

# Strand: Number

Strand unit: Operations

### **Curriculum** Objectives

- **513** Express tenths, hundredths and thousandths in both fractional and decimal form.
- **515** Compare and order fractions and decimals.
- **516.3** Solve problems involving operations with decimals.

# Looking back: What the 4th class programme covered

- 1. Expressing tenths and hundredths as fractions and decimals.
- 2. Identifying the place value of decimal numbers up to 2 places.
- 3. Ordering decimals on the number line.
- 4. Adding and subtracting whole numbers and decimals up to 2 places.
- **5.** Solving problems involving decimals.

# Maths skills used in this topic

- **1. Applying and problem-solving:** Applying the concept of decimal numbers and the processes of converting between decimals and fractions in a variety of contexts.
- 2. Integrating and connecting: Recognising mathematics in the environment.
- 3. Reasoning: Investigating patterns using decimals and fractions.

## **Concrete** materials

Place mat templates, calculators

## Vocabulary

Decimal, tenths, hundredths, thousandths, fraction, half, quarter, eighths, tenths, fifths, twentieths, equivalent, mixed number, notation board



### **Teaching points**

- 1. Revise tenths and hundredths in fractional and decimal form.
- 2. Introducing the thousandth in decimal form, 0.001 and fractional form,  $\frac{1}{1000}$ .
- 3. Solving problems with decimals up to 3 decimal places.

# Oral and mental activities

#### Fans:

What is the value of 0.1 in cents, 0.2, 0.3, 0.8, etc? What is the value of 0.01 in cents? Vary the questions.



This number is equal to  $\frac{7}{10}$ . (0.7)

This number is equal to  $\frac{21}{5}$ . (2.2)

Repeat with similar fractions and ask the children show them as decimals. Call out fraction numbers and ask children to show them as decimals,  $\frac{1}{5}$ ,  $\frac{1}{10}$ ,  $\frac{1}{4}$ , etc.

#### Target board 8:

What is the value of each digit after the decimal point (express as a fraction and as money)?

### Topic suggestions

- 1. Use number lines as much as possible to check children's understanding of decimal concepts.
- 2. Find instances of the use of decimal points in everyday life, e.g. in financial sections of newspapers, in sport, on household bills.
- **3.** Discuss the pricing of items in shops: Why are items sold for  $\in 0.99$  instead of  $\in 1$ ?
- **4.** Use decimal fractions to describe quantities around the classroom, e.g. what decimal fraction of people have black hair? What decimal fraction of the teachers in the school are male/female? What decimal fraction of our day do we spend doing maths?
- 5. Use coins for decimal activities. What decimal fraction of €1/€2/€5 is 1c, 10c, 20c, 50c?

## Activity A

- **1.** This number is equal to  $\frac{7}{10}$ . (0.7)
- **2.** This number is equal to  $2 \cdot 2$ .  $(2\frac{1}{5})$
- 3. This number is equal to  $5\frac{5}{10}$ . (5.5)
- 4. This number is equal to 7.1.  $(7\frac{1}{10})$
- **5.** This shape is 0.75 shaded in.
- 6. This number is the same as  $5.25.(5\frac{1}{4})$
- **7.** This number is two times 1.11.(2.22)
- **8.** This shape is 0.25 shaded.
- 9. This number is equal to  $3.6. (3\frac{2}{5})$
- **10.** This number is 0.1 less than 2. (1.9)
- **11.** This number has a 7 in the units place and a 1 in the hundredths place.  $(7\frac{1}{100})$

# Differentiation

### Lower attainers:

Photocopiable has extra activities on key concepts introduced in this unit.

#### **Higher attainers:**

Photocopiable has conversion and computational activities, and word problems involving decimals and fractions.

