

Grade 7 Standards Parent Resource

Unit 4: Statistics and Probability

Unit 4 includes 2 topics of study, listed below. This resource is for Topic 1.

Topic 1

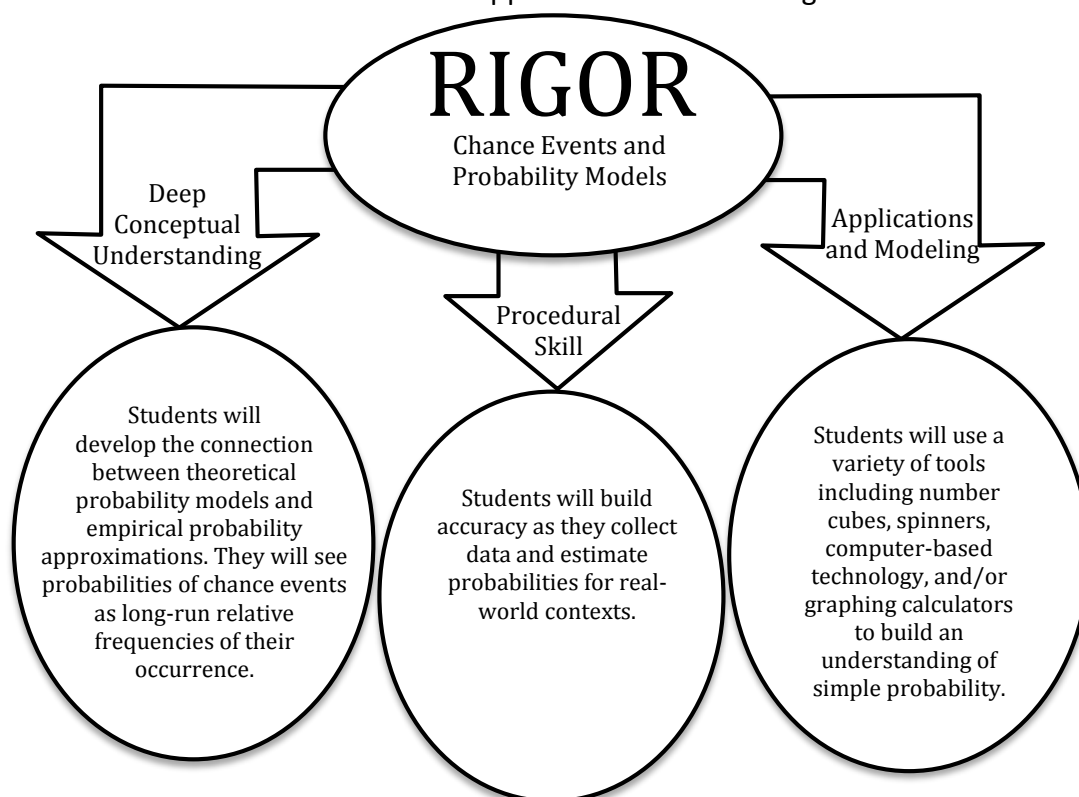
Topic 2

Chance Events and Probability Models

Random Sampling

Topic	Learning Goals by <u>Common Core State Standard</u> <i>Students will be able to...</i>
Chance Events and Probability Models	<ul style="list-style-type: none">• Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.• Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.• Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.• Compare empirical and theoretical probability.• Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. <p><i>Instructional videos in the hyperlinks above are meant to support C2.0 content, but may use vocabulary or strategies not emphasized by MCPS.</i></p>

The Common Core State Standards require a balance of three fundamental components that result in rigorous mathematics acquisition: deep conceptual understanding, procedural skill, and mathematical applications and modeling.

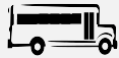


Grade 7 standards Parent Resource

Unit 1: Statistics and Probability

Topic 2: Chance Events and Probability Models

Learning Experiences by Common Core State Standard



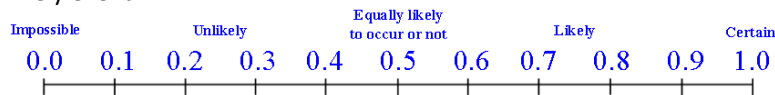
In school, your child will...



At home, your child can...

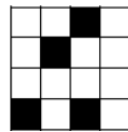
Topic 1: Chance Events and Probability Models

- Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around $\frac{1}{2}$ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.



- Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.

For one throw of a dart, what is the probability of winning a point? Note that a point is won if the dart lands on a black square.



- Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.

A botanist is investigating one square kilometer of rainforest and discovers 70 seedlings of plant A, 80 seedlings of plant B, and 50 seedlings of plant C. The botanist is planning on randomly selecting one plant from the total sample to experiment on when she returns. Create a probability model to show how likely the botanist is to select each plant type.

- Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

Candace wants to conduct a simulation of guessing correctly on a five question true/false quiz.

Create a probability model and conduct the simulation to determine the likelihood of passing (scoring at least 60%) the quiz.

- Examine the long range weather forecast and discuss how the likelihood of rain varies from day to day.
- Review the rules of a board game that uses dice and discuss the likelihood of different outcomes of occurring. For example: In Monopoly, if you throw doubles three times in succession, then you go to jail. Does this outcome occur more or less than any other outcome occurring three times in a row?

Additional Resources

- [LearnZillion: Calculate the probability of an event by creating a ratio](#) (video tutorial)
- [LearnZillion: Predict the frequency of an event using results from experiments](#) (video tutorial)
- [Khan Academy: Probability Models Practice](#) (video tutorial)
- [LearnZillion: Find the probability of a compound even by creating a tree diagram](#) (video tutorial)
- [Khan Academy: Sample spaces for compound events](#) (online practice)
- [Find the probability of a compound event by creating an organized list](#) (video tutorial)
- [Probability Fair](#) (online game)
- [Chances](#) (online game)
- [NRich enriching mathematics Flippin' Discs](#) (online investigation)
- [Grade 7 Standards Unit 4 Topic 1: Chance Events and Probability Models](#) (flexbook)

Additional Practice links support C2.0 content, but may use vocabulary or strategies not emphasized by MCPS.