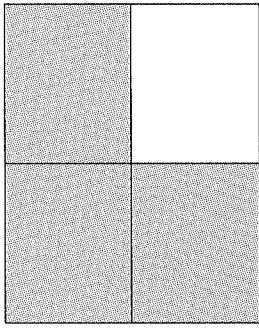# Lesson 1 Writing Fractions

The figure is separated into 4 parts. Each part is the same size. 3 of the 4 parts are blue.

$\frac{3}{4}$ (read *three fourths*) of the figure is blue.

_____ of the 4 parts is not coloured.

_____ of the figure is not coloured.

$\frac{3}{4}$ and $\frac{1}{4}$ are **fractions.**

On the first ___ beneath each figure, write the fraction that tells how much of the figure is blue. On the second ___ , write the fraction that tells how much of the figure is not coloured.

	a	*b*	*c*	*d*
1.				
2.				
3.				
4.				

CHAPTER 10

NAME _____

Lesson 2 Writing Fractions
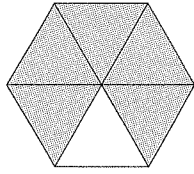
$\frac{5}{6}$ of the figure is coloured.

$\frac{5}{6}$ ← numerator
← denominator
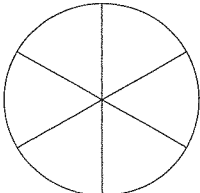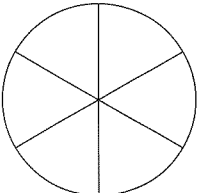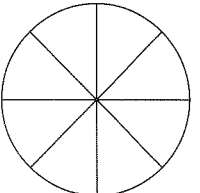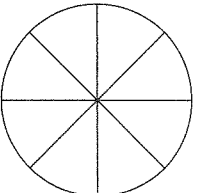
$\frac{1}{6}$ of the figure is not coloured.
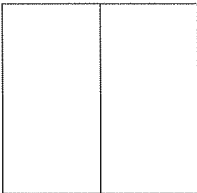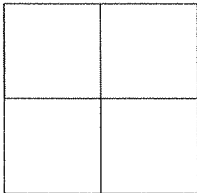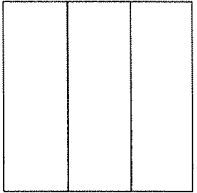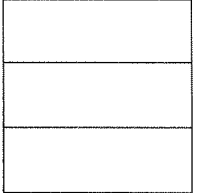
The denominator of $\frac{1}{6}$ is _____. The numerator of $\frac{1}{6}$ is _____.

Write a fraction for each of the following.

	a		b	
1.	three fifths	___	numerator 2, denominator 3	___
2.	four sevenths	___	denominator 5, numerator 4	___
3.	five eighths	___	denominator 4, numerator 3	___
4.	one fifth	___	numerator 1, denominator 6	___
5.	two ninths	___	denominator 9, numerator 5	___

Colour each figure as directed.

	a	b	c	d
6.	colour $\frac{1}{2}$	colour $\frac{1}{4}$	colour $\frac{2}{3}$	colour $\frac{1}{3}$
7.	colour $\frac{2}{6}$	colour $\frac{1}{3}$	colour $\frac{4}{8}$	colour $\frac{1}{2}$

Lesson 3 Prime and Composite

A **factor** is a number that divides evenly (no remainder) into a given number.

A **prime number** is a number greater than 1 that has only 1 and itself as factors.	A **composite number** is a number that has more than two factors.
For example, 3 is a prime number because 1 and 3 are its only factors.	For example, 10 is a composite number because 1, 2, 5, and 10 are its factors.

List the factors of each number.

	a		b	
1.	5	_____	8	_____
2.	12	_____	11	_____
3.	6	_____	22	_____
4.	7	_____	13	_____
5.	15	_____	24	_____
6.	20	_____	9	_____

Identify each number as prime or composite.

	a		b	
7.	8	_____	17	_____
8.	14	_____	9	_____
9.	7	_____	11	_____
10.	12	_____	33	_____
11.	31	_____	27	_____
12.	25	_____	19	_____

Lesson 4 Greatest Common Factor

The **greatest common factor** of two or more numbers is the
largest factor they have in common.

What is the greatest common factor of 12 and 18?

List all the factors of both numbers.

12: ① ② ③ 4, ⑥ 12   Circle all their common factors.
18: ① ② ③ ⑥ 9, 18

The greatest common factor of 12 and 18 is ___6___ .

