Oak Park Elementary School District 97

MATH NEWS

Grade 5 | Module 4 | Topic B | Fractions as Decimals

Welcome

This document is created to give parents and students a better understanding of the math concepts found in the Eureka Math (© 2013 Common Core, Inc.) that is also posted in the Engage New York material taught in the classroom. Grade 5 Module 4 of Eureka Math (Engage New York) covers Multiplication and Division of Fractions and Decimal Fractions. This newsletter will address fractions as decimals

Objectives

- Interpret a fraction as division
- Use tape diagrams to model fractions as division
- Solve word problems involving the division of whole numbers with answers in the form of fractions or whole numbers.

Words to Know

- Tape Diagram
- Algorithm
- Unit/Unit Form
- Equation

Things to Remember

Tape Diagram: Drawing that looks like a segment of tape, used to illustrate number relationships.
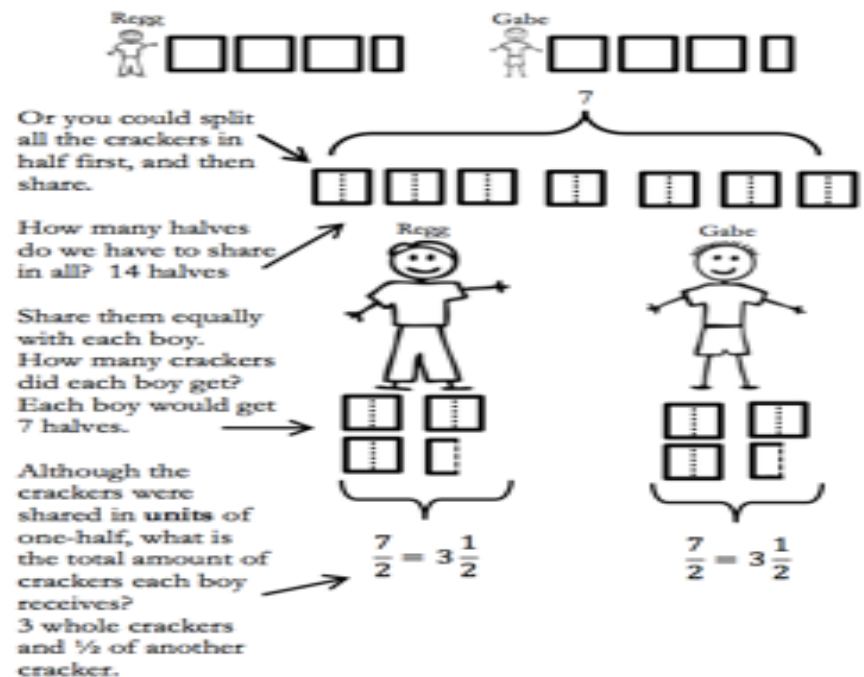
Important Information

Things to Remember: Example of Tape Diagram

Example: Two hundred seventy-three vehicles were parked in a parking lot. One-third of the vehicles were trucks. How many trucks were in the parking lot?

$$3 \text{ units(sections)} = 273$$
$$1 \text{ unit (section)} = 273 \div 3$$
$$= 91 \text{ trucks}$$
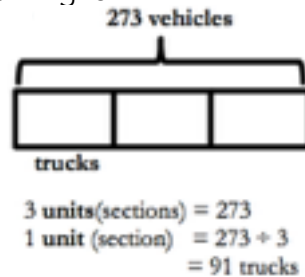
Focus Area - Example Problem

Egg has 7 crackers he wants to share between his friend Gabe and himself equally. Think: If there are 7 crackers, you could give each boy 3 crackers. Then take the last cracker and split it in half and give each boy one of the halves.

Or you could split all the crackers in half first, and then share.

How many halves do we have to share in all? 14 halves

Share them equally with each boy. How many crackers did each boy get? Each boy would get 7 halves.

Although the crackers were shared in **units** of one-half, what is the total amount of crackers each boy receives? 3 whole crackers and ½ of another cracker.

$$\frac{7}{2} = 3\frac{1}{2}$$

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Problem From p. 2 Continued:

Division Equation: $7 \div 2 = \frac{7}{2} = 3\frac{1}{2}$

Unit Form: 14 halves ÷ 2 = 7 halves

Each boy would get 3 ½ crackers.

check: $2 \times 3\frac{1}{2}$

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

$= 6 + \frac{2}{2}$

$= 7$ crackers

Application Problems

Using a picture, show how friends Sally, Adam, and Mandy could share two candy bars. Write an **equation**, solve, and check.

