SIXTH GRADE MATHEMATICS

CHAPTER 4A

FRACTION SENSE

TOPICS COVERED:

- Fraction Sense
- Equivalent Fractions
- Simplifying Fractions
- Least Common Multiple
- Ordering and Comparing Fractions
- Mixed Numbers and Improper Fractions

Created by Lance Mangham, 6th grade teacher, Carroll ISD

Activity 4-1: **School Funnies** Name:

Teacher: Maria, go to the map and find North America.
Maria: Here it is.
Teacher: Correct. Now class, who discovered America?
Class: Maria.

Teacher: Why are you late, Frank?
Frank: Because of the sign.
Teacher: What sign?
Frank: The one that says, "School Ahead. Go slow."

Teacher: John, why are you doing your math multiplication on the floor?
John: You told me to do it without using tables.

Teacher: Glenn, how do you spell "crocodile?"
Glenn: K-R-O-K-O-D-I-A-L
Teacher: No, that's wrong.
Glenn: Maybe it's wrong, but you asked me how I spell it.

Teacher: Donald, what is the chemical formula for water?
Donald: H I J K L M N O
Teacher: What are you talking about?
Donald: Yesterday you said it's H to O.

Teacher: Winnie, name one thing we have today that we didn't have twenty years ago.
Winnie: Me!

Teacher: Greg, who do you have to get so dirty?
Greg: Well, I'm a lot closer to the ground than you are.

Teacher: Millie, give me a sentence starting with "I".
Millie: I is…
Teacher: No, Millie…Always say, "I am."
Millie: All right…"I am the ninth letter of the alphabet."

Teacher: George Washington not only chopped down his father's cherry tree, but also admitted it. Now, Louie, do you know why his father didn't punish him?
Louie: Because George still had the ax in his hand.

Teacher: Now, Simon, do you say prayers before eating?
Simon: No, sir, I don't have to, my mom is a good cook.

Teacher: Clyde, your paper on "My Dog" is exactly the same as your brother's. Did you copy his?
Clyde: No, teacher, it is the same dog.

Teacher: Harold, what do you call a person who keeps on talking when people are no longer interested?
Harold: A teacher.

Activity 4-2: **Fraction Warm-Up Activities** Name:

1. The greatest common factor (GCF) of two numbers is 12.
   The least common multiple (LCM) of the two is 144.
   The sum of the two is less than 144.
   What is the pair of numbers?

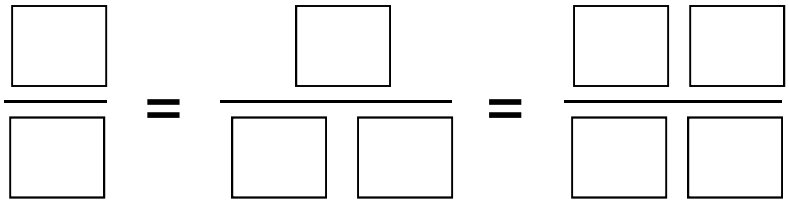
2. How do you know if a fraction is more than one-half or less than one-half?
   The group with the best (most comprehensive) overall explanation will win.

3. Name a fraction greater than three-fourths.
   Name a fraction less than one-third.
   Name a fraction that is a little more than one.
   Name a fraction between 2 and 3.
   Name a fraction near 0.
   Name a fraction that is almost one-half.
   Name a fraction between one-third and one-fourth.
   Name a fraction that is nearly 3.

4. Use each of the digits in the box just once.

1	2	3	4	5	6	7	8	9

   Arrange the digits in the boxes below to form three equivalent fractions.



5. The cafeteria decided to give away three pizzas.
   7 girls shared two of the pizzas and 3 boys shared the other pizza.
   Does each girl get the same amount as each boy?
   If each girl does not get the same amount as each boy, who gets more?
   Explain!!! Show it!!! Prove it!!!

6. How many different names can you find for one-half? Think of things such as equivalent fractions, decimals, percentages, addition, subtraction, etc. Use as many different categories as possible.

7. At the end of the fourth day of their fund-raising campaign, the teachers at Durham Intermediate had raised $270 of the $360 they needed to reach their goal. Three teachers got into a debate about how they would report their progress.
   - Ms. Moore wanted to announce that they had made it three-fourths of the way to their goal.
   - Ms. Weber said that six-eighths was a better description.
   - Mr. Underwood suggested that two-thirds was really the simplest way to describe the teachers' progress.

