Notes and Class Participation

Directions: Print this handout. Use this handout to take notes as you read pages 305 - 316, watch the lecture video, and view the PowerPoint slides. After you complete this handout, scan pages 1-5, and attach them to Lesson 18 Class Participation Assignment. Hyperlinks are on page 6.

Section 6.3 Lecture Video

PowerPoint Slides

Multiplication of Rational Numbers

Multiplication as repeated addition

Model multiplying $2 \cdot \frac{2}{3}$ as repeated addition using a pie area model. Make sure to simplify. Clearly indicate the answer.

Watch this student determine $\frac{3}{4} \cdot 2$. Initially, the student did not answer the question correctly. Write the problem the student solved initially.

Model $\frac{3}{4}$ of 2 cupcakes. Make sure to simplify. Clearly indicate the answer.

Other Models for Multiplication

Watch this video showing fraction bar and area models for multiplication.

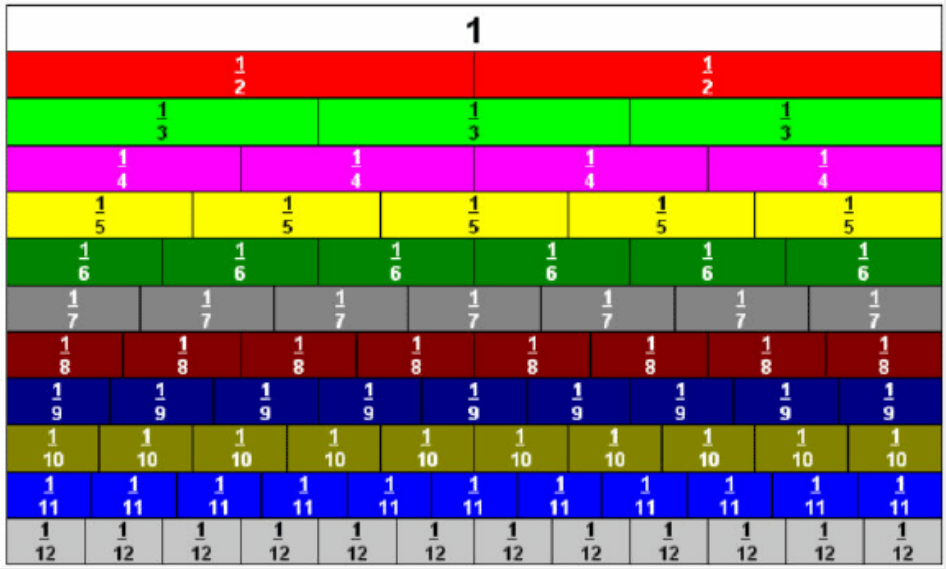
Watch this video modeling area multiplication of fractions.

Model multiplying $\frac{2}{5} \cdot \frac{1}{3}$ using the area model. Make sure to simplify. Clearly indicate the answer.

Fraction Wall Multiplication

Watch this video on how to model multiplying fraction by using a fraction wall.

Model multiplying $\frac{1}{4} \cdot \frac{2}{3}$ using a fraction wall. Make sure to simplify. Clearly indicate the answer.



Definition of Multiplication of Rational Number

Write the definition of multiplication of rational numbers.

Multiplicative Inverse

Write the multiplicative inverse below each of the following numbers below each number.

1	$-\frac{3}{4}$	0	$4\frac{3}{5}$

Multiplying Mixed Numbers

Multiplying mixed numbers by changing to improper fractions

Watch this video on how to multiply mixed numbers by first changing to improper fractions.

Multiply $2\frac{1}{3}\cdot 3\frac{3}{4}$ by first changing to improper fractions. Make sure to simplify.

Multiplying mixed numbers by using the distributive method

Watch this video on how to multiply mixed numbers using the distributive method.

Multiply $2\frac{1}{3}\cdot 3\frac{3}{4}$ using the distributive method. Make sure to simplify.

Dividing Rational Numbers

Complete the following statement: For the equation $a \div b = c$, c is the number of ____s in _____.
For instance, $8 \div 2$: The division question would be "How many 2s are in 8?" There are four twos in 8. Thus, $8 \div 2 = 4$.

Watch this video of a student solving a division problem in her head. What division problem did she solve?

Watch this video about modeling division using pattern blocks.

Review pattern block relationships using the pattern block virtual playground.

For the problem $\frac{2}{3} \div \frac{1}{6}$, what is the division question?

Model $\frac{2}{3} \div \frac{1}{6}$ using pattern blocks. Clearly indicate the answer.

Algorithm for Dividing Fractions

Write the algorithm for dividing fractions.

Watch this video of a student using the division algorithm for dividing fractions. Discuss why you think the student had difficulty completing the last problem. How will this influence the way that you introduce a new concept to your students?

Use the division of fractions algorithm to divide $\frac{5}{12} \div \frac{10}{27}$. Make sure to simplify.

Dividing Mixed Numbers

- First, change mixed numbers into improper fractions.
- Then divide the fractions using the division of fractions algorithm.

Divide $3\frac{1}{5} \div 4\frac{2}{3}$ using the division of fractions algorithm.

Understanding Division Word Problems

Zach has $35\frac{1}{2}$ cups of flour available to make cupcakes. Each cupcake requires $\frac{3}{8}$ of a cup of flour.

How many whole cupcakes can he make?

How much **flour** is left over? This is not how many partial cupcakes can be made with the excess flour but how much flour is left over after the maximum number of cupcakes are made.

Review Terms:

Review terms from Section 6.1 by using flashcards found here. Select chapter 6 and then select section 3. Review the terms until you know them.

Hyperlinks

- Lecture video: https://mediaplayer.pearsoncmg.com/assets/BMT13_sl_0603
- PowerPoint slides: https://cwoer.ccbcmd.edu/math/math131/Lesson18Section6.3.ppsx
- Student Video Multiplying Fractions: https://mediaplayer.pearsoncmg.com/assets/IMAP_330
- Models For Fraction Multiplication Video: https://mediaplayer.pearsoncmg.com/assets/BMT12_ccia_0603_01
- Area Model Of Fraction Multiplication Video: http://www.youtube.com/embed/qg2u0bvHBGU?r=0
- Modeling Fraction Wall Multiplication Video: http://www.youtube.com/embed/Eug0wRCpz88?r=0
- Multiplying Mixed Numbers By Changing To Improper Fractions Video: http://www.youtube.com/embed/RPhaidW0dmY?r=0
- Multiply Mixed Numbers Using The Distributive Property Video: http://www.youtube.com/embed/dkQq7byD9QE?r=0
- Solving A Division Problem Mentally Video: https://mediaplayer.pearsoncmg.com/assets/IMAP_377
- Video Modeling Division Using Pattern Blocks: http://www.youtube.com/embed/oewp2S51FW4?r=0
- Pattern Blocks Playground: https://mathsbot.com/manipulatives/patternBlocks
- Flashcards: https://media.pearsoncmg.com/aw/aw_billstein_mathforteachers_13/flashcards/launch.html