



Main Maths
Home Learning Pack

Year 6

Decimals

Week 3

18/1/2021

ANSWERS

Lesson 1

I can convert fractions to decimals using division

1. 0.80 0.30 0.28

2. $A = \frac{1}{20} = 0.05$ $C = \frac{9}{20} = 0.45$

$B = \frac{3}{10} = 0.3$ $D = \frac{6}{10} = 0.6$

$E = \frac{4}{10} = 0.4$ $G = \frac{28}{10} = 2.8$

$F = \frac{12}{10} = 1.2$ $H = \frac{36}{10} = 3.6$

3. $\frac{3}{12} = \frac{1}{4}$ $\frac{7}{50} = \frac{17}{100}$ $\frac{81}{250} = \frac{324}{1,000}$
 $1 \div 4$ $17 \div 100$ $324 \div 1,000$
 0.25 0.17 0.324

4. Children complete the three division calculations to work out:

$\frac{5}{8} = 0.625$ $\frac{5}{12} = 0.4166 \dots = 0.417$ (to 3 dp) $\frac{12}{5} = 2.4$

5. a) $\frac{1}{6} = 0.166$ (to 3 dp) c) $\frac{54}{1,000} = 0.027$
b) $\frac{16}{80} = 0.2$ d) $\frac{14}{24} = 0.583$ (to 3 dp)

6. a) $\frac{1}{9} = 1 \div 9$ $\frac{2}{9} = 2 \div 9$
$$\begin{array}{r} 0.111\dots \\ 9 \overline{) 1.000} \end{array}$$

$$\begin{array}{r} 0.222\dots \\ 9 \overline{) 2.000} \end{array}$$

 $\frac{3}{9} = 3 \div 9$ $\frac{4}{9} = 4 \div 9$
$$\begin{array}{r} 0.333\dots \\ 9 \overline{) 3.000} \end{array}$$

$$\begin{array}{r} 0.444\dots \\ 9 \overline{) 4.000} \end{array}$$

b) Rounded to three decimal places:

$\frac{5}{9} = 0.556$ $\frac{9}{9} = 0.999 \dots = 1$

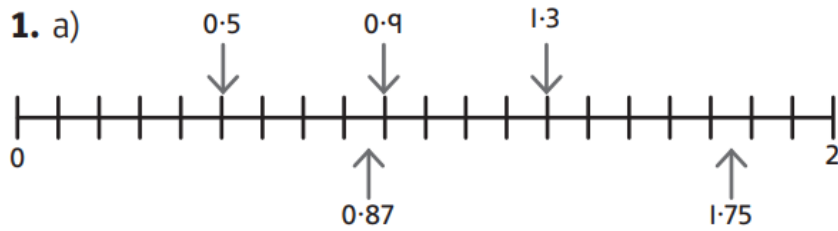
$\frac{6}{9} = 0.667$ $\frac{10}{9} = 1.111$

$\frac{7}{9} = 0.778$ $\frac{11}{9} = 1.222$

$\frac{8}{9} = 0.889$ $\frac{19}{9} = 1.111$

Lesson 2

I can round decimals



- b. 0.9 rounds to to the nearest whole number.
 1.3 rounds to to the nearest whole number.
 0.87 rounds to to the nearest whole number.
 0.5 rounds to to the nearest whole number.
 1.75 rounds to to the nearest whole number.

2. 3.9 cm rounds to 4 cm.
 5.2 cm rounds to 5 cm.
 3.5 cm rounds to 4 cm.
 4.4 cm rounds to 4 cm.

3. a) 5.23 rounds to 5.2 to the nearest tenth.
 b) Explanations will vary. First, identify the tenths the number is between. Then look at the hundredths digit, if it is less than 5 then the number rounds down to the smaller tenth. If it is 5 or more then it rounds up to the next tenth.

4.