   Which of the three teachers do you agree with? Why? How could the teacher you agreed with prove his or her case?

8. Describe in writing and with a picture how $\frac{7}{3}$ compares with $2\frac{1}{3}$.

9. Which is larger, $\frac{7}{6}$ or $\frac{13}{12}$? **Explain it! Show it! Prove it!**

10. Find five fractions between one-fourth and one-half.

11. Work as a group to complete the fraction grid below:

Row rule: Add $\frac{3}{10}$ **Column rule**: Add $\frac{1}{5}$

	$\frac{3}{5}$	$\frac{9}{10}$		
	$\frac{4}{5}$			

12. Find three numbers for the denominators to make the sentence true:

$\frac{1}{?} - \frac{1}{?} = \frac{1}{?}$ If your group finishes early, find additional solutions.

13. An **algorithm** is a plan or a series of steps used for doing a computation. For an algorithm to be useful, each step should be clear and precise so that other people will be able to carry out the steps and get the correct answer.

    Develop an algorithm to solve the problem: $3\frac{3}{4} + 5\frac{1}{2}$

    Be sure the explain how it solve it STEP BY STEP. Also solve the problem using pictures to help explain the process.

14. An **algorithm** is a plan or a series of steps used for doing a computation. For an algorithm to be useful, each step should be clear and precise so that other people will be able to carry out the steps and get the correct answer.

    Develop an algorithm to solve the problem: $5\frac{1}{3} - 2\frac{3}{5}$

    Be sure the explain how it solve it STEP BY STEP. Also solve the problem using pictures to help explain the process.

15. What is $\frac{1}{2}$ of $\frac{3}{4}$? Think of a real-world situation in which you would need to answer the question above. Write it as a story problem. Solve the problem both mathematically and with pictures.

16. How many $\frac{1}{3}$s are there in $\frac{3}{4}$? Think of a real-world situation in which you would need to answer the question above. Write it as a story problem. Solve the problem both mathematically and with pictures.

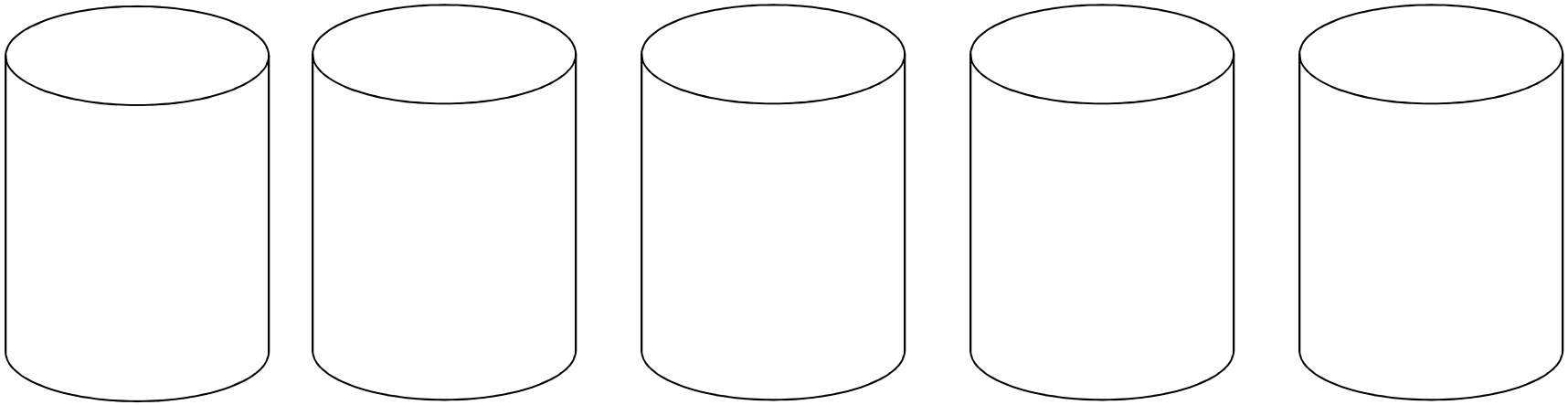
17. Investigate and explain this pattern:

$$\frac{1}{2}-\frac{1}{3}=\frac{1}{2}\bullet\frac{1}{3} \qquad \frac{1}{3}-\frac{1}{4}=\frac{1}{3}\bullet\frac{1}{4} \qquad \frac{1}{4}-\frac{1}{5}=\frac{1}{4}\bullet\frac{1}{5}$$

18. Jack has 2 packs of gum, a 5-pack of spearmint and a 5-pack of cinnamon. He chews 2 sticks of the spearmint and 1 stick of the cinnamon gum. He says he has chewed $\frac{2}{5}+\frac{1}{5}=\frac{2+1}{5+5}=\frac{3}{10}$ of the gum. Explain this way of adding fractions. Why does it work?

