Name _____ Date _____

Proper, improper, mixed

Three ways fractions can look, and how to tell them apart.

1 Learn



Look at the **top number** (numerator) and the **bottom number** (denominator). They tell you if a fraction is less than one whole, or one whole or more!

PROPER FRACTION



$\frac{3}{4}$

top is **smaller** than bottom: **less than 1** whole

IMPROPER FRACTION



$\frac{7}{4}$

top is the **same or bigger**: **1 whole or more**

MIXED NUMBER



$1\frac{3}{4}$

a **whole number** and a **proper fraction**

Is $\frac{5}{5}$ proper?



1. Compare the numbers: top **5**, bottom **5**. They are the **same**.
2. 5 fifths fill the whole bar, so $\frac{5}{5}$ = **1 whole**.
3. It is not less than 1, so it is an **improper** fraction.

Flip's tip: top **smaller** than bottom: proper. Top the **same or bigger**: improper (schools say **top-heavy**). A **whole number in front** of a fraction: mixed number.

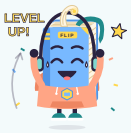
Warm up: write **P** (proper), **I** (improper) or **M** (mixed number) in each box.

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

Grown-ups: read Flip's words aloud. Ask "Is it less than one whole, or one whole or more?" for each fraction, and point at the pictures. Saying "top-heavy" for improper fractions is fine: it's what many schools call them.

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2 Try it together a child and a grown-up, about 10 minutes



Paper quarters

You need: 3 sheets of scrap paper, all the same size, and a pencil. (Or two sandwiches cut into quarters!)

1. Fold each sheet in half, then in half again. Open it out and tear along the folds: each sheet makes **4 quarters**.
2. Lay out **7 quarters**. How many quarters is that? Write it as an **improper fraction**.
3. Fit the pieces back into whole sheets. How many **whole sheets**, and how many quarters left over? Write the **mixed number**.
4. Do the same for the other rows. Then choose your own number of quarters.

Quarters laid out	Improper fraction	Mixed number	More than 1 whole?
7			
5			
3		(not needed)	
____			

Grown-ups: ask "Why can't 3 quarters be a mixed number?" (There isn't enough to make a whole sheet, so it's a proper fraction.) Then lay out exactly 4 quarters: it makes 1 whole sheet, so $^4/_4 = 1$.

3 Practise

A. Sort the fractions. Write each one in the right box.

$\frac{4}{7}$ $\frac{11}{6}$ $2\frac{1}{3}$ $\frac{8}{8}$ $\frac{1}{9}$ $5\frac{2}{5}$ $\frac{13}{10}$ $\frac{9}{10}$ $3\frac{3}{4}$

PROPER	IMPROPER	MIXED NUMBER

Name _____ Date _____

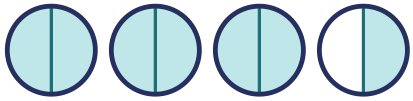
B. Each shape is 1 whole. Write the shaded amount **both** ways.



improper mixed



improper mixed



improper mixed

C. Tick: less than 1, equal to 1, or more than 1?

	less than 1	equal to 1	more than 1
$\frac{3}{8}$			
$\frac{12}{12}$			
$\frac{10}{7}$			
$1\frac{1}{6}$			

D. True or false? Write **T** or **F**.

$\frac{7}{4}$ is less than 1 whole.	
$\frac{5}{5}$ is a proper fraction.	
$\frac{3}{7}$ and $\frac{7}{3}$ are the same.	
$2\frac{1}{2}$ is more than 2.	

Challenge



Sam looked at this picture and wrote $\frac{3}{7}$. Is Sam right? What should Sam write?

_____

_____

_____

I can… Tick when you can.

- [ ] tell a proper fraction, an improper fraction and a mixed number apart
- [ ] explain why a fraction like $\frac{5}{5}$ is one whole
- [ ] write a picture as an improper fraction and as a mixed number