Monday – Lesson 1

Multiplying and dividing by 10, 100 and 1000

Multiply by 10, 100 and 1,000

1 Complete the calculations and sentences.

Use place value counters to help you.

Th	H	T	O	Tth	Hth
			●●●	●●	
			●		

a) 2.3 × 10 = ☐

When the number is multiplied by 10 the counters move ☐ place to the left.

b) 2.3 × 100 = ☐

When the number is multiplied by 100 the counters move ☐ places to the left.

c) 2.3 × 1,000 = ☐

When the number is multiplied by 1,000 the counters move ☐ places to the left.

2 Complete the diagram.

3.06 → × 10 → ☐ → × 10 → ☐

3 a) Draw counters on the place value charts to represent each calculation.

4.4 × 1

Th	H	T	O	Tth	Hth

4.4 × 10

Th	H	T	O	Tth	Hth

4.4 × 100

Th	H	T	O	Tth	Hth

4.4 × 1,000

Th	H	T	O	Tth	Hth

b) Complete the calculations.

4.4 × 1 = ☐

4.4 × 10 = ☐

4.4 × 100 = ☐

4.4 × 1,000 = ☐

What do you notice?

4 Complete the calculations.

a) $13.44 \times 10 = \boxed{}$

d) $4.4 \times \boxed{} = 4{,}400$

b) $41.4 \times 100 = \boxed{}$

e) $\boxed{} = 1.03 \times 100$

c) $0.415 \times 1{,}000 = \boxed{}$

f) $30.44 = \boxed{} \times 10$

5 Complete the diagrams.

$\boxed{7.039} \xrightarrow{\times 10} \boxed{} \xrightarrow{\times 10} \boxed{} \xrightarrow{\times 10} \boxed{}$

$\boxed{7.039} \xrightarrow{\times 100} \boxed{} \xrightarrow{\times 10} \boxed{}$

$\boxed{7.039} \xrightarrow{\times 1{,}000} \boxed{}$

What do you notice? Why does this happen?

_____

_____

_____
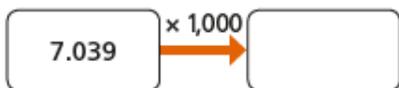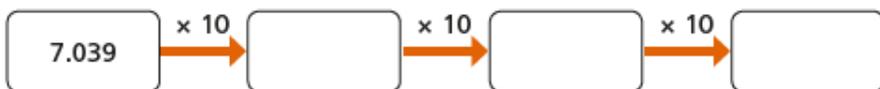
6 Write >, < or = to compare the number sentences.

$1.4 \times 10 \times 10 \times 10$ $\bigcirc$ $1.4 \times 1{,}000$

$1.4 \times 10 \times 100$ $\bigcirc$ $1.4 \times 1{,}000$

$1.4 \times 10 \times 10$ $\bigcirc$ $1.4 \times 1{,}000$

$1.4 \times 10 \times 2$ $\bigcirc$ 1.4×100

7 Kim is calculating 14.3×200

She writes this as her answer.

$$14.3 \times 200 = 28.600$$

Explain Kim's mistake.

_____

_____

_____

8 Use the cards to complete the calculation.

You can use each card more than once.

| $\times 1$ | $\times 10$ | $\times 100$ | $\times 1{,}000$ |

$0.002 \boxed{} \boxed{} \boxed{} = 2{,}000$

How many ways is it possible to complete this calculation?

Talk about it with a partner.

Divide by 10, 100 and 1,000

1 Complete the calculations and sentences.

Use place value counters to help you.

Th	H	T	O	Tth	Hth
	●	●● ●●			

a) $140 \div 10 =$ ▢

When the number is divided by 10 the counters move ▢ place to the right.

b) $140 \div 100 =$ ▢

When the number is divided by 100 the counters move ▢ places to the right.

c) $140 \div 1,000 =$ ▢

When the number is divided by 1,000 the counters move ▢ places to the right.