19. In Hilary's class, one-fifth of the boys are absent and two-fifths of the girls are absent. What fraction of the class is absent?

Activity 4-5: **Fractions in Containers** Name:



Less than one-half | One-half | Between one-half and one whole | One whole | More than one whole

Write each fraction in the container in which it belongs.
There are five fractions in each container.

$\frac{3}{6}$	$\frac{5}{5}$	$\frac{1}{4}$	$\frac{5}{2}$	$\frac{1}{5}$	$\frac{2}{3}$	$\frac{2}{2}$	$\frac{3}{5}$	$\frac{5}{7}$	$\frac{6}{3}$	$\frac{2}{5}$	$\frac{2}{4}$	$\frac{3}{3}$
$\frac{10}{20}$	$\frac{3}{10}$	$\frac{10}{5}$	$\frac{2}{6}$	$\frac{3}{2}$	$\frac{9}{10}$	$\frac{6}{5}$	$\frac{10}{10}$	$\frac{4}{8}$	$\frac{4}{5}$	$\frac{8}{8}$	$\frac{6}{12}$	

Created by Lance Mangham, 6th grade teacher, Carroll ISD

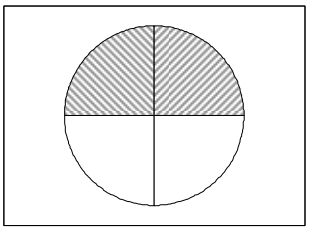
Activity 4-6: **Fraction Models** Name:

Draw three models of the fraction $\frac{5}{6}$.

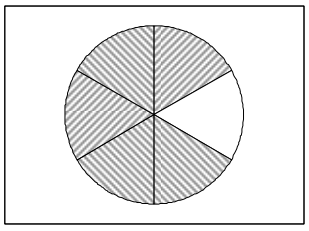
Draw three models of the fraction $\frac{3}{8}$.

Draw three models of the mixed number $1\frac{3}{4}$.

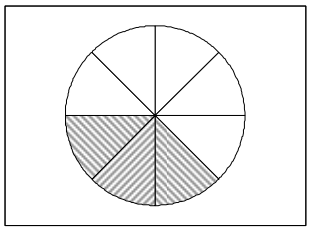
Write a fraction for the shaded part of each circle.



1. _____



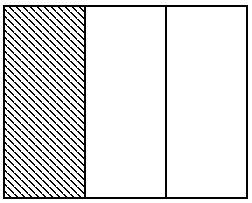
2. _____



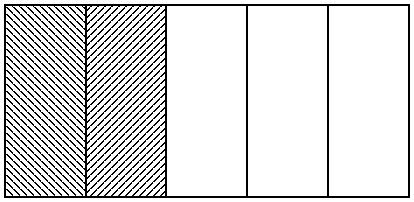
3. _____

Write a fraction for the shaded part of each rectangle.

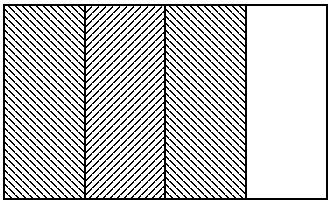
4.



_____



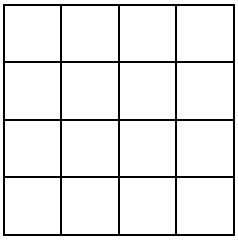
5. _____



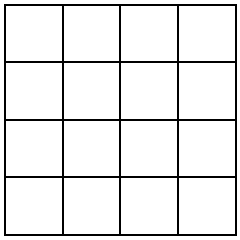
6. _____

Shade the figure to show the fraction.

