

Probability

Family Letter

Dear Family,

In this module, *Probability*, students will develop an understanding of probability of simple and compound events. They will use this understanding to develop fluency in finding likelihoods, relative frequencies, and determining the sample space for compound events. They will also compare probabilities and design simulations.

What Did Students Learn Previously?

In previous grades students learned about how to frame a statistical question. They also increased their understanding of the different measures of center and measures of variation. Students then used those measures to develop an understanding of different statistical displays. These displays include dot plots, histograms and box plots.

What Will Students Learn in This Module?

Likelihoods and Frequency

- Students will develop their understanding of **outcomes** and **likelihoods** of **events**. They build mathematical language to describe the **likelihood** of **events** and use the terminology to communicate about chance **events**.
- Students will use their knowledge of **outcomes** and **likelihood** to develop an understanding of **relative frequency** of **simple events** and making predictions using **relative frequency**. They will use this understanding to develop fluency in finding **relative frequencies** of **simple events**.

Probabilities

- Students will develop their understanding of the **sample space** for **simple events** and how it relates to **probability**. They will use their knowledge of **relative frequency** to develop an understanding of **theoretical probability** of simple events and the **complement** of a **simple event**.
- Students will use their knowledge of **relative frequency** and **theoretical probability** to build an understanding of comparing **probabilities** of **simple events**.
- Students will use their knowledge of **sample space** of **simple events** to develop an understanding of finding the **sample space** of **compound events**. They will use their knowledge of the **probability** of **simple events** to develop fluency in finding the **probability** of **compound events**.
- For example; a **simple event** might be rolling a die or spinning a spinner while a **compound event** might be both flipping a coin and drolling a die.

Simulations

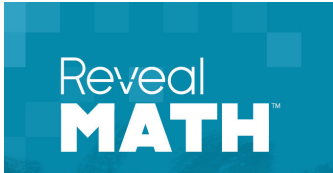
- Students will use their knowledge of simple and compound **probability** to develop an understanding of creating a **simulation** for a **simple or compound event**. They will use this understanding to gain fluency in simulating events and interpreting the results.

What Vocabulary Terms Will Students Use?

Term	Definition
complementary event	Two events in which either one or the other must happen, but they cannot happen at the same time. The sum of the probability of an event and its complement is 1 or 100%.
compound event	An event consisting of two or more simple events.
event	The desired outcome or set of outcomes in a probability experiment.
experimental probability	An estimated probability based on the relative frequency of positive outcomes occurring during an experiment. It is based on what <i>actually</i> occurred during such an experiment.
likelihood	The chance of an event occurring.
outcome	Any one of the possible results of an action.
probability	The chance that some event will happen. It is the ratio of the number of favorable outcomes to the number of possible outcomes.
relative frequency	A ratio that compares the frequency of each category to the total.
sample space	The set of all possible outcomes of a probability experiment.
simple event	One outcome or a collection of outcomes.
simulation	An experiment that is designed to model the action in a given situation.
theoretical probability	The ratio of the number of ways an event can occur to the number of possible outcomes in the sample space. It is based on what <i>should</i> happen when conducting a probability experiment.
uniform probability model	A probability model which assigns equal probability to all outcomes.

How You Can Provide Support

- Encourage your child to have a positive, growth-oriented attitude towards mathematics and their learning.
 - Encourage them to ask questions – both at home and in class. Sometimes, an answer to a question will generate more questions. That’s how you know they are learning!
 - Encourage your child to embrace challenges and remind them that every challenge is an opportunity to learn something new.
 - Celebrate successes – both small and large.
- Contact me to arrange a time to discuss the specifics of your child’s performance and how we can work together to help them succeed in this module.



Sincerely,

(Teacher's Name)

(Email/Phone)