2 Complete the diagram.

43 → (÷ 10) → ▢ → (÷ 10) → ▢

3 a) Draw counters to represent the calculations.

$123 \div 1$

H	T	O	Tth	Hth	Thth

$123 \div 10$

H	T	O	Tth	Hth	Thth

$123 \div 100$

H	T	O	Tth	Hth	Thth

$123 \div 1,000$

H	T	O	Tth	Hth	Thth

b) Complete the calculations.

$123 \div 1 =$ ▢

$123 \div 10 =$ ▢

$123 \div 100 =$ ▢

$123 \div 1,000 =$ ▢

What do you notice?

4 Complete the calculations.

a) $16 \div 10 = \boxed{}$

d) $332 \div \boxed{} = 0.332$

b) $43.4 \div 100 = \boxed{}$

e) $2.4 \div 200 = \boxed{}$

c) $614 \div 1,000 = \boxed{}$

f) $5.09 = \boxed{} \div 20$

5 Complete the diagrams.

$\boxed{314} \xrightarrow{\div 10} \boxed{} \xrightarrow{\div 10} \boxed{} \xrightarrow{\div 10} \boxed{}$

$\boxed{314} \xrightarrow{\div 100} \boxed{} \xrightarrow{\div 10} \boxed{}$

$\boxed{314} \xrightarrow{\div 1,000} \boxed{}$

What do you notice? Why does this happen?

_____

_____

_____
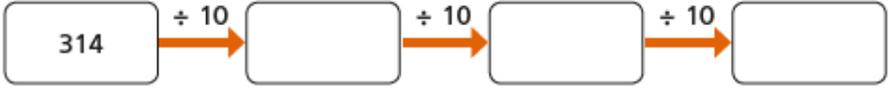
6 Write >, < or = to compare the number sentences.

$5,400 \div 10 \div 10 \div 10 \quad \bigcirc \quad 5,400 \div 1,000$

$60 \div 100 \div 10 \quad \bigcirc \quad 600 \div 100$

$5.7 \div 10 \quad \bigcirc \quad 57 \div 100$

$5,601 \div 1,000 \quad \bigcirc \quad 5.601 \div 10$

7 Dexter is solving the calculation $5,400 \div 100$

I think the answer is 54.00

Is Dexter correct? _____

Explain your reasoning.

_____

_____

8 Rosie is solving the calculation $3,600 \div 200$

I think the answer is 0.36
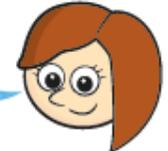
Is Rosie correct? _____

Explain your reasoning.

_____

_____

Tuesday – Lesson 2

Multiplying decimals by integers (whole numbers)

Multiply decimals by integers

1 Use place value counters to solve the calculations.

a) $3.2 \times 3 = \boxed{}$
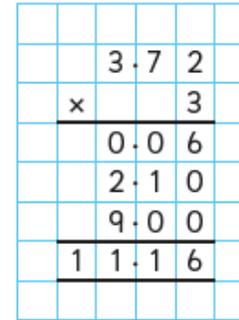
Ones	Tenths
1 1 1	0.1 0.1
1 1 1	0.1 0.1
1 1 1	0.1 0.1

b) $4.6 \times 2 = \boxed{}$

Ones	Tenths
1 1 1 1	0.1 0.1 0.1 0.1 0.1 / 0.1
1 1 1 1	0.1 0.1 0.1 0.1 0.1 / 0.1
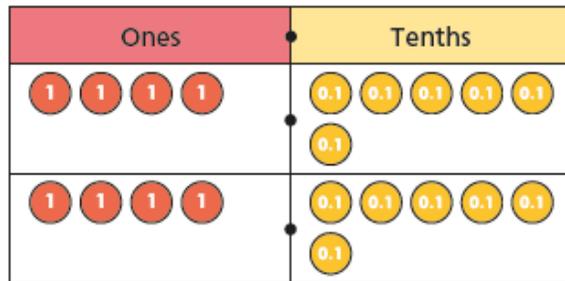
2 Solve the multiplication. Draw your answer.

