Fractions (day 1)

$\frac{1}{8}$

top → numerator shaded

bottom → denominator all pieces
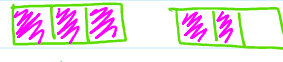
Fractions show part of a whole

Proper fraction has numerator < denom.
ex: $\frac{1}{8}$

Improper fraction has num > den
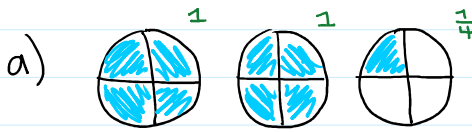
ex: $\frac{5}{3}$ shaded parts

$\downarrow$ $\downarrow$
1 whole   2/3   → $1\frac{2}{3}$ Mixed / Proper

What does this show?

a)
1   1 $\frac{1}{4}$

$\downarrow$
shaded ⇒ numerator

ut in 4 parts ⇒ denominator =

Improper $\frac{9}{4}$ Proper $2\frac{1}{4}$
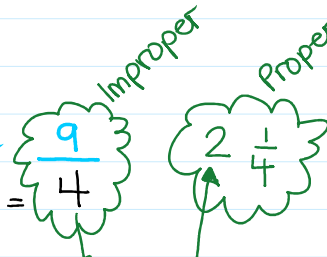
How many 4's go into 9?

b)
FULL   Part

$\downarrow$
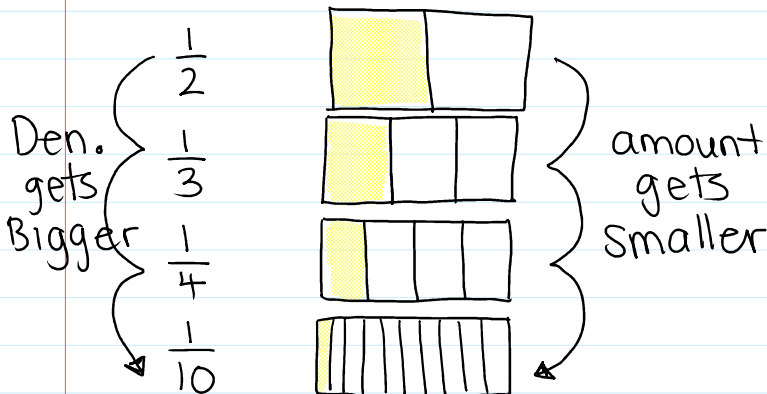6 pieces   11 shaded
6 = denom.   11 = num
$\frac{6}{6}$ = 1 whole $\frac{5}{6}$

Improper = $\frac{11}{6}$

Proper = $1\frac{5}{6}$

Unit Fractions always has numerator = 1

Den. gets Bigger
$\frac{1}{2}$
$\frac{1}{3}$
$\frac{1}{4}$
$\frac{1}{10}$

amount gets smaller

ex: $\frac{1}{5} > \frac{1}{8}$

$\frac{1}{10}$
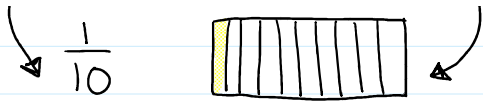
Multiples: 2 → 2 4 6 8 10 ....
            3 → 3 6 9 12 15 ....
            4 → 4 8 12 16 20 ....

Lowest Common Multiple ↗ always more! is a value that is a multiple of 2 or more numbers. (LCM/LCD)

ex: find LCM of:

   a) 3 and 8 = 24   b) 6 and 9 = 18

   3: 3 6 9 12 15 18 21 (24)...   6: 6 12 (18) 24 30....
   8: 8 16 (24) 32   9: 9 (18) 27...

We use our knowledge of LCM to create LCD (Lowest common **Denominators**) on fractions. This does NOT change their value. We will be making EQUIVALENT Fractions.

ex: $\frac{1}{2} = \frac{5}{10} = \frac{2}{4} = \frac{30}{60}$
     (×5)   (×2)   (×30)

Multiply BOTH num and Den by the SAME value!

ex: find the LCD and equivalent fractions
          ↖ denominator!

a) $\frac{2^{×4}}{5_{×4}}$ and $\frac{3^{×5}}{4_{×5}}$ ⟹ $\frac{8}{20}$ and $\frac{15}{20}$ ← make the "new" denominator the LCD

   5,10,15,20   4,8,12,16,20
       LCD = 20!

b) $\frac{1^{×2}}{6_{×2}}$ and $\frac{3^{×3}}{4_{×3}}$ ⟹ $\frac{2}{12}$ and $\frac{9}{12}$

   6,12,18,24,30   4,8,12,16,20,24

Homework: # 1, 4, 5, 7, 9, 12, 14, 15, 17