

**Math: Grade 5, Lesson 5, Fractions**

**Lesson Objective:** The students will understand a fraction a division.

**Practice Focus:** Interpret a fraction as division

**TN Standards:** 5.NF.B.3

**Teacher Materials:**

- Paper
- Pens/markers/pencils

**Student Materials:**

- Paper and a pencil, and a surface to write on
- Student Practice Packet for Math, Grade 5, Lesson 4 which can be found at [www.tn.gov/education](http://www.tn.gov/education)

Teacher Do	Student Do
<p><b>Opening</b></p> <p><b>Hello! Welcome to Tennessee’s At Home Learning Series for math! Today’s lesson is for all our 5<sup>th</sup> graders out there, though all children are welcome to tune in. This lesson is the fifth in our series.</b></p> <p><b>My name is ____ and I’m a ____ grade teacher in Tennessee schools! I’m so excited to be your teacher for this lesson! Welcome to my virtual classroom!</b></p> <p><b>Today we will interpret a fraction as division.</b></p> <p><b>If you didn’t see our previous lesson, you can find it at <a href="http://www.tn.gov/education">www.tn.gov/education</a>. You can still tune in to today’s lesson if you haven’t see any of our others. But, it might be more fun if you first go back and watch our other lessons since we’ll be talking about things we learned previously.</b></p> <p><b>Before we get started, to participate fully in our lesson today, you will need:</b></p> <ul style="list-style-type: none"><li>• Paper and a pencil, and a surface to write on</li><li>• Student Practice Packet for Math, Grade 5, Lesson 4 which can be found at <a href="http://www.tn.gov/education">www.tn.gov/education</a></li></ul> <p><b>Ok, let’s begin!</b></p>	<p>Student gets paper and a pencil.</p>

<p><b>Intro</b>  <b>Welcome back! Today we will be thinking about fractions as division problems. You will need paper and a pencil. Are you ready?</b></p>	<p>Student gets paper and pencil</p>
<p><b>Teacher Model</b>  <b>Imagine we have two crackers.</b>          [Draw two rectangles to model the two crackers.]</p> <p><b>We want to share the two crackers equally between two people. How many crackers will each person get?</b> [Pause]  <b>Say a division sentence that tells what you just did with the crackers.</b> [Pause]  <math>2 \div 2 = 1</math>  <b>Let's record that with a drawing</b> [See figure one]</p> <p><b>Now imagine that there is only 1 cracker to share between the two people. How would you share the one cracker equally?</b> [Pause]  <b>Each person would get <math>\frac{1}{2}</math> of a cracker.</b></p> <p><b>Let's write a number sentence that shows how 1 cracker can be shared by 2 people equally.</b>  <math>1 \div 2 = \frac{1}{2}</math>  <b>We can also think about the 1 cracker being divided into halves:</b>  <math display="block">\frac{2}{2} \div 2 = \frac{1}{2}</math>  <b>So 2 halves divided by 2 is 1 half.</b>  <b>Let's record that thinking with another drawing.</b> [Pause]          [See figure two]</p> <p><b>What if we have one cracker to be divided equally among three people? How much would each person get?</b> [Pause]  <b>Each person would get <math>\frac{1}{3}</math> of a cracker.</b></p> <p><b>Can we write a number sentence showing how 1 cracker can be shared equally with 3 people?</b>          [Pause]  <math>1 \div 3 = \frac{1}{3}</math>  <b>We can also think about the 1 cracker being divided into thirds:</b></p>	<p>Student draws two rectangles to model the crackers.</p> <p>Student thinks one each.</p> <p>Student thinks/says/writes 2 divided by 2 equals 1.</p> <p>Student draws the model.</p> <p>Student thinks about how to share one cracker with two people.</p> <p>Student thinks about how to write this.          Student writes the number sentence.</p> <p>Student draws the model.</p> <p>Student thinks about how much each person would get.</p> <p>Student writes a number sentence.</p>