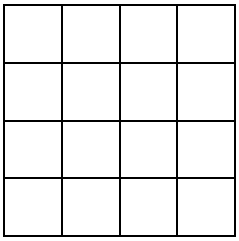
7. Shade $\frac{1}{2}$.



8. Shade $\frac{1}{4}$.



9. Shade $\frac{1}{8}$.



10. There are 12 boys and 12 girls in a class. What fraction of the class are boys? _____

11. There are 16 apples and 8 oranges. What fraction of the fruit are oranges? _____

12. There are 12 pens and 15 pencils. What fraction are pens? _____

13. There are 9 sixth graders and 12 seventh graders in the play. What fraction of the students are sixth graders? _____

14. Sean has 8 CD's and 12 DVD's. What fraction are DVD's? _____

Activity 4-8: **Fraction Sense** Name:

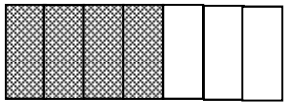
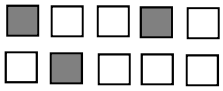
Write each fraction in words.

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

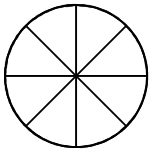
Name the numerator and denominator in each fraction.

		Numerator	**Denominator**
3.	$\frac{2}{3}$		
4.	$\frac{4}{9}$		
5.	$\frac{7}{2}$		

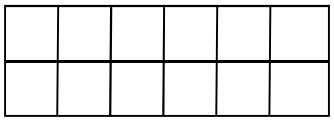
Write the fraction that is represented by the part that is shaded.

6.			7.		
8.			9.		

10. Shade $\frac{5}{8}$ of the circle.

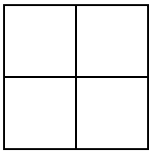


11. Shade $\frac{7}{12}$ of the rectangle.



12. Shade $\frac{5}{9}$ of the stars.

13. Shade $\frac{3}{4}$ of the square.



Write < or >.

14.	$\frac{1}{7}$ ___ $\frac{2}{7}$		**15.**	$\frac{3}{4}$ ___ $\frac{1}{4}$		**16.**	$\frac{7}{8}$ ___ $\frac{5}{8}$	
17.	$\frac{9}{16}$ ___ $\frac{8}{16}$		**18.**	$\frac{5}{9}$ ___ $\frac{8}{9}$		**19.**	$\frac{11}{12}$ ___ $\frac{9}{12}$	

Activity 4-9: **Equivalent Fractions** Name:

Complete so that the fractions are equivalent.

1.	$\frac{2}{3}=\frac{2\bullet5}{3\bullet5}=\frac{\quad}{15}$	2.	$\frac{1}{4}=\frac{1\bullet3}{4\bullet3}=\frac{3}{\quad}$	3.	$\frac{3}{7}=\frac{3\bullet8}{7\bullet8}=\frac{\quad}{56}$
4.	$\frac{5}{8}=\frac{5\bullet4}{8\bullet4}=\frac{20}{\quad}$	5.	$\frac{1}{2}=\frac{1\bullet15}{2\bullet15}=\frac{15}{\quad}$	6.	$\frac{4}{9}=\frac{4\bullet9}{9\bullet9}=\frac{\quad}{81}$

Complete so that the fractions are equivalent.

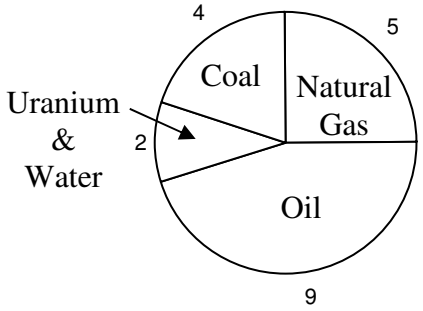
7.	$\frac{1}{2}=\frac{\quad}{6}$	8.	$\frac{4}{4}=\frac{\quad}{8}$	9.	$\frac{12}{3}=\frac{4}{\quad}$	10.	$\frac{8}{12}=\frac{\quad}{3}$
11.	$\frac{4}{5}=\frac{\quad}{10}$	12.	$\frac{8}{3}=\frac{\quad}{15}$	13.	$\frac{7}{9}=\frac{14}{\quad}$	14.	$\frac{8}{15}=\frac{24}{\quad}$
15.	$\frac{2}{4}=\frac{\quad}{2}$	16.	$\frac{12}{6}=\frac{\quad}{3}$	17.	$\frac{20}{24}=\frac{5}{\quad}$	18.	$\frac{14}{10}=\frac{7}{\quad}$
19.	$\frac{6}{12}=\frac{\quad}{2}$	20.	$\frac{15}{40}=\frac{3}{\quad}$	21.	$\frac{6}{4}=\frac{3}{\quad}$	22.	$\frac{24}{4}=\frac{6}{\quad}$
23.	$\frac{3}{4}=\frac{\quad}{100}$	24.	$\frac{3}{16}=\frac{\quad}{48}$	25.	$\frac{7}{12}=\frac{\quad}{144}$	26.	$\frac{19}{20}=\frac{\quad}{100}$

