

Grade 5, Unit Five: Probability & Data Analysis

In this unit your child will:

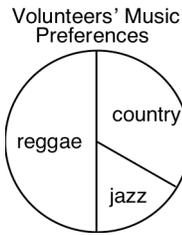
- practice multiplying and dividing multi-digit numbers using methods developed in earlier units
- find the range, median, mode, and mean of a set of data
- create and interpret bar graphs, double bar graphs, and pie graphs
- describe the probability of an event using the terms *impossible*, *unlikely*, *as likely as unlikely*, *likely*, and *certain*
- express the probability of an event as a fraction
- use an understanding of probability concepts to analyze a situation
- collect and analyze data from classroom surveys and experiments



Your child will learn and practice these skills by solving problems like those shown below. Keep this sheet for reference when you're helping with homework.

Problem	Comments
<p>Ms. Lopez and her students are hosting a pizza party for all the people who work in their school. The students asked the school staff how many pieces of pizza they usually eat. Their answers are shown here:</p> <p style="text-align: center;">2, 3, 1, 1, 4, 1, 1, 1, 2, 2, 1, 2, 2, 2, 3, 5, 1</p> <p>Write the numbers in order from least to greatest. Write each number as many times as it appears in the set above.</p> <p style="text-align: center;">1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 3, 3, 4, 5</p> <p>Find the range, median, mode, and mean of the numbers above.</p> <p>range 5 - 1 = 4 mode 1 median 2 mean 34 ÷ 17 = 2</p> <p>Complete this bar graph with the data above. Label the axes and give the graph a title.</p> <div style="text-align: center;"> <p>Pieces of Pizza Staff Eat</p> </div>	<p>Students organize, graph, and analyze data sets, including data they gather in their own experiments and surveys.</p> <p>The definitions below will refresh your memory of the statistics students use in this unit.</p> <p>range the difference between the highest and lowest values in the data set</p> <p>mode the value or values that appear most often in the data set</p> <p>median the middle value in the data set, when all the values are put in numerical order</p> <p>mean the average (Add all the values and divide the sum by the number of values to find the mean.)</p>

Mr. Chu and his students are having a party for the 24 volunteers who work in their school. The students asked what kind of music the volunteers would like to hear at the party. Their answers are shown on this pie graph.

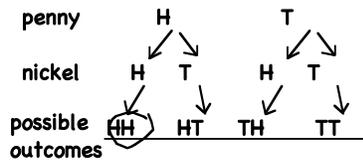


Students apply their skills with fractions when analyzing pie graphs and the spinners they use in their probability experiments.

Half the volunteers chose reggae and 4 chose jazz. What fraction of the volunteers want to hear country music? Show all your work.

$24 - 12 = 12$ (Half of 24 is 12.)
12 people chose country and jazz.
 $12 - 4 = 8$ 8 people chose country.
 $24 \div 8 = 3$ so 8 is a third of 24.
One-third of the volunteers chose country.

You are going to flip a penny and a nickel. What is the probability that both coins will come up heads? Express the probability as a fraction. Show all your work.



There are 4 possible outcomes.
There is only one way to get 2 heads. So the probability of getting 2 heads is $\frac{1}{4}$

Students must be able to list all the possible outcomes in a situation or experiment in order to determine the numerical probability of a specific outcome. They must also be able to think about that fraction in context to describe the probability in words.

Use words to describe the probability: is it likely, unlikely, impossible, or certain?
It is unlikely that both coins will come up heads, but it is possible.

Frequently Asked Questions about Unit Five

Q: I think probability is confusing. How can I still help my child?

A: Probability is complex and can be confusing even for adults, but the experiences students have in this unit will serve them well in the future. To help your child, insist that he or she complete homework assignments and try to help as much as you can. If you both get stuck, help your child write a note to the teacher about what is confusing.

It might help to keep in mind that when you are expressing the probability of a particular event numerically, you are saying what fraction of all the possible outcomes that particular event represents. In the example above, there are four possible outcomes when you flip the penny and the nickel: both come up heads, the penny comes up heads and the nickel comes up tails, the nickel comes up heads and the penny comes up tails, or they both come up tails. Out of these four possible outcomes, just one is "two heads." Therefore, the probability of two heads in this situation is one in four.