$12.2 \times 3 = \boxed{}$

Tens	Ones	Tenths

3 Nijah uses long multiplication to solve 3.72×3

		3	.	7	2
	×				3
		0	.	0	6
		2	.	1	0
		9	.	0	0
	1	1	.	1	6

Use long multiplication to work out the calculations.

a)

	4	.	8	6
×				4

b)

	2	.	0	9
×				6
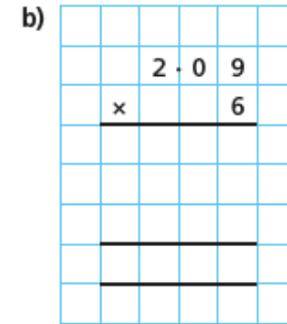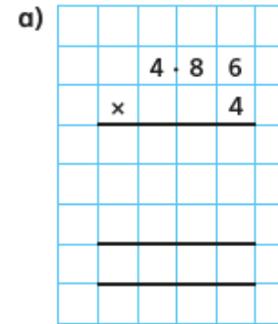
4 Work out the multiplications.

a) $5.2 \times 4 = \boxed{}$

b) $14.3 \times 3 = \boxed{}$

c) $6 \times 9.1 = \boxed{}$

d) $\boxed{} = 2.34 \times 3$

e) $11.505 \times 4 = \boxed{}$

f) $9.602 \times 6 = \boxed{}$

5 0.25 kg of flour is needed to make one cake.

How much flour is needed to make four cakes?

Flour

☐

6 Work out the multiplications.

a) 7.2 × 2 = ☐

7.2 × 4 = ☐

14.4 × 4 = ☐

7.2 × 8 = ☐

b) ☐ = 3.45 × 3

☐ = 34.5 × 3

☐ = 345 × 3

7 Amir is solving 3.4 × 4

To solve this, I did 34 × 4, which was 136
Then I multiplied my answer by 10 to get an answer of 1,360

Do you agree with Amir? _____

Explain why.

_____

_____

_____

8 Use the digits 1, 2, 3 and 4 once each to create a calculation.

| 1 | 2 | 3 | 4 |

☐ . ☐ ☐ × ☐

a) How many different products can you make?

b) What is the greatest possible product?

☐

c) What is the smallest possible product?

☐

d) What is the product closest to 12?

☐

Compare answers with a partner.

Wednesday – Lesson 3
Dividing decimals by integers (whole numbers)

Divide decimals by integers

1 Use place value counters to work out the divisions.

a) 8.4 ÷ 4 = ☐

Ones	Tenths
1 1	0.1 0.1
1 1	0.1 0.1
1 1	
1 1	

b) 12.3 ÷ 3 = ☐

Tens	Ones	Tenths
10	1 1	0.1 0.1
		0.1
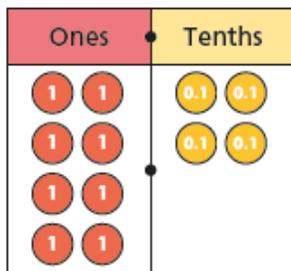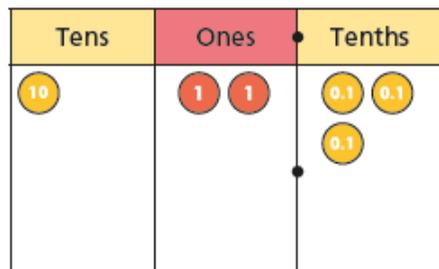
2 Work out the division. Draw your answer.

