

FRACTIONS

Week 21, Lesson 2

Resources

Starter (5 minutes)

Equivalent fractions

Objective: Recall equivalent fractions.

Say a fraction to a child, e.g. *a half*. S/he replies with an equivalent fraction, e.g. *four eighths*, and says a fraction with a different value to the next child, e.g. *two thirds*.

The chain continues around the class.

Repeat as time allows.

Teacher exposition and guided practice (20 minutes)

Objective

- Identify two or more simple fractions with a total of one.

Language to emphasise

fraction
equal parts
numerator
denominator
equivalent

Teaching notes

Display OHT 21:1b from lesson 1.

Revise unitary fractions as equal parts of a whole.

Say: *If we divide a whole into equal parts we get fractions.
We name them depending on how many equal parts there are.
e.g. If there are five equal parts we call them fifths, if there are
three equal parts we call them thirds.*

OHT 21:1b

Explain that the terms halves and quarters, unlike most unitary fractions, do not sound like their denominators.

Say: *Three thirds, four quarters, five fifths, etc. make a whole.*

Say and write on the board:

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

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

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

Ask pupils to supply further examples. Point out that it is easy to find out how many equal fractions make a whole one. The numerators and denominators (the top and bottom numbers) are the same. The denominators show the number of equal parts that make one.

Check that pupils understand this crucial concept.

Ask: *How many halves make one?*

How many thirds make one?

How many quarters make one? etc.

Fold a piece of paper in half.

Say: *I am dividing this into two equal parts or halves.*

Write $\frac{1}{2}$ on each piece. Cut or tear it in half. Blu-tack the two parts to the board, write underneath and say:

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

Fold another piece of paper into quarters.

Label each quarter and cut one off. Blu-tack them to the board and say and write underneath:

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

Reverse the order of pieces on the board.

Say: *As with other numbers it does not matter in which order we do the addition. We always get the same result.*

Say and write underneath:

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

Now remove the pieces and cut off another quarter from the $\frac{3}{4}$

Square pieces of
paper
Scissors

piece. Put it with the existing quarter and Blu-tack them back to the board.

Say and write underneath:

$$\frac{2}{4} + \frac{2}{4} = 1$$

Ask: *What do you notice?*

Discuss the fact that $\frac{2}{4}$ is equivalent to a half. Turn the $\frac{2}{4}$ piece over, label it $\frac{1}{2}$ and reattach it to the board.

Say and write underneath:

$$\frac{2}{4} + \frac{1}{2} = 1$$

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

Invite pupils to the board to repeat the demonstration for thirds and sixths, discussing different ways to make a total of one.

Emphasise the fact that you can split up a whole into equal fractions and then reassemble the whole using equivalent fractions.

Encourage pupils to spot common equivalences of halves, quarters, thirds, etc.

Say: *If the numerator (the top number) is half of the denominator (the bottom number) the fraction is equivalent to a half. Illustrate using examples and repeat the explanation for thirds, quarters, fifths, etc.*

Practice and consolidation (15 minutes)

Textbook page 77. Pupils work individually in their exercise books.

H 21:2 provides practice in spotting two fractions which, when added together, equal one. Pupils circle the fractions as shown in the example. There are 12 pairs to find in total.

Conclusion / recapitulation (5 minutes)

Pupils mark their own work.

Say: *When you divide a whole into equal fractions you get the same number of equal parts as the number which the whole has been*

Paper, ready folded accurately into sixths.

Textbook page 77

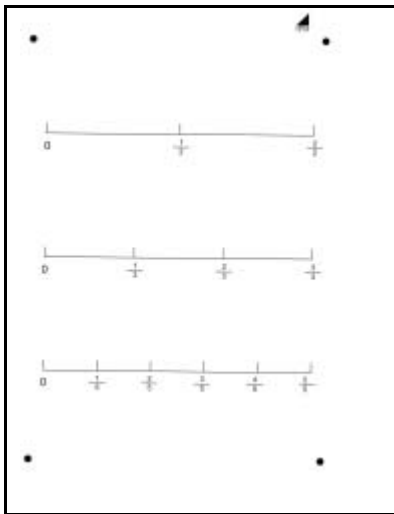
H 21:2

divided into. There are four quarters in a whole, five fifths in a whole, six sixths in a whole, etc.

Ask pupils to explain their understanding of this in their own words.

If time allows...

I ate $\frac{1}{4}$ of a bar of chocolate at 10:00 and half of the bar at 12:00. I ate the rest at 3:00. What fraction of the bar did I eat at 3:00?



OHT 21:1b

The family of one
These diagrams will help you with question 1.

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

$\frac{4}{4} = \frac{5}{5} = \frac{6}{6} = \dots?$

- Write ten fractions in the family of one.
- From the box, find ten pairs of fractions which total 1.

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

e.g. $\frac{1}{4} + \frac{3}{4} = 1$

Textbook page 77

Make 1
Circle the pairs of fractions (vertically, horizontally or diagonally) which, added together, make 1.
You can use the same fraction more than once. There are 12 pairs to find.

1	4	1	5	1	1	3	2	2	6
4	8	2	12	3	6	6	4	4	6
1	2	2	1	2	4	1	2	1	2
4	3	6	4	4	8	4	8	6	6
6	1	1	1	2	1	1	2	3	3
12	4	6	5	10	4	6	10	6	6
3	3	2	3	2	1	1	2	1	2
6	6	12	6	6	4	4	8	4	4
1	2	2	1	2	1	2	2	2	2
4	4	4	4	4	4	4	4	4	4
2	1	2	3	1	4	3	1	5	5
5	5	5	5	5	5	5	5	5	5
1	1	1	1	1	1	1	1	1	1
8	4	4	8	2	3	3	3	3	3

e.g. $\frac{3}{4} + \frac{1}{4} = 1$

H 21:2