Number	Rounded to nearest whole number	Rounded to the nearest tenth
1.19	1	1.2
10.19	10	10.2
0.75	1	0.8
100.75	101	100.8
100.03	100	100
100.037	100	100

5. When rounding to the nearest tenth, it means the nearest multiple of tenths – therefore there would not be a digit in the hundredths column after rounding, so the answer should be 2.8.
6. a) The number is in the range 8.45 to 8.5 (including 8.45 but not including 8.5).
 b) 0.529 rounded to the 1 decimal place is 0.5
 0.592 rounded to the 1 decimal place is 0.6
 2.950 rounded to the 1 tenth place is 3.0

Lesson 3

I can use written column methods to add and subtract decimals

1. a) $0.36 + 0.22 = 0.58$

	O	.	Tth	Hth
	0	.	3	6
+	0	.	2	2
	0	.	5	8

b) $0.25 + 0.47 = 0.72$

	O	.	Tth	Hth
	0	.	2	5
+	0	.	4	7
	0	.	7	2

c) $0.55 + 0.31 = 0.86$

	O	.	Tth	Hth
	0	.	5	5
+	0	.	3	1
	0	.	8	6

d) $0.38 + 0.38 = 0.76$

	O	.	Tth	Hth
	0	.	3	8
+	0	.	3	8
	0	.	7	6

2. Kate has put the 5 from 0.05 in the wrong column (tenths instead of hundredths). The correct answer is:

	O	.	Tth	Hth
	0	.	0	5
+	0	.	1	2
	0	.	1	7

3. $0.65 - 0.34 \text{ km} = 0.31 \text{ km}$

	O	.	Tth	Hth
	0	.	6	5
-	0	.	3	4
	0	.	3	1

4. a) $0.92 - 0.58 = 0.34$

	O	.	Tth	Hth
	0	.	9	2
-	0	.	5	8
	0	.	3	4

b) $0.49 - 0.19 = 0.30$

	0	·	Tth	Hth
	0	·	4	9
-	0	·	1	9
	0	·	3	0

c) $0.71 - 0.24 = 0.47$

	0	·	Tth	Hth
	0	·	7 ⁶	¹ 1
-	0	·	2	4
	0	·	4	7

d) $0.60 - 0.45 = 0.15$

	0	·	Tth	Hth
	0	·	6 ⁵	¹ 0
-	0	·	4	5
	0	·	1	6

5. a) 0.32

b) 1.02

c) 0.19

6. $0.15 + 0.57 = 0.72$ or $0.72 - 0.15 = 0.57$

7. a) Calculations will vary but total should be 0.99; for example:

	0	·	Tth	Hth
	0	·	8	7
+	0	·	1	2
	0	·	9	9

b) For decimals with 2 dp:

	0	·	Tth	Hth
	0	·	9	8
-	0	·	1	2
	0	·	8	6

Alternatively, accept 3 dp:

	0	·	Tth	Hth	Thth
	0	·	9	8	7
-	0	·	1		
	0	·	8	8	7

Lesson 4

I can add decimals to make 1

1. a) $0.8 + 0.2 = 1$
b) $0.69 + 0.31 = 1$
2. Pieces matched:
 $0.88 \text{ m} \rightarrow 0.12 \text{ m}$
 $0.766 \text{ m} \rightarrow 0.234 \text{ m}$
 $0.9 \text{ m} \rightarrow 0.1 \text{ m}$
3. $0.84 + 0.26 = 1.1$, not 1. Lexi's mistake is that she forgot about the exchange from the hundredths to the tenths. To make 1, Lexi must add 0.74, so 7 tenths counters and 4 hundredths counters.
4. a) i) 0.62 ii) 0.616 iii) 0.62
b) $0.38 + 0.62 = 1$
 $1 - 0.62 = 0.38$
 $0.62 + 0.38 = 1$
 $1 - 0.38 = 0.62$
5. a) $0.3 + 0.7 = 1$
b) $0.71 + 0.29 = 1$
c) $0.95 + 0.05 = 1$
d) $0.90 + 0.1 = 1$
e) $0.213 + 0.787 = 0.912$
f) $0.912 + 0.088 = 1$
g) $1 - 0.24 = 0.76$
h) $1 - 0.93 = 0.07$
i) $1 - 0.235 = 0.765$
6. a) $0.4 + 0.6 = 1$
 $0.04 + 0.96 = 1$
 $0.004 + 0.996 = 1$
b) $0.4 + 0.6 = 1$
 $0.40 + 0.6 = 1$
 $0.400 + 0.6 = 1$