<p style="text-align: center;"><math>\frac{3}{3} \div 3 = \frac{1}{3}</math></p> <p>So 3 thirds divided by 3 is 1 third.</p> <p>Let's record that thinking with another drawing. [Pause] [See figure three]</p> <p>Look at both of these examples. What do you notice? [Pause] Both problems start with 1 whole, but it gets divided into 2 parts in the first problem and 3 parts in the second problem. Notice that both of the answers are fraction, and the fractions have the same digits in them as the division expressions. When you share the same size whole with 2 people, you get more than when you share it with 3 people. The fraction looks a lot like the division expression, but it's the amount that each person receives out of the whole.</p> <p>We can write the division expression as a fraction. 1 divided by 2 is the same as 1 half. 1 divided by 3 is the same as 1 third.</p> <p>Let's consider sharing two crackers with three people. Thinking about 1 divided by 3, how much do you think each person would receive? [Pause]</p> <p>It's double the amount of crackers shared with the same number of people as before. Each person should receive twice as much as before, so they should receive 2 thirds. The division sentence can be written similarly to a fraction, so 2 divided by 3 would be the same as 2/3. [Pause]</p> <p>Let's draw a model showing how the 2 crackers can be shared with 3 people. [Pause] [See figure four]</p> <p>So, we can say that <math>2 \div 3 = \frac{2}{3}</math></p>	<p>Student notices similarities and differences in the examples.</p> <p>Student thinks about how to share one cracker with three people.</p> <p>Student thinks about this idea.</p> <p>Student draws and labels the model.</p>
<p><b>Guided Practice</b> Now let's think about sharing 3 crackers equally with 2 people.</p>	<p>Student draws the square and thinks about how to share the crackers.</p>

[See figure five]

[Draw the 3 squares. Underneath draw 2 circles to represent the portion each person receives.]

**Think about how you can share these crackers. I have 3 crackers, so I can give 1 whole cracker to both people. Then, I'll just have to split the third cracker into halves and share it. Since there are 2 people, we could cut each cracker into 2 parts and then share them equally that way.**

**Let's record these ideas by drawing. We have 3 crackers. I heard someone say that there is enough for each person to receive a whole cracker. Draw a whole cracker in each circle. How many crackers remain? [Pause] 1!**

**What must we do with the remaining cracker if we want to continue sharing equally? [Pause]**

**We can divide into 2 equal parts, split it in half. How many halves will each person receive? [Pause] 1 half.**

**Record that by drawing one-half of the cracker within each circle. How many crackers did each person receive? [Pause]**

**Each person will receive 1 and  $\frac{1}{2}$  crackers. [Write  $3 \div 2 = 1 \frac{1}{2}$  beneath the drawing.] How many halves are in 1 and 1 half? [Pause] 3 halves! [Write  $3/2$  next to the equation.]**

**You could think about this a different way. You could cut the crackers into 2 equal parts before you begin sharing. Let's draw that way of sharing.**

[See figure six]

[Redraw 3 wholes. Divide them into halves horizontally.]

**How many halves were in 3 crackers? [Pause] 6 halves!**

**What is 6 halves divided by 2? [Pause]**

**Draw it. [Pause]**

**3 halves!**

Student draws the model.

Student thinks about how to equally share the remaining cracker.

Student models this on their drawing.

Student thinks about how much each person will receive.

Student labels his model.

Student draws this new model and labels it.

**PBS Lesson Series**

<p><b><u>Independent Practice</u></b> Today we have practiced interpreting a fraction as division. You sure did a great job! After the video, you will have some problems to practice on your own. Good luck and do your best!</p>	
<p><b><u>Closing</u></b> I enjoyed learning about fractions with you today! Thank you for inviting me into your home. I look forward to seeing you in our next lesson in Tennessee's At Home Learning Series! Bye!</p>	

