

**Math: Grade 3, Lesson 9, Writing a Whole Number as a Fraction with a Denominator of 1**

**Lesson Focus: Writing Whole Numbers as Fractions**

**Practice Focus:** Students will focus on practicing drawing models in order write a number as a fraction with a denominator of 1.

**Objective:** Students will use models and number lines to write a whole number as a fraction with a focus on a denominator of 1.

**Key Vocabulary:** denominator, equivalent fractions, fraction, numerator

**TN Standards:** 3.NF.A.3

**Teacher Materials:**

- Paper/pencil or dry erase board/marker
- Student practice packet

**Student Materials:**

- Paper and a pencil, and a surface to write on

Teacher Do	Student Do
<p><u>Opening (1 min)</u></p> <p><b>Hello! Welcome to Tennessee’s At Home Learning Series for math! Today’s lesson is for all our 3<sup>rd</sup> graders out there, though all children are welcome to tune in. This lesson is the ninth 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>If you didn’t see our previous lesson, you can find it on the TN Department of Education’s website 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>Today we will be learning about how to use number lines and area models in order to write whole numbers as fractions with a denominator of 1 in mathematics! 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 pencil</li></ul> <p><b>Ok, let’s begin!</b></p>	<p>Students get materials ready for the lesson.</p>

Intro (5 min.)

**Today we are going to think about writing a whole number as a fraction with a denominator of 1. A fraction is a number that names equal parts of a whole. We will also think about how to model our thinking about fractions by using models and number lines.**

**Let's review by looking at this number.**

[Write and say]

**2**

**How could we write the number 2 as halves, thirds, and fourths?** [Pause.]

**Let's look at this example.**

$$2 = \frac{\square}{2} \quad 2 = \frac{\square}{3} \quad 2 = \frac{\square}{4}$$

**How are these fractions the same?** [Pause.]

**Yes, they equal 2 whole.**

**How are these fractions different?** [Pause.]

**Yes, they have different denominators.**

**There are different ways to write a whole number as fraction.**

[Write the numerators in the boxes on your board/paper as you explain.]

**For first problem, the answer is 4 because  $4/2 = 2$**

**For the second problem, the answer is 6 because  $6/3 = 2$ .**

**For the third problem, the answer is 8 because  $8/4 = 2$ .**

$$2 = \frac{\square}{2} \quad 2 = \frac{\square}{3} \quad 2 = \frac{\square}{4}$$

**Let's review how to read a whole number represented as a fraction.**

[Read and write these fractions.]

$$\frac{1}{2} \quad \frac{2}{3} \quad \frac{3}{4}$$

This warm-up will support students' understanding of writing whole numbers as a fraction with a denominator of 1.

**You have learned how to read fractions.**

[Read and write these fractions.]

$$\frac{2}{1} \quad \frac{3}{1} \quad \frac{4}{1}$$

**Each of these fractions represents a whole number. These fractions are read as two over one, three over one, and four over one. The numerator is over the denominator when you write a fraction.**

Teacher Model (10 min.)

Objective #1: Teacher will explicitly instruct how to use an area model to write whole numbers as a fraction with a denominator of 1.

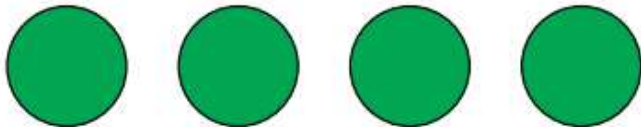
**Let's use what we just discussed to try and solve a problem about writing whole numbers as a fraction with a denominator of 1.**

**Listen and follow along as I think and work out this problem.**

**Justin picks 4 green peppers from his garden. He does not cut them into pieces. How can you write the number of peppers Justin picks, 4, as a fraction?**

[Pause.]

**First, let's draw a model. We know he picks 4 whole peppers. Draw the model with me like this:** [Draw the image below]



**Each circle stands for 1 green pepper. They are not divided into pieces, so each whole has one part.**

**How can you tell how many whole peppers Justin has?**  
[Pause.]

**Yes, we can look at the four circles.**

Objective #1:

Students will listen to the teacher do a think aloud working a contextual problem modeling the thought process for a problem from the start of the problem through finding the solution.