Find three fractions equivalent to each of the following.

27.	$\frac{2}{3}$		28.	$\frac{5}{4}$	
29.	$\frac{1}{7}$		30.	$\frac{4}{12}$	

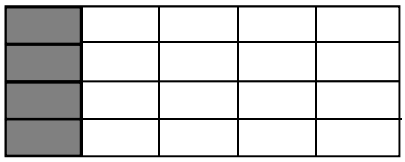
Solve. Write three equivalent fractions for each of the following. Use the circle graph.

31.	What fraction of the energy used is coal?	
32.	What fraction of the energy used is natural gas?	
33.	What fraction of the energy used is oil?	



Activity 4-10: **Simplifying Fractions** Name:

Refer to the figure at the right.



1.	What fraction does the shaded part of the figure describe?	
2.	What is the GCF of the numerator and denominator of the fraction?	
3.	Write the fraction in simplest from.	
4.	Draw a picture of the fraction in simplest form.	

Write each fraction in simplest form.

5.	$\frac{3}{9}$		6.	$\frac{2}{8}$		7.	$\frac{5}{10}$		8.	$\frac{4}{6}$	
9.	$\frac{9}{12}$		10.	$\frac{10}{25}$		11.	$\frac{3}{24}$		12.	$\frac{8}{18}$	
13.	$\frac{9}{15}$		14.	$\frac{7}{21}$		15.	$\frac{10}{12}$		16.	$\frac{4}{8}$	
17.	$\frac{10}{16}$		18.	$\frac{15}{20}$		19.	$\frac{3}{30}$		20.	$\frac{12}{14}$	
21.	$\frac{16}{20}$		22.	$\frac{6}{36}$		23.	$\frac{20}{30}$		24.	$\frac{8}{16}$	
25.	$\frac{10}{45}$		26.	$\frac{14}{20}$		27.	$\frac{15}{36}$		28.	$\frac{21}{56}$	

State whether each fraction is in simplest form. If not, write each fraction or ratio in simplest form.

29.	$\frac{9}{14}$		30.	$\frac{6}{21}$		31.	$\frac{45}{72}$		32.	$\frac{36}{45}$	
33.	$\frac{15}{60}$		34.	$\frac{70}{84}$		35.	$\frac{54}{81}$		36.	$\frac{31}{61}$	
37.	$\frac{28}{36}$		38.	$\frac{81}{90}$		39.	$\frac{8}{21}$		40.	$\frac{14}{35}$	
41.	$\frac{23}{46}$		42.	$\frac{45}{48}$		43.	$\frac{12}{27}$		44.	$\frac{17}{51}$	
45.	$\frac{57}{76}$		46.	$\frac{66}{121}$		47.	$\frac{10}{25}$		48.	$\frac{19}{29}$	
49.	$\frac{20}{28}$		50.	$\frac{49}{56}$		51.	$\frac{13}{57}$		52.	$\frac{16}{96}$	
53.	$\frac{63}{108}$		54.	$\frac{18}{31}$		55.	$\frac{49}{70}$		56.	$\frac{24}{64}$	

$\frac{4}{3}$ is an improper fraction because the numerator is larger than the denominator. These are sometimes also called top-heavy fractions. An improper fraction does not mean anything is wrong with the fraction; it simply means the fraction can be simplified if you wish.

$1\frac{1}{3}$ is a mixed number. It has both a whole number and a fraction.

