

**North Penn School District**  
**Elementary Math Parent Letter**

**Grade 3**

**Unit 5 – Chapter 8: Understand Fractions**

**Examples for each lesson:**

**Lesson 8.1**

**Equal Parts of a Whole**

When you divide a shape into **equal parts**, each part must be exactly the same size.

This rectangle is divided into 2 equal parts, or **halves**.



This rectangle is divided into 3 equal parts, or **thirds**.



This rectangle is divided into 4 equal parts, or **fourths**.



More information on this strategy is available on Animated Math Model #30.

**Lesson 8.2**

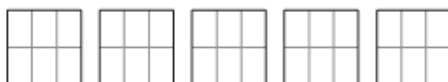
**Equal Shares**

Six brothers share 5 sandwiches equally. How much does each brother get? Draw to model the problem.

**Step 1** Draw 5 squares for the sandwiches.



**Step 2** There are 6 brothers. Draw lines to divide each sandwich into 6 equal parts.



**Step 3** Each brother will get 1 equal part from each sandwich.

So, each brother gets 5 **sixths** of a sandwich.

## Lesson 8.3

### Unit Fractions of a Whole

A **fraction** is a number. It names part of a whole or part of a group.

The top number tells how many equal parts are being counted.

The bottom number tells how many equal parts are in the whole.

A **unit fraction** names 1 equal part of a whole. It always has 1 as its top number.

**How much is 1 part of a fruit bar that is cut into 8 equal parts?**

**Step 1** Use fraction strips. Make a strip showing 8 equal parts, or eighths.



**Step 2** Shade 1 of the parts and name it.



This fraction is called  $\frac{1}{8}$ .

So, 1 part of a fruit bar that can be divided into 8 equal parts is  $\frac{1}{8}$ .

More information on this strategy is available on Animated Math Model #31.

## Lesson 8.4

### Fractions of a Whole

Some shapes can be cut into equal parts.

A fraction can name more than 1 equal part of a whole.

**Write a fraction in words and in numbers to name the shaded part.**



How many equal parts make up the whole shape? 6 equal parts

How many parts are shaded? 3 parts

So, 3 parts out of 6 equal parts are shaded. Read: three sixths. Write:  $\frac{3}{6}$

More information on this strategy is available on Animated Math Model #32.

## Lesson 8.5

### Fractions on a Number Line

Use the fraction strips to help name the points on the number line.

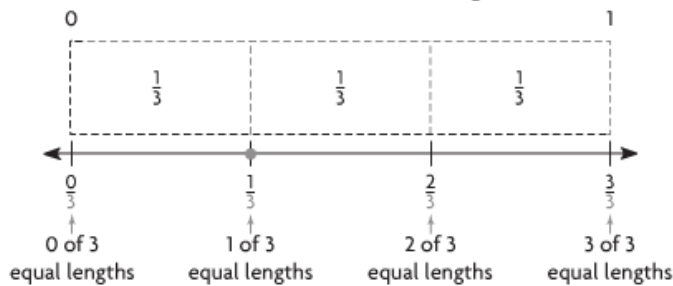
Draw a point to show  $\frac{1}{3}$ .

**Step 1** The denominator is 3, so use fraction strips for thirds. Place the fraction strips above the number line. Use the fraction strips to divide the number line into three equal lengths.

**Step 2** Label each mark on the number line.

**Think:** The distance between each mark is  $\frac{1}{3}$  of the total distance, so count the number of  $\frac{1}{3}$  lengths.

**Step 3** Draw a point on the number line to show  $\frac{1}{3}$ .



## Lesson 8.6

### Relate Fractions and Whole Numbers

A fraction greater than 1 has a numerator greater than its denominator.

Jason ran 2 miles and Tyra ran  $\frac{6}{3}$  miles. Did Jason and Tyra run the same distance?

