PBS Lesson Series

Math: Grade 5, Lesson 1, *Reviewing Fractions*

Lesson Objective: The students will make equivalent fractions.
Practice Focus: Make equivalent fractions with a number line, the area model, and numbers
TN Standards: 4.NF.A.1
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 1 which can be found at www.tn.gov/education

**Note:* The teacher could have printed rectangle and number line templates. The students will not have these. Since the students will need to draw these during the lesson, the teacher should draw them too.

Teacher Do	Student Do
Opening **Hello! Welcome to Tennessee's At Home Learning Series for math! Today's lesson is for all our 5th graders out there, though all children are welcome to tune in. This lesson is the first in our series.** **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!** **Today we will be reviewing making equivalent fractions with a number line, the area model, and numbers!** **Before we get started, to participate fully in our lesson today, you will need:** • Paper and a pencil, and a surface to write on • Student Practice Packet for Math, Grade 5, Lesson 1 which can be found at www.tn.gov/education **Ok, let's begin!**	Students get materials ready for the lesson.
Intro **Today we will review equivalent fractions.** **Let's begin by creating a rectangle, and divide it into two equal parts.** [Draw a rectangle and partition into halves.]	Student replicates the teacher's rectangle drawing and number line.

[See figure one below.] **Now let's draw a number line below our rectangle.** **Mark the number line with 0 and 1. Where does ½ belong?** [Pause] [Write these numbers ABOVE the number line.] **Remember that we call the bottom number in a fraction the "denominator". Can we rename the 0 and the 1 to have the same denominator as the ½ ?** [Pause] **We can say that 0 is 0 parts out of the 2 parts (or 0 halves). The one would be 2 parts out of the 2 parts (or 2 halves).** [As you are saying this, demonstrate one by writing 0/2 and 2/2 under the number line at 0 and 1, using the rectangle as your reference for the parts.]	Student replicates the teacher's number line.
<u>Teacher Model</u> **Let's do this process again. This time let's divide our rectangle into 4 equal parts or quarters.** [Demonstrate this by partitioning the rectangles into 1/4s.] **Now let's see how this can be written on our number line.** **How does this change our number line?** [Pause] **Will we have to add anything?** [Add the ¼ and ¾ to the number line.] **Now let's rewrite the 0, ½ and 1 so that they reflect the number of parts.** **What will 0 become? ½? 1?** [Pause] [Write 0/4, 2/4 and 4/4 under the 0/2, ½ and 2/2.] **What can we say about these pairs of fractions?** [Pause] [Point to 0, 0/2, 0/4 AND ½, 2/4 AND 1, 2/2, 4/4. Give students time to think.] [See figure two] **We will answer this question later in the lesson.**	Student replicates the teacher's rectangle and number line. Student thinks about how this will change the number line. Students think about what these pairs of fractions are called.

<u>Guided Practice</u> **Now let's partition the rectangle one more time. This time let's make eighths. Make eighths on your rectangle.** [Give student time to draw eights, then do it on your rectangle.]	Student partitions the rectangle into eighths.
Does your rectangle look like this? [Pause] [Count the partitions. You may explain that the rectangle has been partitioned by dividing the parts in half each time.]	
Mark these eighths on your number line. Remember that this means there are 8 parts, so your denominator should be 8. [Rewrite 0, ½ and 1 in terms of eighths. Give student time to mark their number line, then do it on your number line.]	Student marks the number line and rewrites 0, ½ and 1.
Does your number line look like this? [Pause] **What can we say about ½, 2/4 and 4/8?** **They are on the same place on the number line. That means they represent the same number.**	
What do we call these fractions? [Pause] **Yes! Equivalent fractions!**	Student thinks about what these fractions are called.
Look at your number line. Can you find other equivalent fractions? [Give the student time, then point out all the equivalent fractions.] [See figure three]	Student finds other equivalent fractions.
Let's write the equivalent fractions we have so far. **Do you see a pattern?** [Pause] **What do you notice about the equivalent fractions?** [Pause]	Student looks for a pattern.
Did you notice that the denominator and the numerator (the top number) are both being multiplied by 2? Where do you think the 2 comes from? Look back at our rectangles. Recall that we divided the parts in half every time [make 2 parts from each part]	
Let's create other equivalent fractions. Think about 2/3. Can you draw a rectangle and	