Converting between mixed numbers and improper fractions:

Written as a mixed number, $2\frac{1}{3}$ bars are shaded. Written as an improper fraction $\frac{7}{3}$ bars are shaded.

$$2\frac{1}{3} = \frac{7}{3}$$

Converting from a mixed number to an improper fraction

Multiply the whole number by the denominator ($2 \bullet 3$) and then add the numerator (6+1). The answer keeps the same denominator as in the mixed number ($\frac{7}{3}$).

Converting from an improper fraction to a mixed number

Divide the denominator into the numerator ($7 \div 3$). Place any remainder over the divisor ($2\frac{1}{3}$).

Activity 4-12: **Mixed Numbers & Improper Fractions** Name:

To convert from an improper (or top-heavy) fraction to a mixed number:

1. Divide the denominator into the numerator.
2. Place the remainder over the divisor.

Example: $\frac{13}{4} = 4\overline{)13}\ 3r1 = 3\frac{1}{4}$

To convert from a mixed number to an improper fraction:

1. Multiply the whole number times the denominator.
2. Add the original numerator to your answer and this is the new numerator.
3. Place the numerator over the same denominator.

Example:

$2\frac{1}{4} \rightarrow 4 \bullet 2 + 1 \rightarrow \frac{9}{4}$

Write each improper fraction as a mixed number.

1.	$\frac{15}{2}$		2.	$\frac{8}{3}$		3.	$\frac{5}{2}$		4.	$\frac{7}{3}$	
5.	$\frac{11}{10}$		6.	$\frac{7}{6}$		7.	$\frac{9}{8}$		8.	$\frac{11}{8}$	
9.	$\frac{15}{8}$		10.	$\frac{21}{4}$		11.	$\frac{17}{3}$		12.	$\frac{17}{4}$	
13.	$\frac{17}{5}$		14.	$\frac{17}{6}$		15.	$\frac{21}{10}$		16.	$\frac{25}{4}$	
17.	$\frac{20}{3}$		18.	$\frac{15}{6}$		19.	$\frac{30}{8}$		20.	$\frac{100}{75}$	
21.	$\frac{96}{10}$		22.	$\frac{25}{2}$		23.	$\frac{36}{15}$		24.	$\frac{22}{12}$	

Write each whole or mixed number as an improper fraction.

25.	$1\frac{7}{8}$		26.	$2\frac{3}{4}$		27.	$7\frac{1}{3}$		28.	8	
29.	$3\frac{3}{4}$		30.	4		31.	$5\frac{5}{6}$		32.	$1\frac{9}{10}$	
33.	$2\frac{3}{8}$		34.	$4\frac{7}{8}$		35.	$2\frac{3}{5}$		36.	6	
37.	$3\frac{11}{12}$		38.	$2\frac{7}{12}$		39.	$5\frac{4}{15}$		40.	$2\frac{7}{15}$	
41.	$1\frac{5}{6}$		42.	$9\frac{3}{5}$		43.	$6\frac{2}{3}$		44.	$5\frac{5}{9}$	
45.	$2\frac{2}{5}$		46.	$1\frac{1}{3}$		47.	$2\frac{1}{2}$		48.	$7\frac{1}{2}$	

Activity 4-13: **Least Common Multiple** Name:

Multiple comes from "multi" meaning many and "pli" meaning fold. Fold a piece of paper in half, in half again, and again. The resulting number of pieces is eight times the number of original pieces. Remember: Every number has a multitude of multiples!

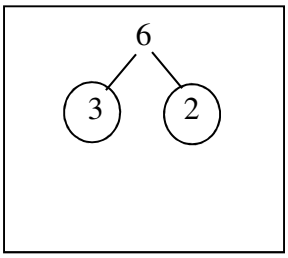
There are two ways to find the LCM. The first is to list the multiples of each number.

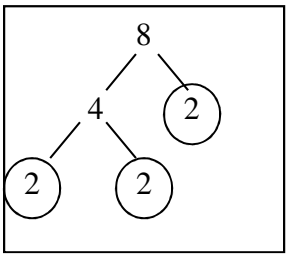
Example 1 Find the LCM of 6 and 8 by making a list.
Multiples of 6: 6, 12, 18, 24, 30…
Multiples of 8: 8, 16, 24, 32, 40…

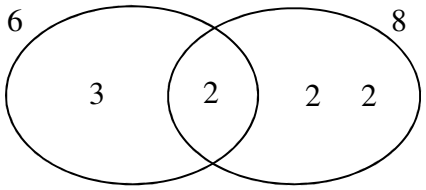
The least common multiple is 24.