Students will follow along by drawing and responding to teacher questioning.

How can you tell that the peppers were left whole instead of cut into pieces? [Pause.]

There are 4 parts.

One piece makes the whole pepper, and we have 4 peppers. Using a visual model helps us to understand the problem.

Draw the model with me like this: [Draw the image below]

$$\frac{\text{Pieces of pepper}}{\text{Pieces that make up a whole pepper}} = \frac{4}{1}$$

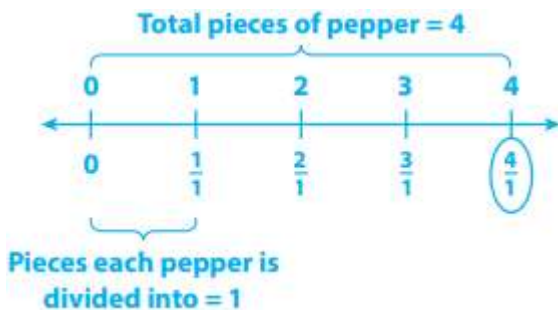
Remember that the denominator is the number of parts that make a whole. The pepper is not being divided into parts. We have 4 whole peppers.

Objective #2: Teacher will explicitly instruct how to use a number line to write whole numbers as a fraction with a denominator of 1.

Nice job! We can also use a number line to model this problem. Let's try this together. How many parts should we divide the number line into? [Pause]

Yes, four. We have four peppers.

Draw a number line with me like this: [Draw the image below]



The number line shows whole numbers on the top and fractions on the bottom. Notice that each whole number has an equivalent fraction. The spaces between whole numbers

are not divided into parts. Each whole number has one part, so the denominator of each equivalent fraction is 1.

What patterns do you see in the fraction labels for the whole numbers? [Pause.]

The numerator is the same as the whole number.

Why is it helpful to use one number line for both fractions instead of two separate number lines? [Pause.]

Using one number line, it is easier to tell whether the fractions represent the same point.

Tying the learning together:

Let's review!

To show how to write a whole number as a fraction, we can use models, or we can see if they are at the same point on a number line. [Refer back to the previous model and number line.] As we compare and connect these different representations, we can visually identify how they are related.

The wholes are not divided into parts, so there is only 1 part.

How many parts do the 4 green peppers make? [Pause.]

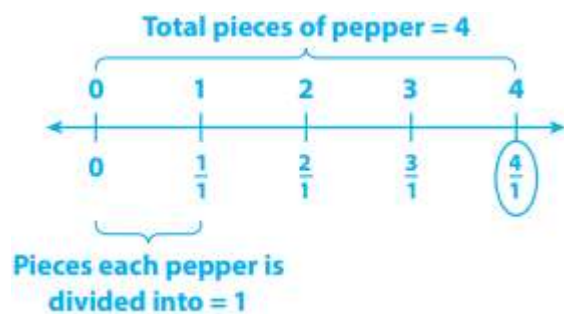
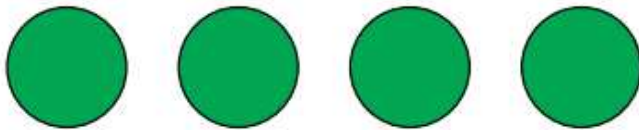
Yes, 4.

What does the numerator of a fraction show? [Pause.]

Yes, how many parts are being described.

What does the denominator of a fraction show? [Pause.]


Yes, how many parts are in the whole.



**Tying the learning together:**

Students will compare and connect the different representations and identify how they are related.

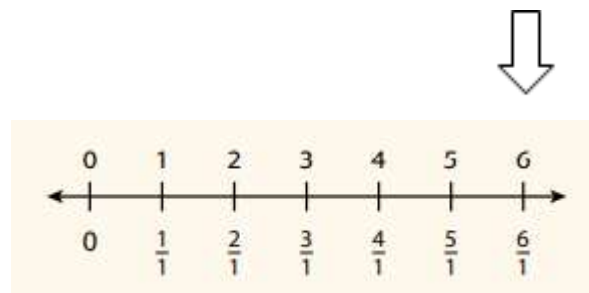
Students will respond to questions to display an understanding of how to write a whole number as a fraction.

