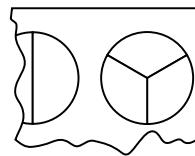


## 4

# Improper Fractions and Mixed Numbers

## You will need

- fraction circles



- grid paper



### Goal

**Represent and rename improper fractions as mixed numbers.**

Teresa is helping her dad roast a small chicken. It will take  $1\frac{1}{4}$  hours to cook. She must baste it every quarter hour. She sets the timer to ring every 15 min.

**? How many times will the timer ring until the chicken is cooked?**



## Teresa's Cooking Time

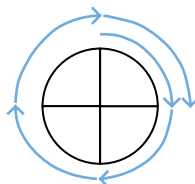
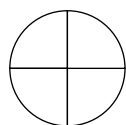
I can use a fraction circle with four parts to represent a clock.

I can count around the clock by quarter hours:  $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}, \frac{5}{4}$

The timer will go off five times, once for each of the five quarters.

Another name for the **mixed number**

$1\frac{1}{4}$  is the **improper fraction**  $\frac{5}{4}$ .



$1\frac{1}{4}$  hours

### mixed number

A number made up of a whole number and a fraction

### improper fraction

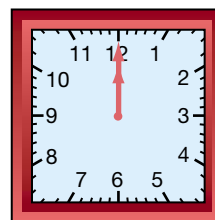
A fraction with a numerator that is greater than or equal to its denominator

## Reflecting

- Why do you think Teresa used a fraction circle with four parts to represent a clock?
- The improper fraction  $\frac{8}{3}$  says there are eight parts and each part is  $\frac{1}{3}$  of a whole. What mixed number is equivalent to  $\frac{8}{3}$ ? How do you know?

## Checking

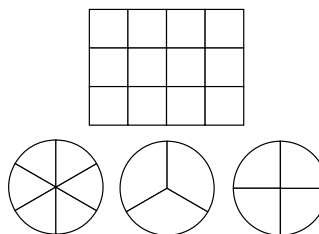
3. a) Clock faces can be square.  
Draw a square on grid paper and show how to represent half an hour.
- b) A timer rings every half hour for  $3\frac{1}{2}$  hours.  
Use your model to determine the number of rings.
- c) Write  $3\frac{1}{2}$  as an improper fraction.



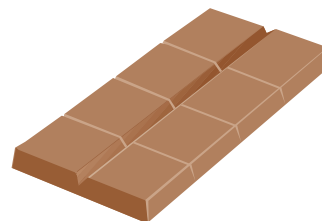
## Practising

4. Draw a picture for each mixed number.  
Use fraction circles or grid paper for each.

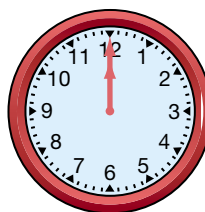
- a)  $3\frac{2}{3}$  hours      c)  $1\frac{3}{4}$  cups  
b)  $1\frac{5}{6}$  hours      d)  $6\frac{1}{2}$  innings



5. Rename each mixed number in Question 4 as an improper fraction.
6. How many hours would be spent watching videos?  
Use fraction circles. Write your answers as improper fractions and mixed numbers.
- a) 8 videos, each  $\frac{1}{3}$  hours long      c) 2 videos, each  $\frac{3}{4}$  hours long  
b) 8 videos, each  $\frac{1}{2}$  hours long      d) 7 videos, each  $\frac{2}{3}$  hours long
7. One chocolate bar has eight squares.  
Write each number of bars as an improper fraction.  
Draw a model for each.
- a)  $1\frac{5}{8}$  bars      b)  $2\frac{1}{8}$  bars      c) 3 whole bars



8. Jose spent  $3\frac{1}{3}$  hours watching a video several times.
- a) How long could the video be?  
Explain your thinking.
- b) How many times did he watch it?



9. Write your own problem using an improper fraction and a mixed number. Explain the solution to your problem.