The second method is to use factors trees and a Venn diagram.

Example 2 Find the LCM of 6 and 8 using factor trees.







(multiply all numbers in the diagram)
LCM = $2 \bullet 3 \bullet 2 \bullet 2 = 24$

List the first five multiples of each number.

1.	5		2.	9	
3.	11		4.	14	

Determine whether the first number is a multiple of the second number.

5.	36; 4		6.	127; 9		7.	42; 3		8.	63; 7	
9.	78; 6		10.	144; 8		11.	96; 7		12.	108; 9	

Find the LCM for each set of numbers.

13.	3, 7		14.	6, 9		15.	4, 10	
16.	12, 18		17.	8, 28		18.	6, 14	
19.	8, 13		20.	15, 18		21.	12, 14	
22.	3, 5, 12		23.	6, 16, 24		24.	12, 18, 24	
25.	16, 42		26.	2, 4, 6, 8		27.	1, 14	
28.	7, 10, 14		29.	16, 18		30.	5,6	
31.	8, 56		32.	7, 13				

Activity 4-14: **Least Common Multiple** Name:

Solve.

1.	At one store hot dogs come in packages of eight. Hot dog buns come in packages of twelve. What is the least number of packages of each type that you can buy and have no hot dogs or buns left over?	
2.	Tongue Tickler Tooth Paste comes in two sizes: 9 oz. for $0.89 12 oz. for $1.19 A. What is the LCM of 9 and 12? B. If you bought that much toothpaste in 9-oz. tubes, how much would it cost? C. If you bought that much toothpaste in 12-oz. tubes, how much would it cost? D. Which tube gives you more Tongue Tickler Toothpaste for the money?	A. B. C. D.
3.	In the school kitchen during lunch, the timer for pizza buzzes every 14 minutes; the timer for hamburger buns buzzes every 6 minutes. The two timers just buzzed together. In how many minutes will they buzz together again?	
4.	Two ships sail steadily between New York and London. One ship takes 12 days to make a round trip; the other takes 15 days. If they are both in New York today, in how many days will they both be in New York again?	
5.	The high school lunch menu repeats every 20 days; the elementary school menu repeats every 15 days. Both schools are serving sloppy joes today. In how many days will they both serve sloppy joes again?	
6.	Two neon signs are turned on at the same time. One blinks every 4 seconds; the other blinks every 6 seconds. How many times per minute do they blink on together?	
7.	Gear B has 12 teeth. Gear C has 18 teeth. How many teeth should be on gear A if each turn of gear A is to produce a whole number of turns of the shafts attached to B and C?	
8.	A company ships in two different sized boxes. One box is 5 inches long and the other is 8 inches long. What is the shortest length crate the company can use to ship its product in either sized box without having extra space?	
9.	A construction company uses 15-foot long concrete blocks for the width and 45-foot long blocks for the length of any rectangular building. What is the shortest length square building the company could construct?	
10.	On Southlake Highway there are rest stops every 50 miles. Lauren's family stops at the rest stops every 150 miles. Kyle's family stops every 250 miles. The two families began their trips from the same place. What is the shortest distance the two families must drive before they stop at the same rest stop?	
11.	Write your own word problem that involves finding the least common multiple. Provide the solution.	
12.	At a ball game every 12^{th} person in line received a free baseball card. Which person was NOT chosen to receive a free baseball card? A. 18^{th} person B. 24^{th} person C. 36^{th} person D. 60^{th} person	
13.	What group contains only numbers that are multiples of 15? A. 30, 45, 60 B. 15, 55, 60 C. 45, 50, 75 D. 60, 75, 80	

Activity 4-15: **Comparing & Ordering Fractions** Name:

To compare and order fractions use the least common denominator (LCD). The LCD is the least common multiple (LCM) of the original denominators.

Example **Order from least to greatest:** $\frac{2}{3}, \frac{5}{8}, \frac{3}{4}$

1. Find the LCD of the denominators: 3, 8, and 4. The LCD is 24.
2. Write equivalent fractions.
   $\frac{2}{3}=\frac{16}{24}$ $\frac{5}{8}=\frac{15}{24}$ $\frac{3}{4}=\frac{18}{24}$
3. Order the fractions.
   $\frac{15}{24}<\frac{16}{24}<\frac{18}{24}$

Compare the following fractions using <, >, or =.