___

List the common factors of each set of numbers.

	a	b
1.	8 and 14	15 and 30
2.	9 and 21	16 and 36

Find the greatest common factor of each set of numbers.

3.	15 and 20	_____	16 and 24	_____
4.	21 and 27	_____	20 and 28	_____
5.	36 and 48	_____	40 and 56	_____
6.	12, 24, and 36	_____	18, 30, and 42	_____

Lesson 5 Fractions in Simplest Form

A fraction is in simplest form when the only whole number that will divide both the numerator and the denominator is 1.

$\frac{12}{18} = \frac{12 \div 6}{18 \div 6}$ ← Divide both the numerator and the denominator by the same number. → $\frac{12}{18} = \frac{12 \div 2}{18 \div 2}$

$= \frac{2}{3}$

$= \frac{6}{9}$ ← This fraction is not in simplest form, so continue dividing the numerator and the denominator until the fraction is in simplest form.

$= \frac{6 \div 3}{9 \div 3}$

$= \frac{2}{3}$

Change each fraction to simplest form.

	a	b	c
1.	$\frac{4}{6}$	$\frac{4}{16}$	$\frac{12}{15}$
2.	$\frac{12}{32}$	$\frac{8}{10}$	$\frac{15}{20}$
3.	$\frac{14}{16}$	$\frac{6}{8}$	$\frac{10}{16}$
4.	$\frac{6}{10}$	$\frac{3}{24}$	$\frac{8}{16}$
5.	$\frac{14}{21}$	$\frac{10}{12}$	$\frac{12}{16}$

CHAPTER 10

Lesson 5 Fractions in Simplest Form

Change each fraction to simplest form.

	a	b	c
1.	$\dfrac{4}{8}$	$\dfrac{3}{6}$	$\dfrac{2}{4}$
2.	$\dfrac{5}{10}$	$\dfrac{3}{15}$	$\dfrac{4}{20}$
3.	$\dfrac{4}{24}$	$\dfrac{8}{12}$	$\dfrac{6}{9}$
4.	$\dfrac{6}{21}$	$\dfrac{10}{25}$	$\dfrac{4}{12}$
5.	$\dfrac{12}{30}$	$\dfrac{12}{28}$	$\dfrac{16}{20}$
6.	$\dfrac{20}{24}$	$\dfrac{20}{36}$	$\dfrac{42}{49}$
7.	$\dfrac{21}{35}$	$\dfrac{15}{18}$	$\dfrac{24}{30}$
8.	$\dfrac{16}{24}$	$\dfrac{15}{35}$	$\dfrac{24}{32}$

Lesson 6 Improper Fractions

$\dfrac{17}{5}$ means $17 \div 5$ or $5\overline{)17}$

$5\overline{)17}$ → $3\frac{2}{5}$
$\underline{15}$
2 → $2 \div 5 = \dfrac{2}{5}$

$\dfrac{17}{5} = 3\dfrac{2}{5}$

$3\dfrac{2}{5}$ is a **mixed numeral.** It means $3 + \dfrac{2}{5}$.

Rename as mixed numerals.

	a	*b*	*c*
1.	$\dfrac{9}{4}$	$\dfrac{6}{5}$	$\dfrac{9}{8}$
2.	$\dfrac{8}{3}$	$\dfrac{9}{5}$	$\dfrac{7}{3}$
3.	$\dfrac{7}{4}$	$\dfrac{29}{6}$	$\dfrac{14}{3}$
4.	$\dfrac{15}{7}$	$\dfrac{12}{5}$	$\dfrac{19}{9}$
5.	$\dfrac{22}{7}$	$\dfrac{19}{2}$	$\dfrac{27}{5}$
6.	$\dfrac{35}{8}$	$\dfrac{43}{7}$	$\dfrac{55}{6}$

Lesson 7 Renaming Numbers

Study how to change a mixed numeral to an improper fraction.

$$2\frac{1}{4} = \frac{(4 \times 2) + 1}{4}$$

Multiply the whole number by the denominator and add the numerator. **Use the same denominator.**

$$4\frac{2}{3} = \frac{(3 \times 4) + 2}{3}$$

$$= \frac{8 + 1}{4}$$

$$= \frac{9}{4}$$

$$= \frac{12 + 2}{3}$$

$$= \frac{14}{3}$$

Change each mixed numeral to an improper fraction.

