Math 8 LG 10
Multiplying and Dividing Fractions

INTRODUCTION:

Fractions are used in many different professions outside of school. From the contractor to the chef, and the mechanic to the pipe fitter, many people need to know basic mathematical operations with fractions and mixed numbers. For example: a framer needs to calculate the height at which to put a landing on a staircase, and by code each stair is a height of $7\frac{3}{4}$ inches. If he has seven stairs to the landing, how far from the top of the stairs must he place the landing? A typical decision in construction; however, it is the same calculation an architect has to do in order to design a building. As you can see Fractions can be found everywhere.

LEARNING GUIDE EXPECTATIONS:

On the completion of this learning guide you will be able to:
1) multiply a fraction and a whole number.
2) divide a fraction by a whole number.
3) multiply 2 proper fractions.
4) multiply two improper fractions or mixed numbers.
5) divide two fractions or mixed numbers.
6) decide when to multiply fractions and when to divide fractions in solving problems.

EVALUATION:

You are ready to progress to the next learning guide when you can demonstrate your understanding of the above expectations. Please refer to your Mathematics 8 Marks Record Sheet to determine the assessment.

RESOURCES NEEDED:

Math Links 8 Text

THSS Math 8 Learning Guides and Math 8 Journal Entries Package

LEARNING ACTIVITIES:

Expectation #1: Multiply a fraction and a whole number.

1. [Watch and take notes on instructional video on Modeling how to Multiply Fractions & Whole Numbers.](#)

2. In the Math Links 8 text, work through Examples 1 & 2 on Chapter 6 Section 6.1 pages 199-200. Now complete Chapter 6 Section 6.1 #4-7 on pages 202-203.
3. In the Math Links 8 text, work through Example 3 on Chapter 6 Section 6.1 pages 200-201. Now complete Chapter 6 Section 6.1 #8,9, 11-13, 15 on pages 202-203.

4. Read Key Ideas on Chapter 6 Section 6.1 page 201. In your math journal, answer the Expectation 1 question.

Expectation #2: Divide a fraction by a whole number.

1. [Watch and take notes on instructional video on Modeling how to Divide Fractions & Whole Numbers.](#)

2. In the Math Links 8 text, work through Examples 1 & 2 on Chapter 6 Section 6.2 pages 205-206. Now complete Chapter 6 Section 6.2 #4 & 5 on page 208.
3. In the Math Links 8 text, work through Example 3 on Chapter 6 Section 6.2 pages 206-207. Now complete Chapter 6 Section 6.2 #6-9, 12, & 14 on pages 208-209.

4. Read Key Ideas on Chapter 6 Section 6.2 page 207. In your math journal, complete the Expectation 2 question.

Expectation #3: Multiply 2 proper fractions.

1. [Watch and take notes on instructional video on Modeling how to Multiply 2 Fractions.](#)

2. In the Math Links 8 text, read through Examples 1 & 2 on Chapter 6 Section 6.3 pages 211 & 212. Now complete Chapter 6 Section 6.3 #3 & 4 on page 214.
3. In the Math Links 8 text, read the last lines of Example 3 on Chapter 6 Section 6.3 page 213. Now complete Chapter 6 Section 6.3 #5-8, 14 & 15 on pages 214 & 215.

4. Read Key Ideas on Chapter 6 Section 6.3 page 213. In your math journal, answer the Expectation 3 question.

Expectation #4: Multiply two improper fractions or mixed numbers.

1. [Watch and take notes on instructional video on Multiplying Fractions.](#)

2. In the Math Links 8 text, complete the Explore the Math activity on Chapter 6 Section 6.4 pages 216-217.

3. In the Math Links 8 text, read through Examples 1 & 2 on Chapter 6 Section 6.4 pages 217-218. Now complete Chapter 6 Section 6.4 #4-6, 8, 11-13, 15, 16, 20 on pages 220-221.

4. Read Key Ideas on Chapter 6 Section 6.4 page 219-220. In your math journal, complete the journal entry for LG 10 Expectation 1.

Expectation #5: Divide two fractions or mixed numbers.

1. [Watch and take notes on instructional video on Dividing Fractions.](#)

2. In the Math Links 8 text, complete the Explore the Math activity on Chapter 6 Section 6.5 pages 222-223.

3. In the Math Links 8 text, work through Examples1 & 2 on Chapter 6 Section 6.5 pages 224-225. Now complete Chapter 6 Section 6.5 #5-10, &12 on pages 227-228.

4. In the Math Links 8 text, work through Example 3 on Chapter 6 Section 6.5 page 225. Now complete Chapter 6 Section 6.5 #13,18, 19 & 23 on page 228.

5. Read Key Ideas on Chapter 6 Section 6.5 page 226-227. In your math journal, explain which method you chose for Expectation 2.

Expectation #6: Decide when to multiply fractions and when to divide fractions in solving problems.

1. [Watch and take notes on instructional video on Solving Problems Multiplying and Dividing Fractions.](#)

2. In the Math Links 8 text, work through Example 1 on Chapter 6 Section 6.6 page 231. Now complete Chapter 6 Section 6.6 #4 & 5 on page 234.

3. In the Math Links 8 text, work through Example 2 on Chapter 6 Section 6.6 page 232. Now complete Chapter 6 Section 6.6 #6-8, 11-13, 15 on pages 234-235.

4. In your math journal, develop a 10 question quiz with answers that will demonstrate your understanding of Multiplying and Dividing Fractions. (See Expect #3 in your journal)

REVIEW AND CHALLENGE

1. In the Math Links 8 text, complete Chapter 6 Review #1-26 on pages 236-237.