7. a) Answers will vary; for example:

$$\begin{array}{r}
 \text{O} \quad \cdot \quad \text{Tth} \quad \text{Hth} \quad \text{Thth} \\
 \hline
 0 \quad \cdot \quad 4 \quad 1 \quad 3 \\
 + \quad 0 \quad \cdot \quad 5 \quad 8 \quad 7 \\
 \hline
 1 \quad \cdot \quad 0 \quad 0 \quad 0 \\
 \hline
 \quad | \quad \quad |
 \end{array}$$

b) Answers will vary; for example:

$$\begin{array}{r}
 \text{O} \quad \cdot \quad \text{Tth} \quad \text{Hth} \quad \text{Thth} \\
 \hline
 0 \quad \cdot \quad 1 \quad 5 \quad 7 \\
 + \quad 0 \quad \cdot \quad 8 \quad 4 \quad 3 \\
 \hline
 1 \quad \cdot \quad 0 \quad 0 \quad 0 \\
 \hline
 \quad | \quad \quad |
 \end{array}
 \quad + \quad
 \begin{array}{r}
 \text{O} \quad \cdot \quad \text{Tth} \quad \text{Hth} \quad \text{Thth} \\
 \hline
 0 \quad \cdot \quad 8 \quad 1 \quad 5 \\
 + \quad 0 \quad \cdot \quad 1 \quad 8 \quad 5 \\
 \hline
 1 \quad \cdot \quad 0 \quad 0 \quad 0 \\
 \hline
 \quad | \quad \quad |
 \end{array}$$

Same: The digits in the tenths and hundredths column total 9 and the digits in the thousandths column total 10.

Different: Digits in calculation vary and their positions vary between calculations.

Lesson 5

I can add decimals to make totals greater than 1

1. a)

T	O	·	Tth	Hth
6	·	5	0	
+	4	·	3	1
1	0	·	8	1

The total cost is £10.81.

b)

O	·	Tth	Hth
5	·	7	6
+	3	·	9
9	·	5	5

The total cost is £9.55.

2. a) $2.3 + 4.6 = 6.9$

O	·	Tth
2	·	3
+	4	6
6	·	9

b) $3.5 + 5.8 = 9.3$

O	·	Tth
3	·	5
+	5	8
9	·	3

c) $1.98 + 0.77 = 2.75$

O	·	Tth	Hth
1	·	9	8
+	0	·	7
2	·	7	5

3. a) $0.502 + 4.165 > 3.258 + 0.875$

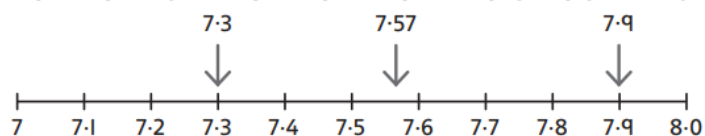
b) $8.62 + 6.18 > 2.63 + 1.71 + 3.26$

4. Zac has not aligned the decimal points, so the digits of 11.2 are in the wrong columns for their value.

T	O	·	Tth	Hth
1	1	·	2	0
+	3	·	6	9
1	4	·	8	9

The correct answer is £14.89.

5. $4.5 + 2.8 = 7.3$ $2.75 + 4.82 = 7.57$ $1.823 + 6.077 = 7.9$



6.

	Theatre	Cinema	Zoo	Circus
Cost for 1 adult and 2 children	£49	£26.33	£44.90	£34.20

They can afford to do any of the activities.