partition it into thirds? Shade 2/3 of the rectangle. [Pause] [Give students time to draw and partition their rectangle, then draw and partition your rectangle, shading 2/3.]	Students draw a rectangle and partition it into thirds. They shade 2/3 of the rectangle.
Let's use a number line to find 2/3. Can you think of a way to find a fraction equivalent to 2/3? [Give the student time to think.]	Student thinks of a fraction equivalent to 2/3.
What method did you use? How did you figure it out? [Pause]	Student thinks about what method he used.
We multiplied by 2 to create equivalent fractions before. Did you use 2? Can you use some other number? [Pause]	Student explores numbers other than 2.
Let's see if some other number works. **Let's start with ½ and use 5.** **1x5 = 5** **2x5 10** **Is ½ the same as 5/10?** [Pause]	Students thinks about ½ and 5/10.
What about 2/3? Let's use 4. **2x4 = 8** **3x4 12** [Pause]	Student finds a fraction equivalent to 2/3.
Independent Practice **We can create equivalent fractions by multiplying the numerator and the denominator by the same number! 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!** **Tomorrow we will talk about how to add and subtract fractions using what we have learned today!**	
Closing **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!**	

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Figure One

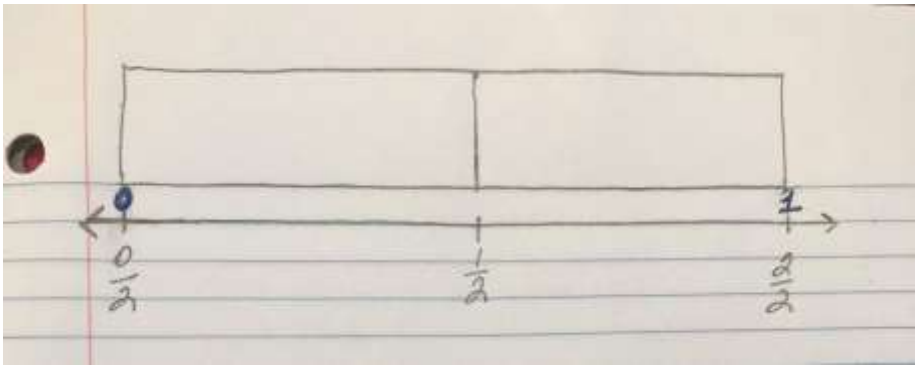


Figure Two

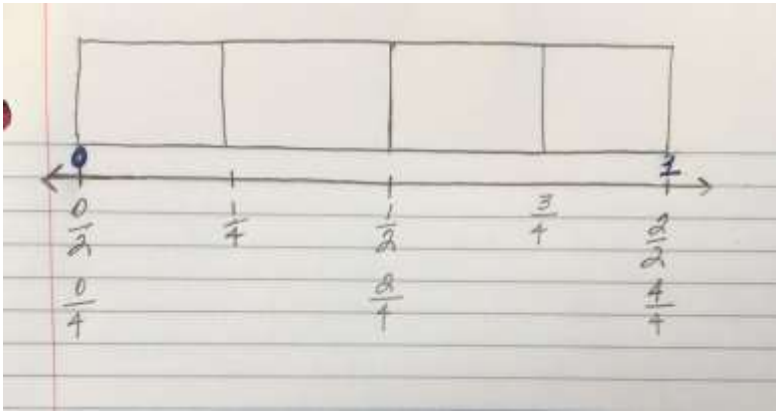
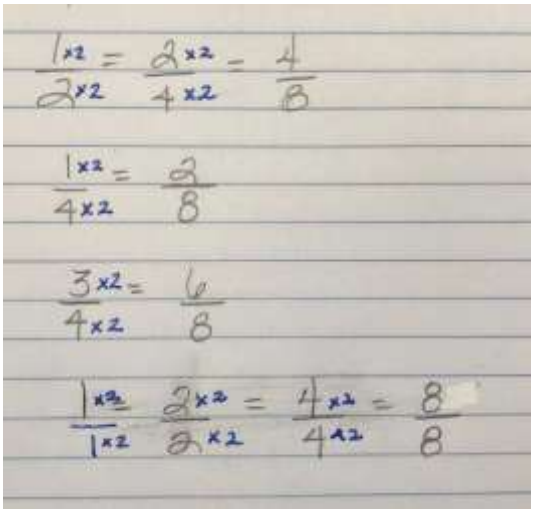


Figure Three



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