

Unit 1: Probability

Dear Parents/Guardians,

Unit 1 introduces students to probability. Students conduct probability experiments and express the likelihood of events occurring in words, and quantitatively as fractions, decimals, and percents. Students represent the sample space of the theoretical probability of games as lists, outcome grids, and tree diagrams. Based on these sample spaces, students use probability to determine the fairness of games.

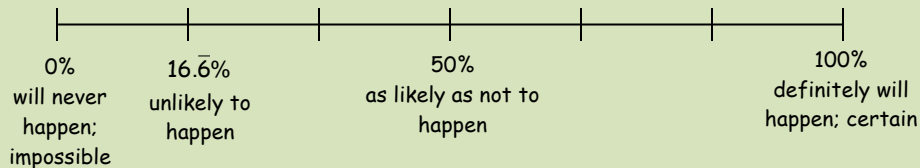
Representing Probability

The probability of an event is a measure of the likelihood of that event occurring. The probability of an event occurring can be represented as a fraction, a decimal, or a percent.

- If an event is impossible, then $P(E)=0$. Its chance of occurring is 0%.
- If an event is certain, then $P(E)=1$. Its chance of occurring is 100%.
- If an event is just as likely to happen as not, then $P(E)=0.5$. Its chance of occurring is 50%.

Students discuss different events and determine the likelihood of their occurrence. They can then estimate the likelihood on a number line.

Example: What is the probability of rolling a 6 on a fair number cube?

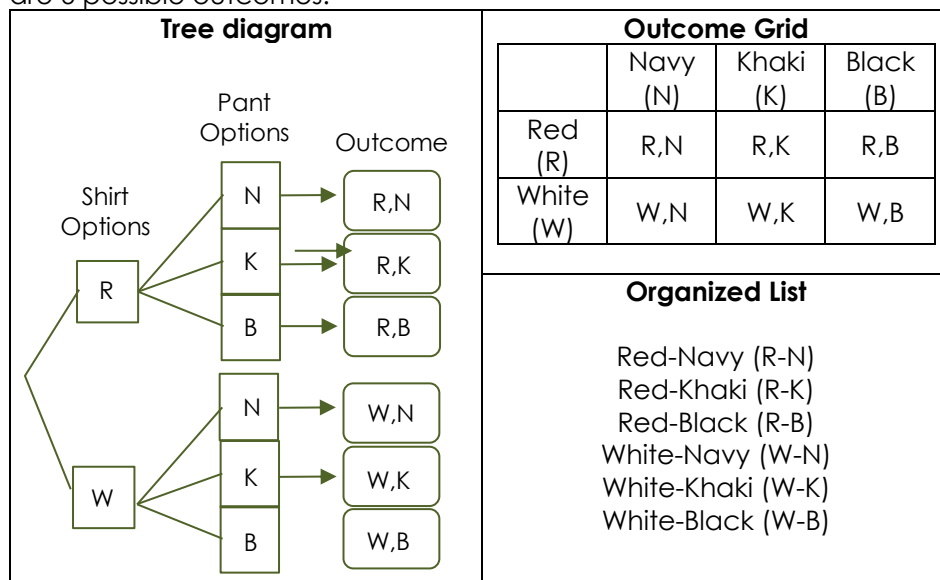


$P(\text{rolling a 6}) = \frac{1}{6} = 0.\bar{16} = 16.\bar{6}\%$ This is unlikely to happen, but not impossible.

Probability Data Displays

Students use lists, outcome grids, and tree diagrams to represent the different possible outcomes of a probability experiment.

Example: Show all of the possible outcomes for choosing a red or white shirt with navy, khaki, or black pants. Notice that in each display there are 6 possible outcomes.



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By the end of the unit, your student should know...

- That the probability of an event is a number from 0 to 1 [Lesson 1.1]
- How to represent probabilities as fractions, decimals and percents [Lessons 1.1 and 1.2]
- How to represent the data from a probability experiment as a list, outcome grid, and tree diagram [Lesson 1.2]
- How to collect and analyze data from a probability game and determine its fairness [Lesson 1.3]
- How to create a probability spinner and analyze its fairness [Lesson 1.3]

Additional Resources

- For definitions and additional notes please refer to Student Resources at the end of this unit.