

Lesson Title: Problem solving with Fractions, Decimals, Percents		Pre 2.6
Utah State Core Standard and Indicators Pre-Algebra Standards 1, 3 Process Standards 1-5		
Summary		
In the first activity, students convert fractions to percentages and then find a percentages of given quantities. In the second activity, students build rectangular areas (using color tiles or graph paper) to visualize and find a percentage of the whole and then the whole from the percentage.		
<p style="text-align: center;">Enduring Understanding</p> <p>We use fraction, decimal, and percent equivalents to describe most everything in the world. We must choose which representation suits our purposes best and enables us to operate (+, -, x, ÷) on the numbers most effectively.</p>	<p style="text-align: center;">Essential Questions</p> <p>How do you represent parts of a whole using fraction and percentage equivalents?</p>	
<p style="text-align: center;">Skill Focus</p> <ul style="list-style-type: none"> • Finding a fractional part • Shifting between fractional and percentage values 	<p style="text-align: center;">Vocabulary Focus</p>	
Assessment		
Materials: Color tiles and/or graph paper		
Launch		
Explore		
Summarize		
Apply		

Directions:

Tiles and Percentages special copying instructions! In order to make it easy for students to record the rectangles, be certain to run the worksheets off on grid paper. Run the grid paper first—we recommend fairly small grid paper—quarter inch or less. Then run the assignment off over the top of the grid paper.

Pre 2.6a

Charlie's Almonds

You're with Charlie in the Chocolate Factory. To win the prize of a huge chocolate bar for your school, you must figure out how many almonds are in fractional parts of these huge chocolate bars.

BAR ONE

Number of Almonds	1/4 or ___%	2/4 or 1/2 or ___ %	3/4 or ___%
60	_____	_____	_____
84	_____	_____	_____
120	_____	_____	_____
136	_____	_____	_____

BAR TWO

Number of Almonds	1/5 or ___%	2/5 or ___%	3/5 or ___%	4/5 or ___%
60	_____	_____	_____	_____
75	_____	_____	_____	_____
125	_____	_____	_____	_____
190	_____	_____	_____	_____

BAR THREE

Number of Almonds	1/8 or ___%	3/8 or ___%	5/8 or ___%	7/8 or ___%
64	_____	_____	_____	_____
88	_____	_____	_____	_____
120	_____	_____	_____	_____
152	_____	_____	_____	_____

BAR FOUR

Number of Almonds	1/10 or ___%	3/10 or ___%	7/10 or ___%	9/10 or ___%
60	_____	_____	_____	_____
80	_____	_____	_____	_____
125	_____	_____	_____	_____
190	_____	_____	_____	_____

2.6b**Tiles and Percentages**

You're tiling the kitchen floor using bargain tiles, leftovers of different colors. You must come up with different possibilities.

1. Take 20 tiles and build different rectangles that meet these percentages.

$$25\% \text{ red} = \underline{\quad} \text{ (fraction)} = \underline{\quad} \text{ tiles}$$

$$20\% \text{ blue} = \underline{\quad} \text{ (fraction)} = \underline{\quad} \text{ tiles}$$

$$15\% \text{ green} = \underline{\quad} \text{ (fraction)} = \underline{\quad} \text{ tiles}$$

$$40\% \text{ yellow} = \underline{\quad} \text{ (fraction)} = \underline{\quad} \text{ tiles}$$

Draw and color the different possible rectangles below

2. Take 40 tiles and build different rectangles that meet these parts.

$$\frac{3}{8} \text{ red} = \underline{\quad} \text{ (percent)} = \underline{\quad} \text{ tiles}$$

$$25\% \text{ blue} = \underline{\quad} \text{ (fraction)} = \underline{\quad} \text{ tiles}$$

$$\frac{2}{5} \text{ green} = \underline{\quad} \text{ (percent)} = \underline{\quad} \text{ tiles}$$

$$\frac{1}{10} \text{ yellow} = \underline{\quad} \text{ (percent)} = \underline{\quad} \text{ tiles}$$

$$\underline{\quad} = \underline{\quad} \text{ (} \underline{\quad} \text{)} = \underline{\quad} \text{ tiles}$$

3. Design your own tile pattern below. Then show the color values.

Total tiles used. _____

_____ = _____ = _____ tiles

_____ = _____ = _____ tiles

_____ = _____ = _____ tiles

_____ = _____ = _____ tiles

Given 5 red tiles, build a rectangle so that the 5 red are _____