McGraw-Hill My Math

Enrich

Chapter 8

Grade 4

Lesson 1   Enrich

Factors and Multiples

Find the greatest common factor for each number pair.

1. 18 and 24 _____   **2.** 20 and 30 _____

3. 12 and 14 _____   **4.** 35 and 45 _____

5. 36 and 54 _____   **6.** 42 and 90 _____

7. 51 and 85 _____   **8.** 44 and 66 _____

Find the least common multiple for each number pair.

9. 16 and 24 _____   **10.** 20 and 25 _____

11. 8 and 10 _____   **12.** 15 and 20 _____

13. 6 and 9 _____   **14.** 10 and 12 _____

15. 14 and 21 _____   **16.** 21 and 35 _____

Lesson 2   Enrich

Prime and Composite Numbers

"Air" + "Toss the Knees" That's how to pronounce the name of an ancient Greek thinker — Eratosthenes! He figured out a good way to sort prime numbers and composite numbers. Follow these directions to try out his method.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

Directions

1. Cross out 1.

2. Circle the number 2, and then cross out every multiple of 2.

3. Circle the number 3, and then cross out every multiple of 3. (Be sure to count the numbers that are already crossed out, like 6.)

4. Notice that 4 is already crossed out.

5. Circle the number 5, and then cross out every multiple of 5.

6. Find the next number that is not crossed out – it's 7. Circle the number 7, and then cross out every multiple of 7.

7. Continue the same process until you have circled all the prime numbers and crossed out all the composite numbers.

8. List the prime numbers less than 50.

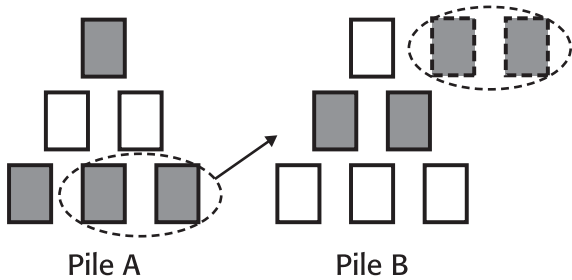   _____

   _____

If you would like to know more about Eratosthenes, you can read about him in **The Librarian Who Measured the Earth,** by Kathryn Laskey.

Name _____ Date _____
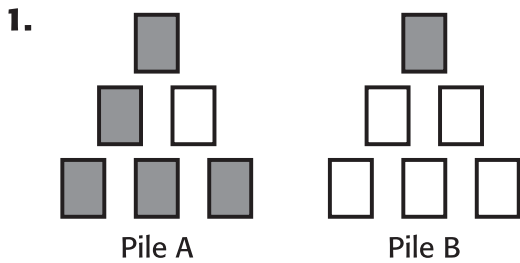
Lesson 4   Enrich

Equivalent Fractions

How many gray cards must you move from pile A (leaving the white cards where they are) to pile B, so that the fractional part of gray cards is the same for both piles?


Pile A   Pile B

If you move 2 gray cards from pile A to pile B, the fractional part of gray cards in pile A is $\frac{2}{4}$. The fractional part in pile B becomes $\frac{4}{8}$.

1.

Pile A   Pile B

1. How many gray cards did you move to pile B? _____

   a. What fractional part of gray cards is pile A? _____

   b. What fractional part of gray cards is pile B? _____

2.

Pile A   Pile B
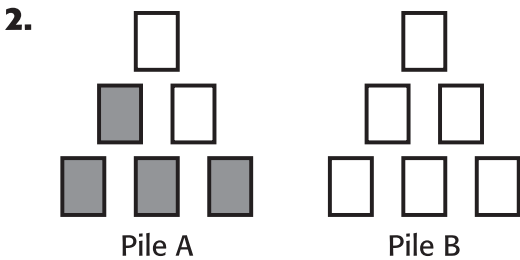
2. How many gray cards did you move to pile B? _____

   a. What fractional part of gray cards is pile A? _____

   b. What fractional part of gray cards is pile B? _____

3.

