


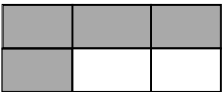
Grade 3, Unit Six: Money, Fractions & Probability

In this unit your child will:




- count, add, and subtract money amounts to \$5
- show money amounts to \$5 as decimal numbers
- read, write, compare and make models (e.g., pictures) of fractions
- predict the likely outcomes of simple probability experiments



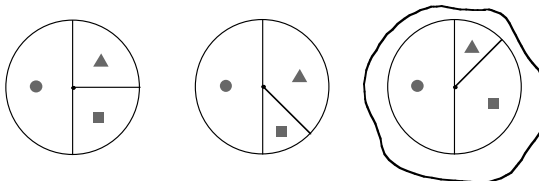
Your child will learn and practice these skills by solving problems like those shown below. Keep this sheet for reference when you're helping with homework.

Problem	Comments
<p>Maria had \$4.37. She bought a bottle of juice for \$1.79 and an apple for \$0.65. How much money did she have left? Show all of your work.</p> $1.79 + 0.65 = 1.80 + 0.64$ $= 1.80 + 0.20 + 0.44$ $= 2.44$ <p>She spent 2.44.</p> $2.44 + 2.00 = 4.44$ $2.00 - 0.07 = 1.93 \text{ (} 4.37 - 2.44 = 1.93 \text{)}$ <p>She had \$1.93 left.</p>	<p>This student's overall strategy involves finding the total cost of the items Maria bought and then subtracting that total from the amount of money Maria had to start with. The student used flexible number strategies to add and subtract these decimal numbers. First, she moved 1 cent from 0.65 to 1.79 to make the two numbers easier to add: such a strategy might be done mentally, although the student recorded the steps here. To find the difference between 2.44 and 4.37, the student added 2.00 to 2.44 to arrive at 4.44 and then adjusted by 7 cents to arrive at the correct final answer of \$1.93.</p>
<p>Sally and her brother Gerard each got a chocolate bar that was divided into 12 equal pieces. Sally ate $\frac{1}{2}$ of her bar. Gerard ate $\frac{4}{6}$ of his bar. Who ate more of a chocolate bar? Use pictures, numbers, and/or words to explain your answer.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> <p>Sally $\frac{1}{2}$</p>  </div> <div style="text-align: center;"> <p>Gerard $\frac{4}{6}$</p>  </div> </div> <p>Gerard ate more of his chocolate bar. You can see in the pictures that $\frac{4}{6}$ is more than $\frac{1}{2}$. Also, $\frac{3}{6}$ is equal to $\frac{1}{2}$ and $\frac{4}{6}$ is $\frac{1}{6}$ more than $\frac{3}{6}$, so $\frac{4}{6}$ has to be more than $\frac{1}{2}$.</p>	<p>This student drew the two chocolate bars and showed the fraction of a bar that Sally and Gerard each ate. The student did a good job drawing two chocolate bars of the same size so that the fractions could be compared.</p> <p>In the written explanation, the student demonstrates a strong understanding of fractions when she mentions that $\frac{3}{6}$ is equal to $\frac{1}{2}$ and that $\frac{4}{6}$ is $\frac{1}{6}$ more than that. Such reasoning will permit her to compare fractions without using a picture in the future.</p>

Milo spun one of the spinners below 24 times. This table shows his results:

		
13	2	10

Circle the spinner you think he probably used and explain why.



For all of them the circle part is the same, so I looked at the triangle and square parts. The last spinner has a tiny part for the triangle, so it makes sense it would only get 2 spins. Also the square part is a little bit less than half, and 10 spins is a little less than half of the 24 spins.

This student used a flexible understanding of fractions as part of a whole (on the spinner) and as part of a set (the set of 24 spins) to think about the situation. He saw that the third spinner was the only one on which it made sense for the triangle to get just 2 spins while the square got a little less than half of the total spins.

While the fractions on the spinner don't guarantee certain results, this student understands that it is *most likely* that Milo got these results using the third spinner.

Frequently Asked Questions about Unit Six

Q: Why does the unit mix decimals, fractions, and probability ideas?

A: In this unit, students explore decimals and fractions as different ways to represent parts of a whole. The connections they make between the two kinds of numbers help them understand each more deeply. For example, students know that 50 cents is half a dollar and can see that the decimal representation of 50 cents, 0.50, must therefore be equal to $\frac{1}{2}$. A deep understanding of fractions, as shown in the example above, helps students begin to explore probability in a more formal way.

Q: Probability seems like a confusing topic. Why study it in third grade?

A: Probability can be a very confusing topic for children and adults alike. It can be difficult to make sense of the fact that what is *likely* to happen is not necessarily what *does* happen. Quantifying the probability of a given outcome (e.g., a 1 out of 6 chance of rolling a 2 on a die) can be difficult and sometimes counterintuitive. By playing probability games and thinking about the results of those games, young students build up a collection of first-hand experiences that will help them make sense of probability concepts in the years to come.