<ul> <li>Net and reference transfer to the function of the fu</li></ul>	Copic Decimals - A	Iternative Questions		(i) Decimals - Early Finishers			
<pre>     for the second secon</pre>	1. Write each of these of	decimals in expanded form.		1. Write each of the following as a decimal number.			
	(a) 0-6	(b) 0-761	(c) 0-059	(a) (b) (c)			
● 200       ● 30 = 00       0.200         Second       ● 0.001       <	(d) 0-005	(e) 0-302	(f) 1-468	(d) 📥 (e) 📥 (b)			
• Next deside a relation:         • We add the add t	(g) 2-003	(b) 5-103	(i) 2-269	(g) 🗸 (h) 🛔			
<pre></pre>	2. Write each decimals	as a fraction.		2 Calculate the followine			
	(a) 0-002	(b) 0-057	(c) 0-134	(a) 6 + 0.45 + 0.072 =			
@ *13       @ *307       0 # 407         B       0 * 100 * 100 * 000 *	(d) 0-996	(e) 0-783	(f) 0-814	(b) 5 - 0.126 =			
<ul> <li>Not not advect family a solution statuse in the solution of the solut</li></ul>	(g) 0-116	(b) 3-260	<li>(i) 4-003</li>	(c) 114 + 0.117 + 0.071 =			
<ul> <li>a list of the latter age and end the latter age and end the latter age age age age age age age age age age</li></ul>				(d) 17 - 7.005 =			
<ul> <li>(a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c</li></ul>	3. Write each of the following as a decimal number.			(e) 0.114 + 2 + 1.672 + 0.003 =			
me     me    <	(a)	(b) 🐐	(c)	(f) 16 007 - 0.416 =			
	(d)	(e) -	(f)	(e) 0.009 + 12 + 1.472 + 0.014 =			
<ul> <li>A class to statuse;</li> <li>A class to statuse;&lt;</li></ul>	w 🖴	60 <b>4</b>	i) 🛔				
<ul> <li>(a) 0.00 - 0.</li></ul>	4. Calculate the followi	DF.		3. Calculate the following.			
<ul> <li>a cate - 231 - 600 + 7</li> <li>b cate - 231 - 600 + 7</li> <li>c cate - 231 - 600 + 7</li> <li>c cate - 241 - 600 + 70</li></ul>	(a) 0.863 ± 0.45 =			(a) A shoe box with a pair of shoes inside weighs 2-095 kg. The shoes weigh 1-992 kg. How heavy			
10     240 - 017 - (240 - 017	(b) 0-06 + 0-23 + 0-	556 -		is the box?			
B 300 - 504 - B 3-03 - B 3-0-103 - B 3-0-103 - B 3-0-102 - B 3-0-102 - B 1-0103 -	(c) 2684 - 0-112 =			(b) A table lamp weight 5-602kg. How much would three such lamps weight			
B - 0 - 1 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0	(d) 3-009 - 0-56 =			(c) A mini-matathon is 10km long. Alannah has travelled 7-855km. How far has she yet to go?			
B = 0 + 0 + 2 - 2     Control = 0     Co	(e) 5+01+0033 =			(d) Gerry weight 42-068kg, Carla weight 41.277kg. What is their total weight?			
Organization of the second secon	(0 6 - 0.442 =			(e) Sive's school bag is 6-112kg in weight. Jane's bag is 0-3kg lighter. What is the weight of Jane's			
W 3 2017-     I (4 Model and Balance Shares 3 and 10152)     (a) (4 Model and Balance Shares 3 and 10152)     (b) (4 Model and Balance Shares 3 and 10152)     (c) (4 Model and Control and Model and Balance Shares 3 (4 Model and Balance 3 Model	(g) 10 + 0.001 + 0.5	56 + 0-03 =		hage which is a second of the			
<ul> <li>(a) What she and 31,07 and 9000.</li> <li>(b) What she and 31,07 and 9000.</li> <li>(c) What she and she and she have she and 9000.</li> <li>(c) What she and she and she have she and 9000.</li> <li>(c) What she and she and she have she and 9000.</li> <li>(c) What she and she and she and she have she and 9000.</li> <li>(c) What she and she and 9000 all she defenses these of 9000.</li> <li>(c) What she and she and 9000 all she defenses these of 9000.</li> <li>(c) What she and 90000 all she defenses these of 900000000000000000000000000000000000</li></ul>	(h) 3 - 0.009 =			(b) Make cycles 0-9550m to work every day. Enda cycles 0-26m turner than Make. What is the length of Enda's cycle to work?			
<ul> <li>i. (a) Note: A definition of the same 1, 4, 5, 4 and 1000;</li> <li>(b) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5, 1000;</li> <li>(c) Note: A definition of the same 1, 5,</li></ul>				(g) A jug holds 1 liters of water. A cup holds 0.8 liters less than the jug. How much water can the			
A Work in the difference is using its State is a 3 (1917) A Work is the difference is using its A A A A A A A A A A A A A A A A A A A	5. (a) What is the sum if	3, 0.7 and 0.003.		cup hold?			
a) fam the sum of a 158 data b 5. (b) E home and 2 300 data b family fa	(b) What is the difference between 5 and 0 015?			(b) What is the difference in weight between a 1kg bag of sugar and data spoon of sugar?			
(d) here want is 31 and 3000 addite difference between 301 and 1000. <u>Norme</u> <u>Date</u> <u></u>	(c) from the sum of 9	and 1.368 take 0-5.		- F			
Norme door door door door door door door doo	(d) To the sum of 5-20	6 and 0-009 add the difference betwe	ren 3-06 and 1-049.	3			
				7			
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### Linkage

Place Value: Place value of decimal numbers up to 3 places
Measures: Length – Fractional and decimal quantities of length
Measures: Weight – Fractional and decimal quantities of weight
Measures: Capacity – Fractional and decimal quantities of capacity
Measures: Money – Expressing cent using decimal point

## Integration

PE: Express distances as a decimal fraction of a kilometre

SESE Science: Use decimal fractions for quantities involved in experiments

**English:** Use decimal fractions in oral language, e.g. instead of using 15 minutes use 0.25 of an hour **SESE Geography:** Use of decimals in human environments, e.g. shops

# Maths at home/parental involvement

- **1.** Examine mobile phone and landline telephone bills for examples of decimals up to 3 decimal places.
- 2. Examine other household bills for examples of decimals being rounded to the nearest cent.
- 3. Look at www.xe.com for examples of currency values using decimal points.

Notes	