Pile A   Pile B
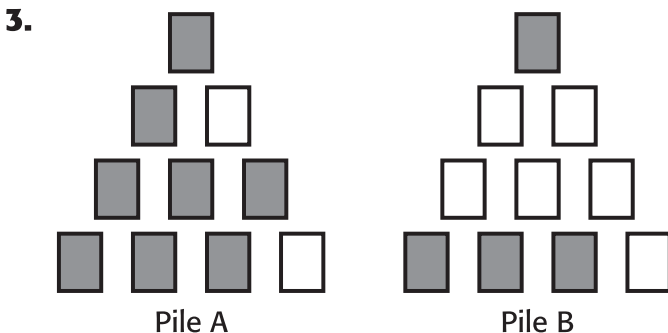
3. How many gray cards did you move to pile B? _____

   a. What fractional part of gray cards is pile A? _____

   b. What fractional part of gray cards is pile B? _____

Name _____ Date _____

Lesson 5   Enrich

Simplest Form

Look at the fractions in each square. Cross out the fraction that does not belong. Then write a fraction that does belong.

1.

$\frac{3}{8}$	$\frac{5}{8}$
$\frac{6}{7}$	$\frac{7}{8}$

_____

2.

$\frac{2}{8}$	$\frac{3}{12}$
$\frac{4}{16}$	$\frac{5}{25}$

_____

3.

$\frac{5}{9}$	$\frac{3}{5}$
$\frac{5}{12}$	$\frac{5}{6}$

_____

4.

$\frac{1}{3}$	$\frac{2}{7}$
$\frac{5}{6}$	$1\frac{1}{2}$

_____

5.

$\frac{2}{3}$	$\frac{6}{9}$
$\frac{4}{7}$	$\frac{8}{12}$

_____

6.

$\frac{2}{3}$	$\frac{5}{5}$
$\frac{8}{8}$	$\frac{1}{1}$

_____

7.

$\frac{1}{2}$	$\frac{5}{9}$
$\frac{4}{8}$	$\frac{3}{6}$

_____

8.

$\frac{6}{8}$	$\frac{9}{12}$
$\frac{10}{16}$	$\frac{3}{4}$

_____

9.

$\frac{1}{3}$	$\frac{3}{7}$
$\frac{4}{6}$	$\frac{5}{8}$

_____

Cross out each fraction in simplest form and the letter below it.

$\frac{1}{3}$	$\frac{4}{6}$	$\frac{3}{7}$	$\frac{6}{9}$	$\frac{8}{10}$	$\frac{5}{8}$	$\frac{3}{9}$	$\frac{10}{20}$	$\frac{6}{13}$	$\frac{2}{12}$	$\frac{8}{16}$	$\frac{5}{6}$	$\frac{9}{12}$	$\frac{15}{30}$	$\frac{8}{15}$
B	E	N	X	C	K	E	L	P	L	E	T	N	T	Y

Write the letters that are left.

_____ _____ _____ _____ _____ _____ _____ _____ _____

Lesson 6   Enrich

Compare and Order Fractions

Use only the numbers 1, 2, 3, 4 and 5 to fill in as many circles as you can to make each number sentence true.

1. $\dfrac{\bigcirc}{\bigcirc} < \dfrac{\bigcirc}{\bigcirc}$

2. $\dfrac{\bigcirc}{\bigcirc} > \dfrac{\bigcirc}{\bigcirc}$

3. $\dfrac{\bigcirc}{\bigcirc} = \dfrac{\bigcirc}{\bigcirc}$

4. $\dfrac{\bigcirc}{\bigcirc} > \dfrac{\bigcirc}{\bigcirc}$

5. $\dfrac{\bigcirc}{\bigcirc} = \dfrac{\bigcirc}{\bigcirc}$

6. $\dfrac{\bigcirc}{\bigcirc} < \dfrac{\bigcirc}{\bigcirc}$

Name _____ Date _____

Lesson 7   Enrich

Use Benchmark Fractions to Compare and Order

Order each set of fractions from *least* to *greatest*.

1. $\dfrac{4}{6}, \dfrac{1}{3}, \dfrac{5}{6}$ _____

2. $\dfrac{2}{6}, \dfrac{3}{5}, \dfrac{1}{4}$ _____

3. $\dfrac{2}{5}, \dfrac{3}{10}, \dfrac{1}{4}$ _____

4. $\dfrac{6}{7}, \dfrac{5}{9}, \dfrac{8}{14}$ _____

5. $\dfrac{5}{8}, \dfrac{6}{10}, \dfrac{4}{7}$ _____

List the *greatest* fraction from each exercise above.

