

INTRODUCTION TO PATTERN BLOCKS WORKSHEET

1. Let a red trapezoid block = 1
 - a. A green triangle = _____
 - b. A blue rhombus = _____
 - c. A yellow hexagon = _____
 - d. How would you represent $2\frac{2}{3}$?
 - e. How would you represent $\frac{4}{3}$? Is there another way to represent $\frac{4}{3}$?

2. Let a yellow hexagon block = 1
 - a. A green triangle = _____
 - b. A blue rhombus = _____
 - c. A red trapezoid = _____
 - d. How would you represent $\frac{2}{3}$?
 - e. How would you represent $\frac{5}{6}$?

3. Let two yellow hexagon blocks = 1
 - a. A green triangle = _____
 - b. A blue rhombus = _____
 - c. A red trapezoid = _____
 - d. A yellow hexagon = _____
 - e. How would you represent $1\frac{3}{4}$?
 - f. How would you represent $\frac{7}{12}$? How could you represent $\frac{7}{12}$ with the least number of blocks?

WHICH IS BIGGER?

Determine which of the following pairs of fractions is bigger and why, using number sense.

1. FRACTIONS THAT HAVE THE SAME DENOMINATOR: You have the same sized pieces, but different amounts of those pieces.

$$2/7 \text{ or } 3/7$$

$$11/24 \text{ or } 7/24$$

2. FRACTIONS THAT HAVE THE SAME NUMERATOR: You have the same number of pieces, but the pieces are different sizes.

$$1/12 \text{ or } 1/14$$

$$3/5 \text{ or } 3/7$$

3. SAME NUMBER OF MISSING PIECES: You have the same number of pieces missing from your whole, but the pieces are different sizes.

$$7/8 \text{ or } 8/9$$

$$13/15 \text{ or } 11/13$$

ORDERING FRACTIONS WORKSHEET

Think about and inspect the following fractions; are they close to 0, close to $\frac{1}{2}$ or close to 1? Are they bigger than 0, bigger or smaller than $\frac{1}{2}$, bigger or smaller than 1, and by how much?

$\frac{11}{12}$: this is a fraction that is close to 1, it is smaller than 1 by $\frac{1}{12}$.

$\frac{5}{9}$: this is a fraction that is close to $\frac{1}{2}$, it is bigger than $\frac{1}{2}$ by $\frac{1}{18}$.

$\frac{5}{11}$: this is a fraction that is close to $\frac{1}{2}$, it is smaller than $\frac{1}{2}$ by $\frac{1}{22}$.

$\frac{2}{35}$: this is a fraction that is close to 0, it is bigger by $\frac{2}{35}$.

Put the following ten fractions in order from smallest to largest using this inspection method (DO NOT find a common denominator). Determine which convenient number each fraction is close to, and decide if it is larger or smaller and by how much. Then use these comparisons to put the fractions in order

$\frac{7}{12}$ _____

$\frac{3}{10}$ _____

$\frac{1}{4}$ _____

$\frac{1}{35}$ _____

$\frac{1}{3}$ _____

$\frac{7}{6}$ _____

$\frac{99}{100}$ _____

$\frac{3}{8}$ _____

$\frac{4}{7}$ _____

$\frac{4}{5}$ _____

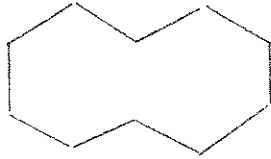
ORDER:

Fractions Using Pattern Blocks

1. Use pattern blocks to solve the following problems. Write your answers in simplest form, that is, the number represented by the least number of blocks of the same color.

Let

1 =



A. $\frac{1}{2} + \frac{3}{12} =$

B. $\frac{3}{4} + \frac{1}{2} + \frac{1}{6} =$

C. $\frac{3}{4} - \frac{2}{3} =$

D. $\frac{5}{6} - \frac{3}{4} =$

E. $\frac{2}{3} + \frac{1}{2} =$

F. $\frac{3}{4} + \frac{2}{3} + \frac{1}{2} =$

G. $1 \frac{1}{2} + \frac{2}{3} =$

H. $1 \frac{5}{12} - \frac{5}{6} =$



Fractions

...More Adding and Subtracting

II. Unlike Denominators

$$\frac{7}{9} - \frac{1}{4} = \frac{28}{36} - \frac{9}{36} = \frac{19}{36}$$



36 is the
least common
multiple

1. $\frac{2}{3} + \frac{5}{9}$

2. $\frac{4}{5} - \frac{3}{4}$

3. $\frac{5}{6} + \frac{7}{12}$

4. $\frac{11}{15} - \frac{2}{5}$

5. $\frac{11}{12} + \frac{5}{8}$

6. $\frac{1}{2} - \frac{4}{9}$

7. $\frac{13}{36} + \frac{5}{12}$

8. $\frac{7}{8} - \frac{3}{10}$



Fractions

Multiplying Fractions

$$2\frac{1}{4} \cdot 1\frac{2}{3} = \frac{9}{4} \cdot \frac{5}{3} = \frac{\overset{3}{\cancel{9}}}{4} \cdot \frac{5}{\underset{1}{\cancel{3}}} = \frac{15}{4} \text{ or } 3\frac{3}{4}$$

Diagram illustrating the multiplication of mixed numbers. The first mixed number, $2\frac{1}{4}$, is converted to the improper fraction $\frac{9}{4}$. The second mixed number, $1\frac{2}{3}$, is converted to the improper fraction $\frac{5}{3}$. The two fractions are then multiplied: $\frac{9}{4} \cdot \frac{5}{3}$. The common factor of 3 in the numerator and denominator is canceled out, resulting in $\frac{3}{4} \cdot \frac{5}{1}$. The final result is $\frac{15}{4}$, which is written as the mixed number $3\frac{3}{4}$. Arrows labeled "rewrite" indicate the conversion of mixed numbers to improper fractions.

1. $\frac{1}{2} \cdot \frac{5}{6}$

2. $3 \cdot \frac{1}{2}$

3. $\frac{2}{5} \cdot \frac{1}{3}$

4. $\frac{16}{5} \cdot \frac{25}{27}$

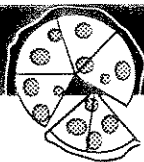
5. $\frac{8}{21} \cdot 2\frac{7}{16}$

6. $1\frac{5}{7} \cdot 2\frac{1}{4}$

7. $5\frac{7}{8} \cdot 4$

8. $\frac{5}{7} \cdot \frac{7}{5}$

9. $3\frac{2}{3} \cdot \frac{17}{22}$



Fractions

Dividing Fractions

invert and multiply

$$1\frac{1}{2} \div 3\frac{3}{7} = \frac{3}{2} \div \frac{24}{7} = \frac{3}{2} \cdot \frac{7}{24} = \frac{3}{2} \cdot \frac{7}{8} = \frac{7}{16}$$

rewrite

1. $\frac{3}{7} \div \frac{1}{2}$

2. $\frac{17}{9} \div \frac{8}{9}$

3. $6\frac{2}{3} \div 5$

4. $1\frac{7}{9} \div 4\frac{2}{9}$

5. $\frac{15}{4} \div \frac{5}{14}$

6. $\frac{11}{12} \div \frac{13}{8}$

7. $4 \div 4\frac{2}{5}$

8. $3\frac{1}{4} \div 4\frac{3}{8}$

9. $\frac{6}{15} \div \frac{9}{10}$