Math 6 2.0

Class notes

### DIVISION BY FRACTIONS USING AN AREA MODEL #12

Fractions can be divided using a rectangular area model. The division problem $8 \div 2$ means, "In 8, how many groups of 2 are there?" Similarly, $\frac{1}{2} \div \frac{1}{4}$ means, "In $\frac{1}{2}$, how many fourths are there?"
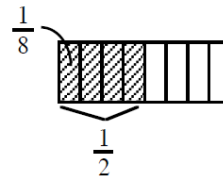

Example 1

Use the rectangular model to divide: $\frac{1}{2} \div \frac{1}{8}$, that is, "How many eighths are in $\frac{1}{2}$?"

Step 1: Using the rectangle, we first divide it into 2 equal pieces. Each piece represents $\frac{1}{2}$. Shade $\frac{1}{2}$ of it.
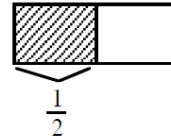
Step 2: Then divide the original rectangle into eight equal pieces. Each section represents $\frac{1}{8}$. In the shaded section, $\frac{1}{2}$, there are 4 eighths.

Step 3: Write the equation.
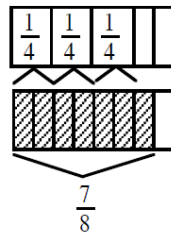
$$\frac{1}{2} \div \frac{1}{8} = 4$$

Example 2

In $\frac{7}{8}$, how many $\frac{1}{4}$'s are there?

That is, $\frac{7}{8} \div \frac{1}{4} = ?$

Start with $\frac{7}{8}$.

In $\frac{7}{8}$ there are three full $\frac{1}{4}$'s shaded and half of another one (that is, half of one-fourth).

So: $\frac{7}{8} \div \frac{1}{4} = 3\frac{1}{2}$
(three and one-half fourths)

http://www.cpm.org/pdfs/skillBuilders/MC/MC_Division_of_Fractions.pdf