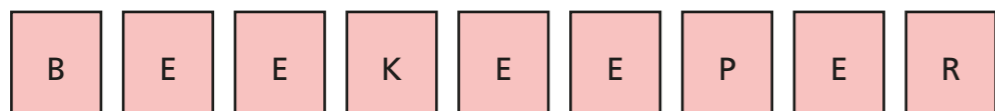
$$C S = \{\text{red, blue, green}\}$$

c) What is the same about the sample spaces for each spinner?

They contain the same colours



- 4 These letters are put into a hat.

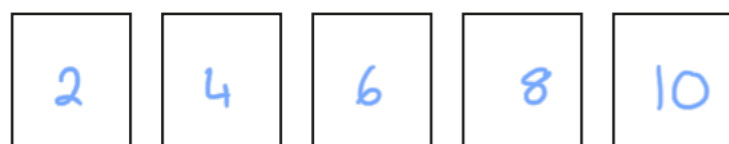


A letter is chosen at random.

Write the sample space for the outcomes.

$$S = \{B, E, K, P, R\}$$

- 5 a) Here are some number cards.



A card is chosen at random.

The sample space for the outcomes is $S = \{2, 4, 6, 8, 10\}$.

What is the value of each card? Write the numbers on the cards.

- b) Here are some more number cards. e.g.



A card is chosen at random.

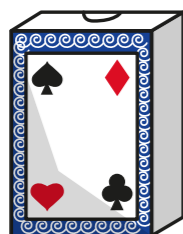
The sample space for the outcomes is $S = \{2, 4, 6, 8, 10\}$.

What could the cards be? Write the numbers on the cards.

- 6 A card is removed from the pack, and a piece of fruit is removed from the bowl.

Describe the sample spaces to a partner.

a)



b)



- 7 Draw two different spinners that have the sample space $S = \{1, 2, 3, 4, 5\}$.

e.g.



Compare your sample space with a partner's.

- 8 The sample space for an event is {green, red}.

a) What could this event be?

e.g. Taking a counter from a bag that contains red and green counters.

b) Explain why the probability of the outcomes might not be equally likely.

There could be 9 green and 1 red.

- 9 Some cards are labelled with numbers.

A card is chosen at random.

The sample space of an event is $S = \{3, 5, 7, 9\}$.

Work out the probabilities.

a) The probability of getting an odd number is certain

b) The probability of getting an even number is impossible

c) Explain to a partner why you cannot work out the probability of getting a number greater than 6