

# Numerator, Denominator, and Unit

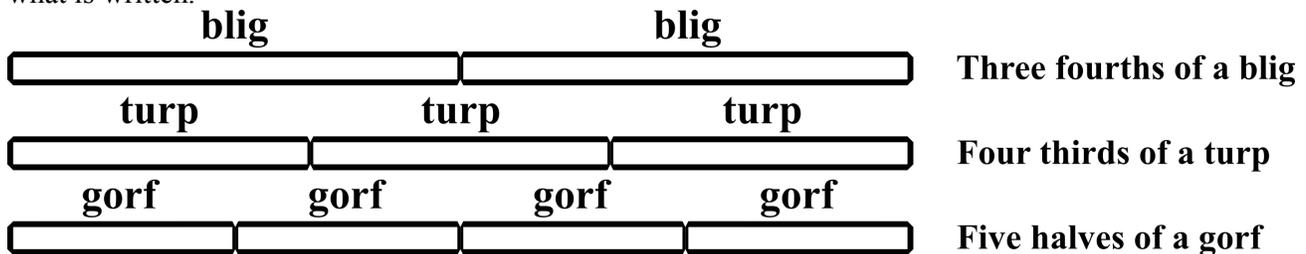
Tuesday 12/16/08

Name:  
Homeroom:  
Mr. Z.'s Science Class  
12/16/08

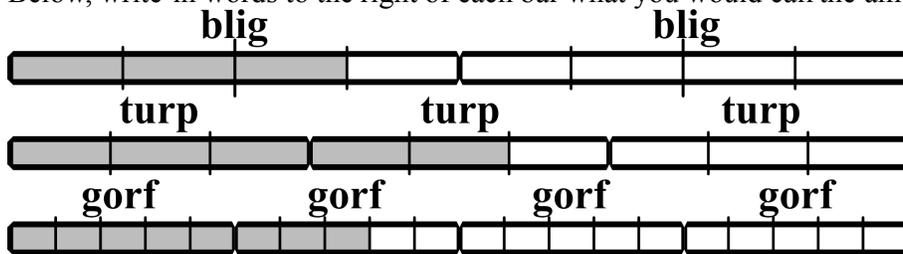
## Do-now: Fraction Bars

If I split up a unit into parts, and then fill up some number of those parts, I can express that measurement as a fraction. So, for example, "three quarters of a cup" just means that I split a cup into four equal parts, and I need to fill three of them.

1. Below, first split up the bar into the right kind of pieces, then fill in the appropriate number of them, based on what is written.



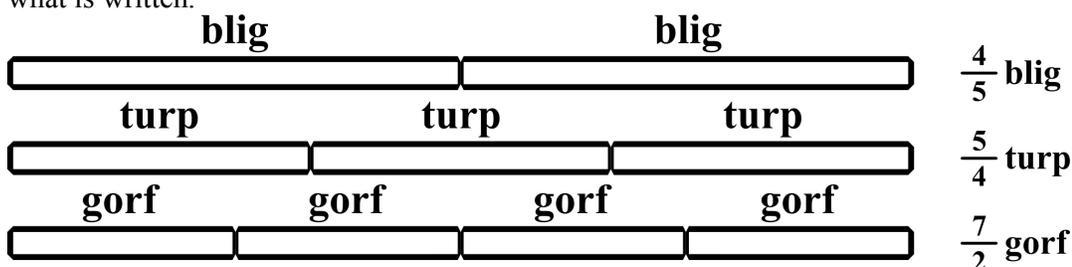
2. Below, write in words to the right of each bar what you would call the amount filled in.



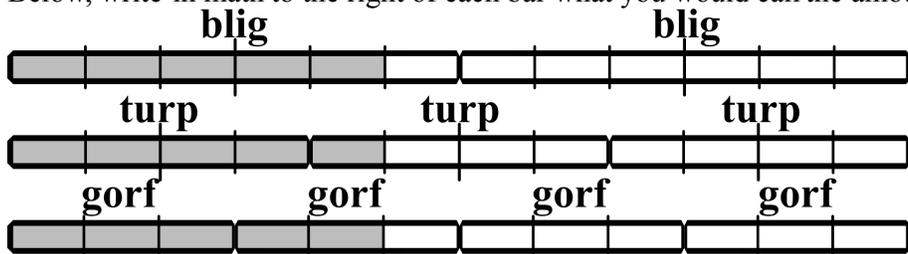
## Writing fractions mathematically

When writing a fraction mathematically, the top of the fraction tells me how many pieces are filled, and the bottom tells me how many pieces each unit was split into. So, for example, "three quarters of a cup" is written as " $\frac{3}{4}$  cup."

3. a) How would you write "Five halves of a pint" in math?
- b) How would you write "Three sevenths of a gallon" in math?
4. a) How would you say " $\frac{5}{6}$  cup" in words?
- b) How would you say " $\frac{10}{3}$  quart" in words?
5. Below, first split up the bar into the right kind of pieces, then fill in the appropriate number of them, based on what is written.

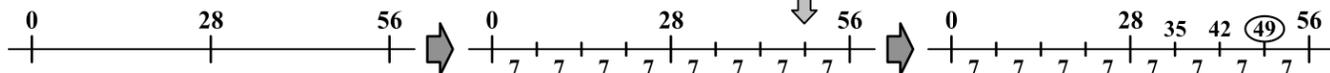


6. Below, write in math to the right of each bar what you would call the amount filled in.



### Fractions on a number line

When I am drawing a fraction of some number on the number line, I start out doing something we have done before: drawing multiples of the unit, and splitting the units up into the right kind of parts. Then I do a new step: I have to count forward the right number of spaces and find the value of that mark.



So, for example, here I am trying to find seven fourths of twenty eight. I first draw multiples of 28. Then, I break each into fourths. I identify the mark I'm trying to get. Then, I count up to figure out what value that mark has.

7. Below, draw a number line showing me five fourths of forty. *Follow these steps:*

- a) Draw a number line starting at 0 and counting up in multiples of 40. Do at least the first two.
- b) Break each unit into four parts.
- c) From zero, count forward five spaces and put an arrow at that mark
- d) Figure out what number goes at that mark.

8. Below, draw me a number line answering the question: "What is three fifths of sixty?"

9. Below, draw me a number line answering the question: "What is seven thirds of ninety?"

10. **Challenge:** Below, draw me **two** number lines to answer the question: "What is five halves of four fifths of forty five?" The first number line will let you figure out what you will be finding five halves of on the second number line.