_____

Now order these fractions from *least* to *greatest*.

_____

Lesson 8   Enrich

Problem Solving: Use Logical Reasoning

Lee took a total of 45 photos of his best friends. There are 29 photos of Jared and 27 photos of Rondell. How many photos are of both Jared and Rondell?

(*Hint:* Use a Venn diagram to help you solve the problem.)

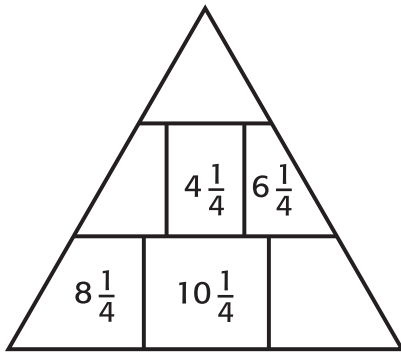Make up your own logic problem for a friend to solve.

_____

_____

_____

_____

Lesson 9   Enrich

Mixed Numbers

Each block in the bottom row of the pyramid follows a pattern that leads to the next block. Find the missing numbers in the patterns. Then add them together to unlock the top number of the pyramid. Under each pyramid, write an addition sentence to show how you unlocked the pyramid.
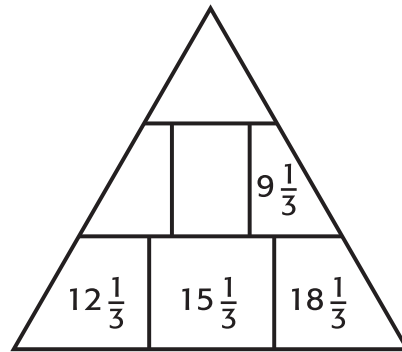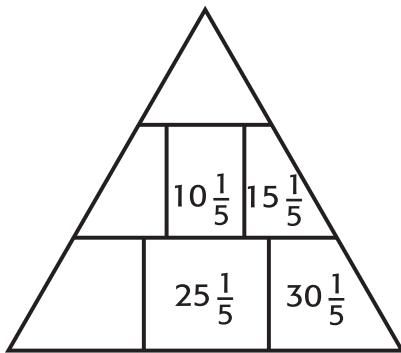
1.

$4\frac{1}{4}$ $6\frac{1}{4}$
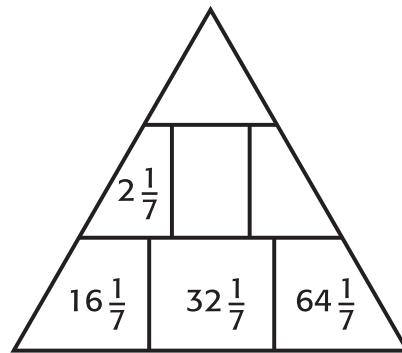
$8\frac{1}{4}$ $10\frac{1}{4}$

_____

_____

2.

$9\frac{1}{3}$

$12\frac{1}{3}$ $15\frac{1}{3}$ $18\frac{1}{3}$

_____

_____

3.

$10\frac{1}{5}$ $15\frac{1}{5}$

$25\frac{1}{5}$ $30\frac{1}{5}$

_____

_____

4.

$2\frac{1}{7}$

$16\frac{1}{7}$ $32\frac{1}{7}$ $64\frac{1}{7}$

_____

_____

5. Create your own pyramid for a friend to unlock.

Name _____ Date _____

Lesson 10   Enrich

Mixed Numbers and Improper Fractions

- Mixed numbers are whole numbers and fractions.

- Improper fractions have numerators that are equal to or greater than their denominators.

1. In the space below, draw a picture of some kind of food to show that $2\frac{1}{2} = \frac{5}{2}$.

_____

_____

_____

2. In the space below, explain how you know that $\frac{20}{6} = 3\frac{1}{3}$. (You may want to use pictures or some of the terms above.)

_____

_____

_____

_____