

A Game of Chance

The purpose for reading is to understand how probability applies to real world situations by analyzing possible outcomes.

Pay Attention To:

- how many outcomes are possible in each example
- how many outcomes are favorable
- how probability is described using numbers
- how real world situations show different outcomes

probability

probability-number-line

unlikely likely

probability-equation

$$P(\text{event}) = \frac{\text{number of favorable outcomes}}{\text{total number of possible outcomes}}$$

PROBABILITY OF ROLLING A 3

$$P(\text{event}) = \frac{\text{number of favorable outcomes}}{\text{total number of possible outcomes}}$$

favorable outcomes: 1
total possible outcomes: 6

$$P(\text{rolling a 3}) = \frac{1}{6}$$

probability of rolling a 3 is $\frac{1}{6}$

PROBABILITY OF DRAWING A RED CARD

$$P(\text{event}) = \frac{\text{number of red cards}}{\text{total number of cards}}$$

favorable outcomes: 26
total possible outcomes: 52

$$P(\text{red cards}) = \frac{26}{52} = \frac{1}{2}$$

probability of drawing a red card is $\frac{1}{2}$

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Maya and her friends are playing a game with a six-sided die and a deck of cards. As they take turns, they think about what might happen next. Maya thinks about the **probability** of rolling a 3 on the die. She knows there is one good **outcome** out of six total **outcomes**, so the chance is 1 out of 6. Later, her friend draws a card and asks about getting a red card. This time, there are 26 good **outcomes** out of 52 total **outcomes**. The group notices that **probability** depends on comparing how many good **outcomes** there are to all the **outcomes**.

The next day, Maya watches a basketball game and thinks about **probability** again. She thinks about the chance that her favorite player will make a free throw. She sees that the player makes 7 out of 10 shots during practice. Each shot has possible **outcomes**, like making or missing the basket. As she watches more shots, she thinks about how often the player is successful and what might happen next. Maya uses her understanding of **probability** to think about possible **outcomes**.

her understanding of **probability** to make sense of what might happen next.

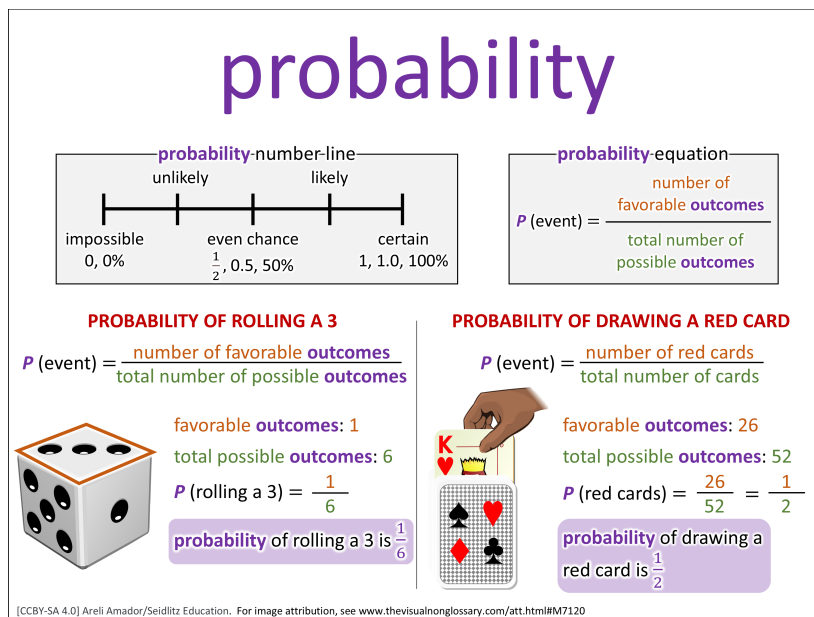


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The purpose for reading is to understand how probability applies to real world situations by analyzing possible outcomes.

Pay Attention To:

- how many outcomes are possible in each example
- how many outcomes are favorable
- how probability is described using numbers
- how real world situations show different outcomes



Maya and her friends are playing a game with a six-sided die and a deck of cards. As they take turns, they begin to analyze what might happen next. Maya considers the **probability** of rolling a 3 on the die. She recognizes that there is one favorable **outcome** out of six possible **outcomes**, so the probability is 1 out of 6. Later, her friend draws a card and asks about the likelihood of getting a red card. This time, there are 26 favorable **outcomes** out of 52 total **outcomes**. The group observes that **probability** depends on comparing how many favorable **outcomes** there are to how many total **outcomes** are possible.

The next day, Maya watches a basketball game and continues thinking about **probability**. She considers the chance that her favorite player will make a free throw. She observes that the player makes 7 out of 10 shots during practice. Each shot has possible **outcomes**, such as making or missing the basket. As she watches more shots, she begins to evaluate how often the player is successful and how that might relate to future **outcomes**. Even though each shot can vary, Maya applies her

understanding of **probability** to interpret what might happen next.