Figure one

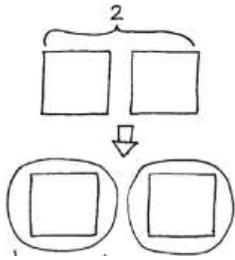


Figure two

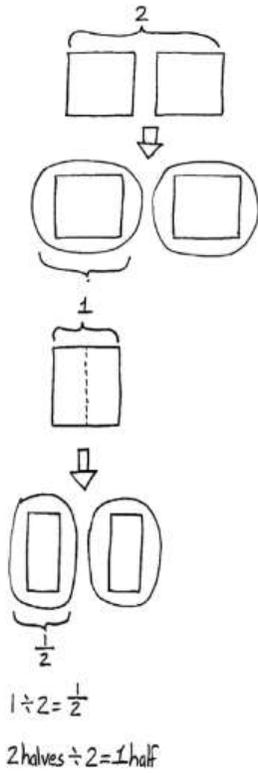


Figure three

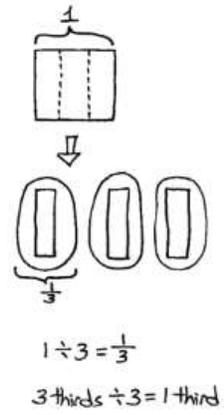


Figure four

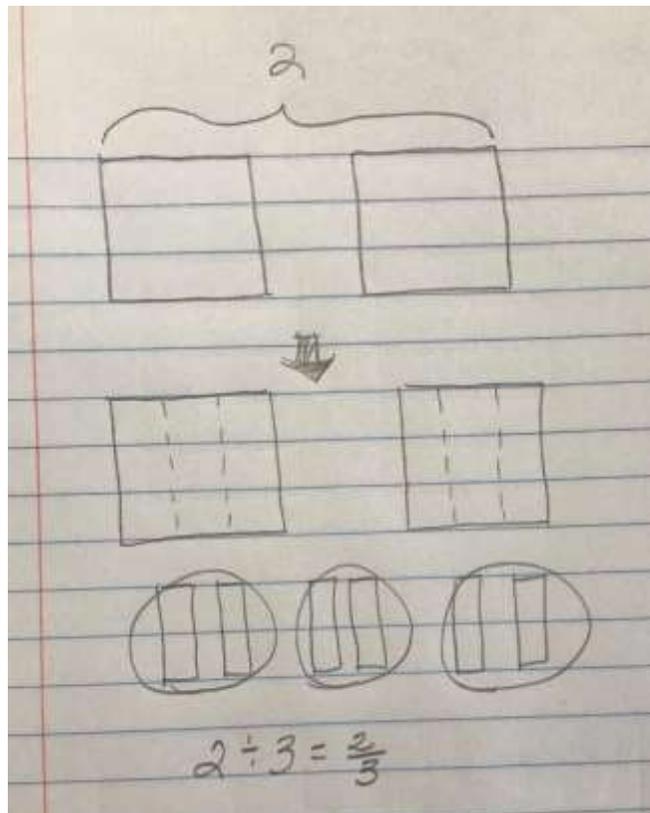


Figure five

$$3 \div 2 = \frac{3}{2} = 1\frac{1}{2}$$

6 halves  $\div$  2 = 3 halves

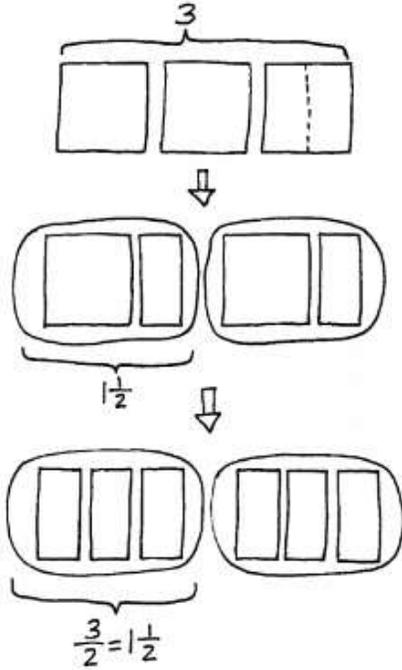
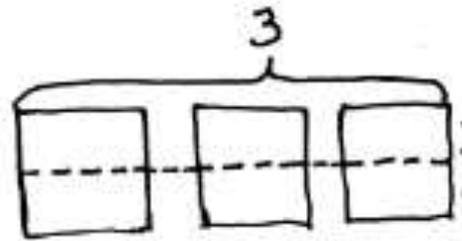


Figure six



$$\begin{aligned} 3 \div 2 \\ = 6 \text{ halves} \div 2 \\ = 3 \text{ halves} \end{aligned}$$

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