	a	*b*	*c*
1.	$2\frac{1}{3}$	$3\frac{1}{2}$	$4\frac{3}{4}$
2.	$6\frac{4}{5}$	$3\frac{3}{8}$	$2\frac{5}{9}$
3.	$2\frac{1}{5}$	$1\frac{2}{7}$	$5\frac{3}{7}$
4.	$6\frac{5}{12}$	$7\frac{3}{10}$	$8\frac{6}{15}$

Lesson 8 Mixed Numerals

> A mixed numeral is in simplest form when the fraction is in simplest form and names a number less than 1.

$$5\frac{4}{8} = 5 + \frac{4}{8}$$

$$= 5 + \frac{4 \div 4}{8 \div 4}$$

$$= 5 + \frac{1}{2}$$

$$= 5\frac{1}{2}$$

$$1\frac{18}{8} = 1 + \frac{18}{8}$$

$$= 1 + \frac{18 \div 2}{8 \div 2}$$

$$= 1 + \frac{9}{4} \qquad \frac{9}{4} = 9 \div 4 = 2$$

$$= 1 + 2\frac{1}{2}$$

$$= 3\frac{1}{4}$$

Change each mixed numeral to simplest form.

	a	b	c
1.	$3\frac{4}{6}$	$1\frac{4}{8}$	$2\frac{6}{8}$
2.	$4\frac{3}{12}$	$2\frac{6}{16}$	$1\frac{10}{12}$
3.	$1\frac{7}{5}$	$3\frac{9}{6}$	$2\frac{8}{6}$
4.	$1\frac{12}{10}$	$2\frac{15}{10}$	$4\frac{14}{6}$

Lesson 9 Simplest Form

Change each fraction to simplest form.

	a	b	c
1.	$\dfrac{6}{14}$	$\dfrac{12}{27}$	$\dfrac{15}{25}$
2.	$\dfrac{4}{12}$	$\dfrac{28}{32}$	$\dfrac{15}{21}$

Change each of the following to a mixed numeral in simplest form.

3.	$\dfrac{9}{5}$	$\dfrac{8}{3}$	$\dfrac{12}{7}$
4.	$\dfrac{12}{8}$	$\dfrac{16}{6}$	$\dfrac{25}{15}$
5.	$1\dfrac{8}{10}$	$2\dfrac{7}{21}$	$3\dfrac{9}{15}$
6.	$4\dfrac{12}{14}$	$5\dfrac{8}{12}$	$2\dfrac{12}{16}$

CHAPTER 10   PRACTICE TEST
Fractions

Change each fraction to simplest form.

	a	b	c	d
1.	$\dfrac{4}{8}$	$\dfrac{5}{10}$	$\dfrac{6}{9}$	$\dfrac{3}{6}$
2.	$\dfrac{10}{15}$	$\dfrac{6}{8}$	$\dfrac{12}{18}$	$\dfrac{9}{12}$

Rename as mixed numerals.

3.	$\dfrac{5}{2}$	$\dfrac{7}{5}$	$\dfrac{9}{4}$	$\dfrac{16}{3}$

Change each mixed numeral to a fraction.

4.	$1\dfrac{1}{2}$	$1\dfrac{7}{8}$	$4\dfrac{2}{3}$	$5\dfrac{5}{6}$

Change each of the following to simplest form.

5.	$1\dfrac{8}{10}$	$\dfrac{18}{8}$	$1\dfrac{7}{3}$	$5\dfrac{12}{8}$

CHAPTER 11   PRETEST
Multiplication of Fractions

Write each answer in simplest form.

	a	b	c
1.	$\dfrac{3}{7} \times \dfrac{2}{5}$	$\dfrac{3}{4} \times \dfrac{7}{8}$	$\dfrac{4}{5} \times \dfrac{4}{5}$
2.	$\dfrac{2}{3} \times \dfrac{7}{8}$	$\dfrac{5}{9} \times \dfrac{3}{5}$	$\dfrac{9}{10} \times \dfrac{5}{12}$
3.	$4 \times \dfrac{2}{3}$	$3 \times \dfrac{5}{6}$	$\dfrac{5}{8} \times 10$
4.	$3\dfrac{1}{5} \times 4$	$2\dfrac{1}{4} \times 8$	$6 \times 1\dfrac{5}{6}$
5.	$2\dfrac{1}{2} \times 2\dfrac{1}{3}$	$2\dfrac{1}{4} \times 1\dfrac{1}{5}$	$1\dfrac{1}{8} \times 3\dfrac{1}{3}$