16.4 ÷ 4 = ☐

Tens	Ones	Tenths
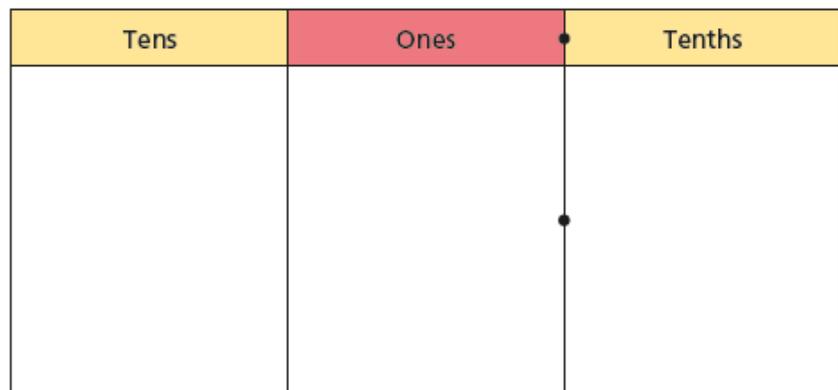
3 Brett uses short division to work out 13.2 ÷ 6

$$\begin{array}{c|cccc} & 0 & 2 \cdot & 2 \\ \hline 6 & 1 & {}^1 3 \cdot & {}^1 2 \end{array}$$
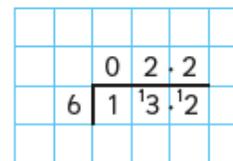
Use short division to work out the calculations.

a)
$$7 \overline{| 2 \; 2 \cdot 4}$$

b)
$$8 \overline{| 1 \; 8 \cdot 4 \; 8}$$
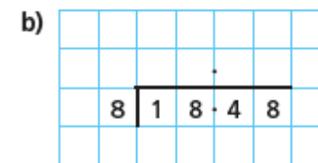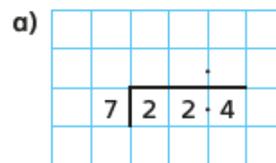
4 Work out the divisions.

a) 25.6 ÷ 8 = ☐

d) ☐ = 19.45 ÷ 5

b) 14.8 ÷ 4 = ☐

e) 202.35 ÷ 3 = ☐

c) 18.48 ÷ 6 = ☐

f) 105.12 ÷ 9 = ☐

5 Esther solves 13.2 ÷ 4 by partitioning 13.2 into two numbers that are easier to divide.

13.2

12 1.2

$÷ 4$ $÷ 4$

3 0.3

$13.2 ÷ 4 = 3.3$
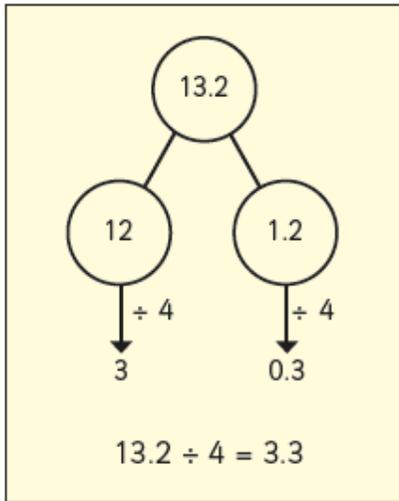
Use Esther's method to complete the part-whole model and calculation.

a)

9.2

$9.2 ÷ 4 = $ ☐

b)

16.5
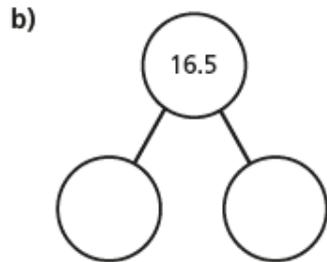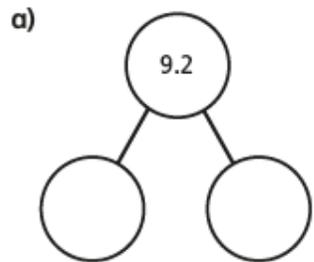
$16.5 ÷ 3 = $ ☐

Compare answers with a partner. Did you partition your numbers in the same way?

