Math Makes Sense 8

Chapter: 3- Operations With Fractions – you have done this before too – practice makes perfect! Get some grid paper- NOW!

Chapter Exam Target Date: Dec 9th

NB: When working through the assigned exercises and activities, you should check ALL your answers using the answer guide at the back of the book. Do **NOT** proceed to the next set of questions until you have corrected the section you are working on. I.e.: Do not wait to correct your answers till you have finished the whole page of assigned questions. When you are stuck or not getting something, go back and **re-read** the notes and examples till you understand the concept.

Key Words: page 103. Either now or as you work through this chapter, define, illustrate or give an example of each word or idea.

Product:

Factor:

Multiple

Proper Fraction:

Improper Fraction:

Equivalent Fraction:

Reciprocal:

Mixed Number:

Quotient:

Divisor:

Dividend:

Start by taking the **Practice Test** on Pg.162. When done, calculate your %.

Topic: 3.1 Using Models to Multiply Fractions and Whole Numbers

Read and study pages: 104 – 107

Give special attention to: the idea that multiplying is just the short-cut for repeated addition – of a series of equal amounts.

Like: 3+3+3+3+3+3 is 6 repeats of adding in 3's. – adding or multiplying – both amount to 18.

Likewise, ⅓+⅓+⅓+⅓+⅓+⅓+⅓ is 7 (count 'em), 7 repeats of adding in amounts of ⅓. Since you are adding it to itself 7 times, it becomes 7 *⅓, and again, either way you do it, you get 7/3!

You must be able to do this using number lines, and you must be able to do this using a math algorithm.

Here's the algorithm: it is simply $\frac{\text{numerator X numerator}}{\text{denominator X denominator}}$

I call it hop scotch or leap frog.

GRID PAPER WILL BE VERY USEFUL FOR MAKING NUMBER LINES. MAKE SURE YOU HAVE SOME HANDY.

Practice Q's: Pg. 108-109: Do #'s 5 to 17.

Assessment Focus Q's: Pg. 109: Do two of #'s 18 to 20 and one of #'s 21 to 22.

Topic: 3.2 Using Models to Multiply Fractions

Read and study pages: 110-112

Give special attention to: Q#5 below – and remember, "of " means X.

Practice Q's: Pg. 113-114: Do #'s 5-11

IMPORTANT: Try very hard to get #5 above. Then all the rest will be easy.

FRACTION LOGIC:

1. **If you take a fraction of something, you will have an amount that is LESS than what you started with, Ie: "Only a fraction of the class has blue eyes." – This would mean that LESS than the total students in the class are blue-eyed. So, if there are32 students in the class, and only a half (a fraction) of them have blue eyes, then only 16 students are blue-eyed. That is less than what you started with (32). In math terms, ½ X 32 = 16. (half of 32 is 16)**
2. **If you take a fraction of a fraction however, you will end up with an amount that is less than EITHER of the amounts you started with. So… if ¼ of those blue-eyed students (½of the class) also wear glasses, then ¼ of the ½ would mean that only 4 students wear glasses. .. or ¼ X 16 = 4 (a quarter of 16 is 4)**
3. **Now, the short-cut method to find out how many students wear glasses is just to take ¼ of the ½ of the 32 you started with: like…**

¼ x ½ = ⅛ and ⅛ x 32 = 4 (same answer)

Remember that the point in #2 was to realize that <u>a fraction of a fraction</u> would give a product that was LESS than either number you started with. Thus, in the multiplication ¼ x ½ = ⅛ , the answer (⅛) is LESS than EITHER of the two numbers you multiplied to start with!

THIS CONCEPT IS FUNDAMENTAL TO YOUR ABILITY TO ESTIMATE THE ANSWER WHEN YOU MULTIPLY TWO FRACTIONS

Assessment Focus Pg. 114 - Do Q's12, 13a, b &c.

Topic: **3.3 Multiplying fractions.**

Read and study pages: 115-118

Give special attention to: common factors, multiples, equivalent fractions,

Practice Apply and Assessment Focus Q's: Pg. 118 +: #'s 4 – 6 -#6
STRATEGY: think of the 3 tenths as 30% and think of the 5 eights as about half, or 50%

Then do half of #'s 7 & 8.

Do #12i and 12iv;

Lastly choose 5 of Q's 9 to 21.

Topic: 3.4 Multiplying Mixed Numbers

Read and study pages: 121-124

Give special attention to: the AREA models

Practice Q's: Pg.125-126, 4-12. NB Choose half of the items in multi-part questions.

Assessment Focus Pg. 126 - Q's: 13 -19: choose 3.

Mid Unit Review, pg 128 **(Getting ready for your Mid Unit Quiz)**

Topic: 3.5 Dividing Whole Numbers and Fractions

Read and study pages: 129-132

Give special attention to: SHARING AND GROUPING, pg. 129, and Ex. 2 pg. 132.

Practice Q's: Pg. 132 Do Q's 3-8, and 9a&c or 9b&d.

Then Q's 10-15: Pg. 133-134: Choose 2 odds and one even, or vice versa.

Topic: 3.6 Dividing Fractions

Read and study pages:135-138

Give special attention to: CONNECT, pg. 136 & 137, and the info in the yellow boxes.

Practice Q's: Pg.139: Do Q's 4-12, then 13a AND b.

Topic: 3.7 Dividing Mixed Numbers

Read and study pages: 141-144

Give special attention to: the examples

Practice Q's: Pg.145-146, Do Q's 4 – 13 (do only half of the multi-part items)

Then do # 14.

Topic: 3.8 Solving Problems With Fractions

Read and study pages: 147-150

Give special attention to: the examples

Practice Q's: Pg.151-152, Do Q's 3 – 5 (do only half of the multi-part items)

Then choose 3 of the rest.

Topic: 3.9 Order of Operations With Fractions

Read and study pages: 153-154

Give special attention to: the examples

Practice Q's: Pg.155, Do Q's 4 –12 (do only half of the multi-part items)

Unit Review, pg158-161

Finish by taking the **Practice Test** on Pg. 162. When done, calculate your %.

Now you are ready for your Chapter Test.