**Step 1** Use fraction strips to show the distances.  
Use 2 whole strips to show Jason's distance.  
Use six  $\frac{1}{3}$ -strips to show Tyra's distance.

Jason	1			1		
Tyra	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
	$1 = \frac{3}{3}$			$2 = \frac{6}{3}$		

**Step 2** Compare the fraction strips.  
Since the fraction strips for 2 and  $\frac{6}{3}$  are the same length, they are equal.

So, Jason and Tyra ran the same distance.

## Lesson 8.7

### Fractions of a Group

Adam has a collection of cars.

**What fraction names the shaded part of the collection?**



**Step 1** Count how many cars are shaded. There are 3 shaded cars. This number will be the **numerator**, or the top number of the fraction.

**Step 2** Count the total number of cars. 8 This number will be the **denominator**, or the bottom number of the fraction.

**Step 3** Read the fraction: three eighths, or three out of eight.

So,  $\frac{3}{8}$  of Adam's cars are shaded.

More information on this strategy is available on Animated Math Model #34.

## Lesson 8.8

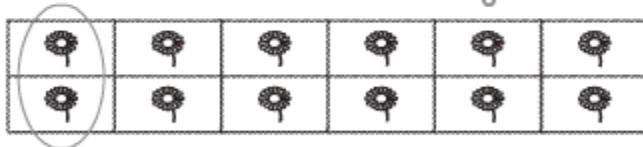
### Find Part of a Group Using Unit Fractions

Lauren bought 12 stamps for postcards. She gave Brianna  $\frac{1}{6}$  of them. How many stamps did Lauren give to Brianna?



**Step 1** Find the total number of stamps. 12 stamps

**Step 2** Since you want to find  $\frac{1}{6}$  of the group, there should be 6 equal groups. Circle one of the groups to show  $\frac{1}{6}$ .







**Step 3** Find  $\frac{1}{6}$  of the stamps. How many stamps are in 1 group? 2 stamps

So, Lauren gave Brianna 2 stamps.  $\frac{1}{6}$  of 12 = 2

## Lesson 8.9

### Problem Solving • Find the Whole Group Using Unit Fractions

There are 3 apple juice boxes in the cooler. One fourth of the juice boxes in the cooler are apple juice. How many juice boxes are in the cooler?

Read the Problem	Solve the Problem
<p><b>What do I need to find?</b> I need to find <u>how many juice boxes</u> are in the cooler.</p>	<p><b>Describe how to draw a diagram to solve.</b> The denominator in <math>\frac{1}{4}</math> tells you that there are <u>4</u> parts in the whole group. Draw 4 circles to show <u>4</u> parts.</p> 
<p><b>What information do I need to use?</b> There are <u>3</u> apple juice boxes. <u>One fourth</u> of the juice boxes are apple juice.</p>	<p>Since 3 juice boxes are <math>\frac{1}{4}</math> of the group, draw <u>3</u> counters in the first circle.</p>  <p>Since there are <u>3</u> counters in the first circle, draw <u>3</u> counters in each of the remaining circles. Then count all of the counters.</p> 
<p><b>How will I use the information?</b> I will use the information in the problem to draw a diagram.</p>	<p>So, there are <u>12</u> juice boxes in the cooler.</p> 

### Vocabulary

**Denominator** – the part of the fraction below the line, which tells how many equal parts there are in the whole or in the group

**Eighths** – divided into 8 equal parts

**Equal parts** – parts that are exactly the same size

**Fourths** – divided into 4 equal parts

**Fraction** – a number that names part of a whole or part of a group

**Fraction greater than 1** – a fraction that has a numerator greater than its denominator

**Halves** – divided into 2 equal parts

**Numerator** – the part of a fraction above the line, which tells how many parts are being counted

**Sixths** – divided into 6 equal parts

**Thirds** – divided into 3 equal parts

**Unit fraction** – a fraction that has 1 as its top number

**Whole** – all of the parts of one shape or group