<p>Okay, to write a fraction equivalent to 4, we would write</p> $\frac{4}{1}$ <p>Write the whole number as the numerator and use 1 for the denominator.</p>	
<p>Guided Practice (10 min.)</p> <p>[I do]</p> <p>Listen and follow along as I think and work out this problem.</p> <p>Alex picks 6 apples from her apple tree. She does not cut them into pieces. How can you write the number of apples Alex picks, 6, as a fraction?</p> <p>[Pause.]</p> <p>First, let's draw a model. We know she picks 6 whole apples.</p> <p>Draw the model with me like this: [Draw the image below]</p>  <p>Each circle stands for 1 apple.</p> <p>They are not divided into pieces, so each whole has one part.</p> <p>How can you tell how many whole apples Alex has? [Pause.]</p> <p>Yes, we can look at the six four circles.</p> <p>How can you tell that the apples were left whole instead of cut into pieces? [Pause.]</p> <p>Yes, we can look at the six circles. They are whole.</p>	<p>[I do]</p> <p>Students work alongside the teacher as the teacher thinks aloud.</p> <p>Through following along with the think aloud, students solve a problem that requires expressing a whole number as fraction.</p> <p>The purpose of this problem is to have students develop strategies to write whole numbers as fractions with a denominator of 1.</p>

[We do]

**We can also use a number line to model this problem. Let's try this together.**

**Draw a number line with me like this:** [Draw the image below]



**The number line shows whole numbers on the top and fractions on the bottom. Notice that each whole number has an equivalent fraction. The spaces between whole numbers are not divided into parts. Each whole number has one part, so the denominator of each equivalent fraction is 1.**

**What patterns do you see in the fraction labels for the whole numbers?** [Pause.]

**The numerator is the same as the whole number.**

**Why is it helpful to use one number line for both fractions instead of two separate number lines?** [Pause.]

**Yes, we can see that the fraction and the whole number line up at the same point on the line.**

[We do]

Students will respond to teacher questions with less scaffolding than the previous example. Students will have more time to think and respond on their own prior to the teacher providing solutions.

**Alex has 6 apples. We can write the whole number as fraction with a denominator of 1 like this:** [Write the fraction on your board/paper.]

$$\frac{6}{1} = 6$$

[You do]

**Now you are going to try a problem on your own. Remember to draw a picture or use a number line! Listen as I read aloud:**

**Evan has 3 loaves of bread that he has not sliced yet. Use a number line or model to write the pieces of bread Evan has as a fraction.**

[Draw the number line on your board and write the fraction.]

**Great job, students! Let's look at your work. Here is a possible solution.**



$$\frac{3}{1}$$

Additional Problems (if Needed):

- 1. Julia picks 10 apples from her apple tree. She does not cut them into pieces. How can you write the**

[You do]

Students are working almost exclusively independently with the teacher providing answers at the end.



<p>number of apples Alex picks, 10, as a fraction? Draw a model or number line to solve.</p> <p>2. Beverly picks 20 apples from her apple tree. She does not cut them into pieces. How can you write the number of apples Alex picks, 20, as a fraction? Draw a model or number line to solve.</p>	
<p><u>Independent Practice (1 min.)</u></p> <p>Great work, students! Today, we reviewed how to write a whole number as a fraction with a denominator as 1. I hope you're seeing some connections to fractions and number lines! You sure did a great job! I will show you the independent practice problems now, or you can find them in the student practice for this lesson posted on our website, <a href="http://www.tn.gov/education">www.tn.gov/education</a>. [Teacher shows student practice page under document camera or camera zooms in on student practice page.]</p> <p><b>Good luck and do your best!</b></p>	
<p><u>Closing (1 min)</u></p> <p>I enjoyed reviewing whole numbers and fractions with you! 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>	

*This work is based on an original work of Curriculum Associates made available through licensing under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License. This does not in any way imply that Curriculum Associates endorses this work. Licensing terms: <http://creativecommons.org/licenses/by-nc-sa/3.0/>*