6 Work out the divisions.

a) $9.64 ÷ 4 = $ ☐

$96.4 ÷ 4 = $ ☐

$0.964 ÷ 4 = $ ☐

$9.64 ÷ 8 = $ ☐

b) $19.44 ÷ 9 = $ ☐

$19.53 ÷ 9 = $ ☐

$19.62 ÷ 9 = $ ☐

7 Fill in the missing numbers.

$3.6 ÷ 4 = 36 ÷$ ☐

$3.6 ÷ 4 = $ ☐ $÷ 8$

8 Complete the calculation.

$8.4 ÷$ ☐ $= 4.2 ÷$ ☐

How many different solutions can you find?

What patterns do you notice? Talk about it with a partner.

Thursday – Lesson 4

Decimals as fractions

Decimals as fractions

1 Complete the sentences.

a)

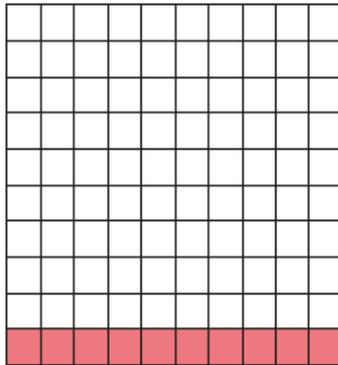| 0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
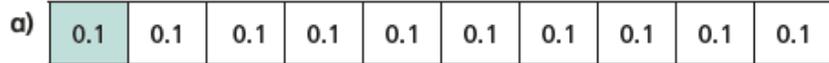
The whole has been divided into ☐ equal parts.
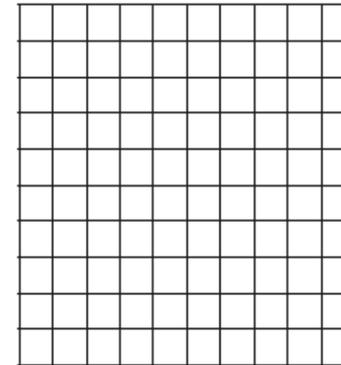
Each part is worth ☐

This is equivalent to ☐

b)

The whole has been divided into ☐ equal parts.

Each part is worth ☐

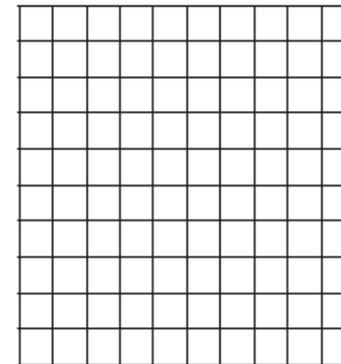☐ parts out of ☐ are shaded.

This is equivalent to ☐

2 a) Shade 0.17 of the hundred square.

Complete the sentence.

☐ parts out of ☐ are shaded.

Write 0.17 as a fraction.
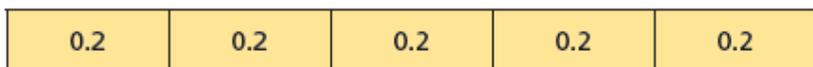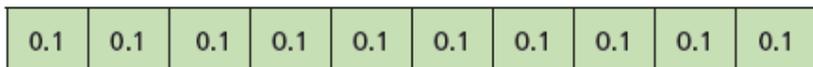
0.17 = ☐

b) Shade 0.2 of the hundred square.

Complete the sentence.

☐ parts out of ☐ are shaded.

Write 0.2 as a fraction in its simplest form.

0.2 = ☐

3

0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

0.2	0.2	0.2	0.2	0.2

Use the bar models to fill in the missing numbers.

