

DECIMALS – PLACE VALUE
Week 11, Lesson 1
Resources
Starter (5 to 10 minutes)
Make 10, make 100, make 1000 (complements)

Objective: Recall number facts to 10, 100 and/or 1000.

Begin a chain by saying a single-digit number, e.g. 6 to a child. S/he replies with the complement of 10, i.e. 4, and then gives a different number to the next child. The chain continues around the class.

Repeat using two-digit multiples of 10 to make 100, e.g. 60, 40.

Repeat using three-digit multiples of 100 to make 1000, e.g. 600, 400.

Repeat using **any** two- or three-digit numbers to make 100 or 1000, e.g. 35 and 65, 421 and 579.

Teacher exposition and guided practice (25 minutes)
Objectives

- Compare decimal numbers.
- Express a decimal number as the sum of its parts.

Language to emphasise

greater than
less than
round up
reduce

Teaching notes
Part 1

Revise the meaning of $>$, $<$ and $=$.

Use OHT 11:1a to discuss the relative sizes of decimal numbers.

Say: *0.4 is greater than 0.04 because $\frac{4}{10}$ is greater than $\frac{4}{100}$.*

OHT 11:1a

Write $>$ between the numbers. Point to the next example.

Say: *1.203 is less than 1.23 even though there are more digits in the first number. The 3 in the first number represents $\frac{3}{100}$; the 3 in the second number represents $\frac{3}{10}$.*

Explain that for **decimal numbers**, the rule, the more digits the greater the number, does **not** apply.

Discuss how to compare decimal numbers by first comparing whole numbers in the usual way, then comparing digits in each decimal place, in turn, starting with tenths.

Work through the remaining examples on OHT 11:1a, inviting pupils to explain, as appropriate.

Part 2

Cut out and shuffle Card set 11:1. Choose a card, e.g. 2.005. Write the number on the board or a blank OHT. Read it aloud.

Card set 11:1

Explain the meaning of each digit in the number.

Say and write: two units, zero tenths, zero hundredths and five thousandths. Now write the number as an equation. Say and write: $2.005 = 2 + \frac{5}{1000}$.

Repeat for several more cards. Tell pupils to pay particular attention to the number of decimal places, especially when there are zeros. Invite pupils to the front to repeat for the remaining cards.

Display OHT 11:1b. The first two questions are the same as Textbook page 44.

OHT 11:1b
Textbook page 44

Say: *In the first two questions you need to write out the inequality in full, including the appropriate sign.*

Say and write: $0.3 > 0.03$.

Say: *In questions 3 and 4 you need to write out the meaning of each decimal number as an equation. You do not need to **write out** the meaning of zeros, since this information does not change the value of the number.*

Say and write: $1.07 = 1 + \frac{7}{100}$.

Ask: *Why **do** you need to **take notice** of the zeros? Why do we need to write the zeros in a decimal number if zero is not the final digit?*

Practice and consolidation (20 minutes)

Introduce textbook page 44. Pupils work individually to write answers in their exercise books.

Textbook page 44

Pupils who finish quickly could calculate the differences between the numbers in question ¹.

Conclusion / recapitulation (5 to 10 minutes)

Go through the questions using OHT 11:1b as a guide. Pupils mark their own work.

Target questions to individuals to assess their understanding.

Ask: *How many hundredths are in this decimal number?
What does the 3 stand for in this number?
How do we know that 0.43 is greater than 0.34?*

If time allows...

Write the following numbers on the board or a blank OHT:

0.1 0.06 0.4 0.8 0.08 0.6

Which numbers add together to make 0.14?

Answer: $0.06 + 0.08 = 0.14$

Repeat with further similar examples.

Exemplify by expressing each number given as an equation or the sum of its parts, if necessary.

IPM

0.4	◇	0.04
1.203	◇	1.23
2.561	◇	2.516
6.099	◇	6.1
1.071	◇	10.71
4.10	◇	4.1
110	◇	11.11
0.177	◇	0.18

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OHT 11.1a

OHT 11:1a

IPM

Decimal numbers

1. a) 0.3 ◇ 0.03	2. a) 3.95 ◇ 3.959
b) 0.8 ◇ 8	b) 3.90 ◇ 3.99
c) 2.1 ◇ 1.2	c) 3.09 ◇ 3.1
d) 0.43 ◇ 0.34	d) 1.017 ◇ 10.17
e) 1.304 ◇ 1.34	e) 1.17 ◇ 1.169
f) 5.6 ◇ 5.59	f) 8.07 ◇ 7.8

Example: $62.3 = 60 + 2 + \frac{3}{10}$

3. a) 1.07 = _____
 b) 0.34 = _____
 c) 50.6 = _____
 d) 8.005 = _____

4. a) 2040.9 = _____
 b) 0.027 = _____
 c) 130.31 = _____
 d) 0.08 = _____

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OHT 11.1b

OHT 11:1b

IPM

Decimal numbers

Compare the numbers given each time. Write them down inserting the correct sign, > or < or =.

1

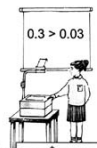
0.3 ◇ 0.03
0.8 ◇ 8
2.1 ◇ 1.2
0.43 ◇ 0.34
1.304 ◇ 1.34
5.6 ◇ 5.59

2

3.95 ◇ 3.959
3.90 ◇ 3.99
3.09 ◇ 3.1
1.017 ◇ 10.17
1.17 ◇ 1.169
8.07 ◇ 7.8

3

0.89 ◇ 0.809
0.89 ◇ 0.98
14.03 ◇ 13.04
110 ◇ 11.19
110.9 ◇ 111
0.889 ◇ 0.89



Write the following numbers as equations.

Example: $62.3 = 60 + 2 + \frac{3}{10}$

4

62.3
0.34
50.6
8.005

5

2040.9
0.027
130.31
0.08

6

500.9
0.509
50.09
9.005

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OHT 11.1b

Textbook page 44