



Unit 6

Name: _____

Lesson 6.1

Grade 5A

Date: _____

Understanding Fractions

Study sheet

What is a fraction?

A **fraction** represents a part of a whole. Think of a pizza cut into equal slices — if you take 3 slices out of 8 total slices, that's the fraction $\frac{3}{8}$.

Every fraction has two parts:

1. Numerator → The top number (It tells how many parts we have).
2. Denominator → The bottom number (It tells how many equal parts the whole is divided into).

Example:

$$\text{In } \frac{3}{5}$$

- Numerator = 3 → We have 3 parts.
- Denominator = 5 → The whole is divided into 5 equal parts.

There are two main types of fractions.

Type	Rule	Value	Example
Proper fraction	Numerator < Denominator	Less than 1	$\frac{3}{4}$
Improper fraction	Numerator ≥ Denominator	1 or more	$\frac{4}{4}, \frac{5}{4}$

Quick check:

If the top number < bottom number → Proper fraction (less than 1).

If the top number ≥ bottom number → Improper fraction (1 or more).

Improper fractions can be written as mixed numbers.

To convert improper fraction to mixed number:

1. Divide numerator by denominator
2. Quotient = whole number part
3. Remainder = numerator of fraction
4. Denominator stays the same

“DRAW” (Divide, Remainder on top, **A**s a fraction, **W**hole number first).

For example: $13 \div 5$

Ask yourself: "How many times does 5 fit completely into 13?"

Count in fives:

- $5 \times 1 = 5$
- $5 \times 2 = 10$
- $5 \times 3 = 15 \leftarrow$ **Too big!** (15 is more than 13)

So 5 fits **2 complete times** into 13.

Write as a mixed number

- **Whole number part:** 2 (from Step 2)
- **Fraction part:** $\frac{3}{5}$ (remainder over denominator)

$$\frac{13}{5} = 2 \frac{3}{5}$$

Converting Mixed Numbers into Improper Fractions

How to convert:

Step 1: Multiply the **whole number** by the **denominator**.

Step 2: Add the **numerator**.

Step 3: Write the total over the **same denominator**.

Example:

$$2\frac{3}{4}$$

1. Whole number \times denominator = $2 \times 4 = 8$

2. Add numerator: $8 + 3 = 11$

3. Write over denominator: $\frac{11}{4}$

Rule: Denominator stays the same!

Tip: Think: “Multiply, Add, Keep bottom same.”

Converting Fractions into Decimals

A fraction is just a **division problem** waiting to be solved!

To change a fraction to a decimal, **divide the numerator by the denominator**.

How to convert:

Step 1: Set up the division: numerator \div denominator.

Step 2: Divide (you may need to add a decimal point and zeros).

Step 3: Write the answer as a decimal.

Example:

$\frac{3}{8}$ means $3 \div 8$.

8 doesn't go into 3, so write 0. and add a zero: 30

8 goes into 30 three times ($8 \times 3 = 24$), remainder 6, add zero, continue...

$3 \div 8 = 0.375$

Quick decimals to know:

$\frac{1}{2} = 0.5$

$\frac{1}{4} = 0.25$

$\frac{3}{4} = 0.75$

$\frac{1}{5} = 0.2$

Representing Proper & Improper Fractions as Division

A fraction is just another way to write **division**!

Rule:

$\frac{\text{numerator}}{\text{denominator}} = \text{numerator} \div \text{denominator}$

Example (proper fraction):

$\frac{3}{4}$ means $3 \div 4$

Think: "3 things shared among 4 people."

Example (improper fraction):

$\frac{9}{4}$ means $9 \div 4$

This gives 2 remainder 1, or 2.25 as a decimal.

'9 divided by 11' is $\frac{9}{11}$

Representing Fractions as Operators

A fraction can act like an **instruction** or **operation** – telling us to take a **part of** a number or quantity.

“Of” means multiply!

Rule:

To find $\frac{3}{5}$ **of** 20, you do: $\frac{3}{5} \times 20$

Which is the same as:

1. Divide 20 by the denominator 5: $20 \div 5 = 4$
2. Multiply result by numerator 3: $4 \times 3 = 12$

Think of it this way:

- Denominator: tells you how many equal groups to split the whole into.
- Numerator: tells you how many of those groups to take.