$0.2 = \dfrac{\square}{10} = \dfrac{1}{\square}$

$0.4 = \dfrac{\square}{10} = \dfrac{2}{\square}$

$\square = \dfrac{\square}{10} = \dfrac{4}{5}$

4 Fill in the missing numbers.

a) $0.54 = \dfrac{\square}{100} = \dfrac{\square}{50}$

b) $0.6 = \dfrac{\square}{10} = \dfrac{\square}{5}$
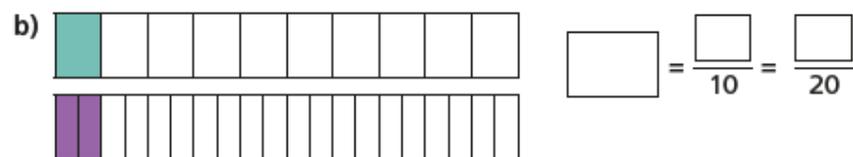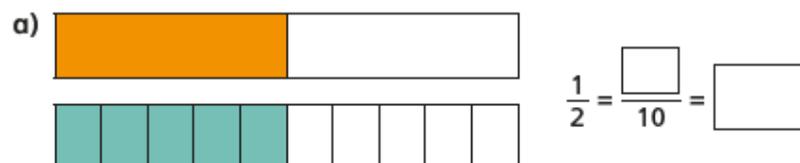
c) $0.3 = \dfrac{\square}{10} = \dfrac{\square}{100}$

d) $\boxed{} = \dfrac{9}{100}$

e) $\boxed{} = \dfrac{9}{10}$

f) $\dfrac{21}{50} = \dfrac{\square}{100} = \boxed{}$

5 Use the bar models to fill in the missing numbers.

a)

$\dfrac{1}{2} = \dfrac{\square}{10} = \boxed{}$

b)

$\boxed{} = \dfrac{\square}{10} = \dfrac{\square}{20}$
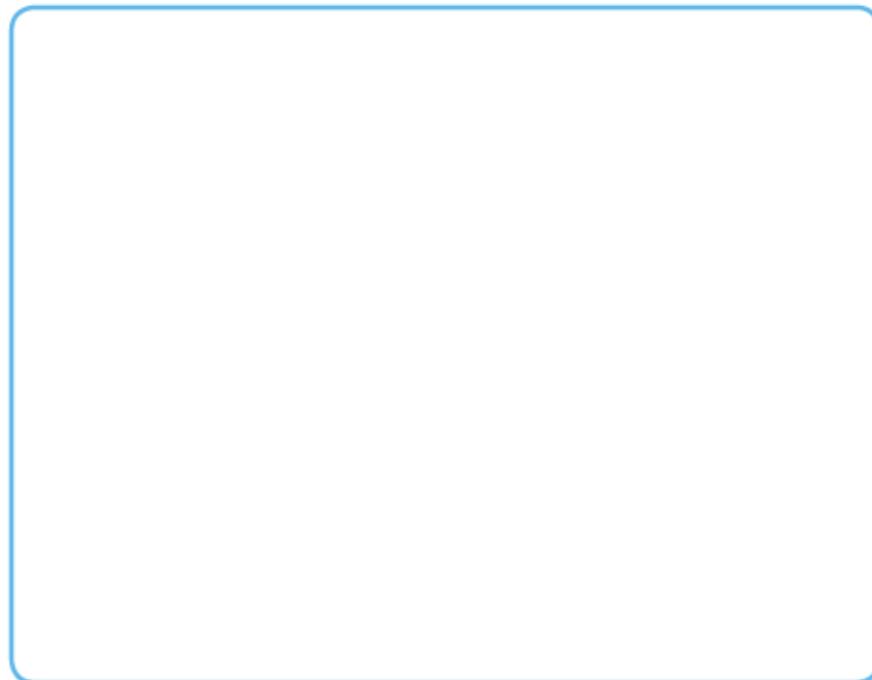
6

$0.3 = \dfrac{3}{10}$ so $0.37 = \dfrac{37}{10}$

Draw a diagram to show that Ron is wrong.

Friday

Note to Parents:

The Friday Challenge will be made available on the White Rose Year 6 Home Learning page closer the time. 😋