

Max's Probability Puzzles

Learning objective: To calculate and represent the probability of an event happening using fractions, decimals, and percentages.

Help Max the monkey solve these probability challenges. Remember to write your answers as fractions, decimals, or percentages where required. If you are stuck, think about the total number of possible outcomes.

Word bank: certain · impossible · likely · unlikely · even chance · outcome · probability

1. Max has a bag containing 5 red marbles, 3 blue marbles, and 2 green marbles. If he picks one at random, what is the probability that he picks a red marble? Give your answer as a fraction in its simplest form. (2 marks)

2. In a game, Kit the fox rolls a fair 6-sided dice. What is the probability of rolling a number greater than 4? Write your answer as a decimal. (2 marks)

3. Zara the zebra has a spinner with 10 equal sections. 7 sections are yellow and 3 are purple. What is the probability of the spinner landing on purple? Write your answer as a percentage. (2 marks)

4. Leo the lion has a jar of sweets: 4 lemon drops, 4 lime drops, and 4 strawberry drops. If he picks a sweet without looking, is it certain, impossible, or an even chance that he will pick a lemon drop? Explain your reasoning. (2 marks)

5. Finn the dolphin is flipping a coin. If he flips the coin 20 times, how many times would you expect it to land on 'tails'? Explain how you worked this out. (2 marks)

Draw: Draw a spinner that has an 'even chance' of landing on blue or red, and an 'impossible' chance of landing on green.



Extension challenge: If you added 5 more blue marbles to Max's bag (originally 5 red, 3 blue, 2 green), how would the probability of picking a blue marble change? Show your working out.