Strategy:
Draw two **tape diagrams** since there are 2 candy bars. Divide each candy bar into 3 equal parts and then share among the three friends.

Sally	Adam	Mandy
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$

Sally	Adam	Mandy
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
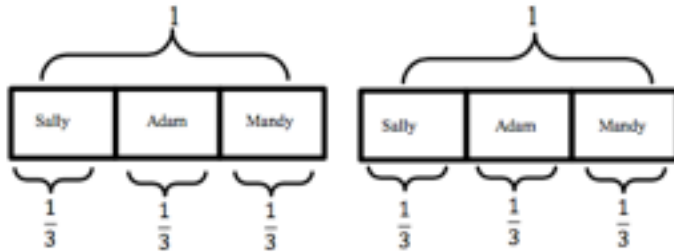
Each friend gets $\frac{2}{3}$ of the candy bars.

check:

$3 \times \frac{2}{3} = \frac{2}{3} + \frac{2}{3} + \frac{2}{3}$
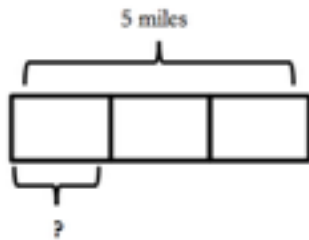
$= \frac{6}{3}$

$= 2$ *candy bars*

Unit Form: 6 thirds ÷ 3 = 2 thirds

Division **Equation:** $2 \div 3 = \frac{2}{3}$

Mark ran a total of 5 miles in 3 days. If Mark runs the same distance every day, how many miles does he run each day?

To solve this problem use a tape diagram.

We know that 3 **units** are equal to 5 miles.
We want to know what 1 **unit** is equal to.

5 miles

?

3 units = 5

1 unit = $5 \div 3 = \frac{5}{3}$

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

Algorithm

$$\begin{array}{r} 1\frac{2}{3} \\ 3\overline{\smash{)}5} \\ \underline{-3} \\ 2 \end{array}$$

Mark ran $1\frac{2}{3}$ miles each day.

Check:

$3 \times 1\frac{2}{3}$

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

$= 3 + \frac{6}{3}$

$= 3 + 2$

$= 5$ miles

American Cookie Company uses 6 cups of chocolate chips to make 8 batches of mini chocolate chip cookies. If each batch uses the same amount of chocolate chips, how many cups of chocolate chips are used? **(Solve using drawing, algorithm, and check your answer.)**

6 cups shared equally in 8 batches of cookies.

6 cups

?
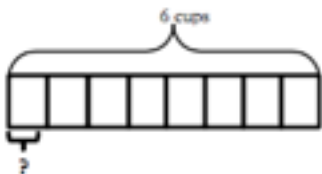
8 units = 6 cups

1 unit = $6 \div 8$

$= \frac{6 \div 2}{8 \div 2} = \frac{3}{4}$

$\frac{3}{4}$ cup of chocolate chips is used in each batch.

Algorithm

$$8\overline{\smash{)}\begin{array}{l} 0\frac{6}{8} = \frac{3}{4} \\ 6 \\ \underline{0} \\ 6 \end{array}}$$

Check:

$8 \times \frac{3}{4}$

$= \frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4}$

$= \frac{24}{4} = \frac{4}{4} + \frac{4}{4} + \frac{4}{4} + \frac{4}{4} + \frac{4}{4} + \frac{4}{4}$

$= 1 + 1 + 1 + 1 + 1 + 1$

$= 6$ cups

District Mathematics Website

Be sure to visit our District 97 5th Grade Math Resources Website. It has a ton of resources that can further assist your 5th Grade Family! Some of the specific elements are detailed below.

Website: http://op97mathgrade5.weebly.com/module-4.html

Homework Helper

Would you like written homework help specific for each lesson in this Topic? Click below to access it!

Website: http://op97mathgrade5.weebly.com/uploads/2/2/9/1/22918938/homework_helper-grade_5_module_4.pdf

Video Help

Flipped learning is a great way to review topics that your student is learning in the classroom. The following are links to videos that give detailed explanations for each lesson in this topic.

Website: https://www.tes.com/lessons/ahONa5NczU7C7Q/video-help-module-4

Module 4 Parent Tips

Eureka Math has created a guide to this Module specifically for parents. Click below to access it!

Website: http://op97mathgrade5.weebly.com/uploads/2/2/9/1/22918938/eureka_math_module_4_parent_tip_sheet.pdf