1.	$\frac{2}{9}$ $\frac{1}{3}$	2.	$\frac{5}{6}$ $\frac{7}{8}$	3.	$\frac{7}{20}$ $\frac{3}{10}$
4.	$\frac{3}{6}$ $\frac{4}{11}$	5.	$\frac{2}{3}$ $\frac{4}{6}$	6.	$\frac{4}{8}$ $\frac{2}{8}$
7.	$\frac{3}{7}$ $\frac{5}{8}$	8.	$\frac{1}{3}$ $\frac{3}{9}$	9.	$\frac{1}{2}$ $\frac{3}{7}$
10.	$\frac{4}{5}$ $\frac{7}{9}$	11.	$\frac{2}{3}$ $\frac{7}{10}$	12.	$2\frac{5}{9}$ $2\frac{3}{5}$

Order each set of fractions from greatest to least.

13.	$\frac{3}{4}, \frac{5}{8}, \frac{1}{2}$		14.	$\frac{5}{8}, \frac{5}{6}, \frac{2}{3}$	
15.	$\frac{1}{2}, \frac{5}{12}, \frac{2}{3}$		16.	$\frac{3}{5}, \frac{2}{3}, \frac{7}{12}$	
17.	$\frac{1}{2}, \frac{3}{5}, \frac{3}{8}$		18.	$\frac{7}{8}, \frac{3}{4}, \frac{13}{16}$	
19.	$\frac{8}{9}, \frac{3}{4}, \frac{5}{6}, \frac{2}{3}$		20.	$\frac{4}{5}, \frac{13}{16}, \frac{7}{8}, \frac{31}{40}$	

Order each set of fractions from least to greatest.

21.	$\frac{9}{14}, \frac{17}{35}, \frac{1}{2}, \frac{7}{10}$		22.	$\frac{2}{3}, \frac{2}{7}, \frac{13}{14}, \frac{5}{6}$	
23.	$\frac{2}{3}, \frac{4}{5}, \frac{2}{10}, \frac{5}{7}$		24.	$\frac{23}{52}, \frac{12}{13}, \frac{7}{26}, \frac{7}{8}$	

You can also use a ruler to compare fractions in halves, fourths, eighths, and sixteenths.

Activity 4-16: **Fraction Mysteries** Name:

Use your fraction sense to solve each problem.

1.	Name a fraction between $\frac{1}{3}$ and $\frac{2}{3}$.	
2.	Name a fraction between $\frac{3}{5}$ and $\frac{4}{5}$.	
3.	Name five fractions between one-half and 1.	
4.	Name five fractions between 0 and one-fourth..	
5.	Name a fraction between $\frac{1}{4}$ and $\frac{1}{2}$ whose denominator is 16.	
6.	Name a fraction between $\frac{2}{3}$ and $\frac{3}{4}$ whose denominator is 10.	
7.	Name a fraction between 0 and $\frac{1}{6}$ whose numerator is 1.	
8.	Name a fraction between 0 and $\frac{1}{10}$ whose numerator is not 1.	
9.	Name a fraction that is halfway between $\frac{2}{9}$ and $\frac{5}{9}$.	
10.	How many fractions are there between one-fourth and one-half?	

Use the clues to discover the identity of the mystery fraction.

11.	My numerator is 6 less than my denominator. I am equivalent to $\frac{3}{4}$.	
12.	My denominator is 5 more than twice my numerator. I am equivalent to $\frac{1}{3}$.	
13.	The GCF of my numerator and denominator is 3. I am equivalent to $\frac{2}{5}$.	
14.	The GCF of my numerator and denominator is 5. I am equivalent to $\frac{4}{6}$.	
15.	My numerator and denominator are prime numbers. My numerator is one less than my denominator.	
16.	My numerator and denominator are prime numbers. The sum of my numerator and denominator is 24.	
17.	My numerator is divisible by 3. My denominator is divisible by 5. My denominator is 4 less than twice my numerator.	
18.	My numerator is divisible by 3. My denominator is divisible by 5. My denominator is 3 more than twice my numerator.	
19.	My numerator is a prime number. The GCF of my numerator and denominator is 2. I am equivalent to one-fifth.	
20.	My numerator is 3 less than my denominator. My reciprocal is 4 times my value.	