Year 6

Wednesday 20th May 2020
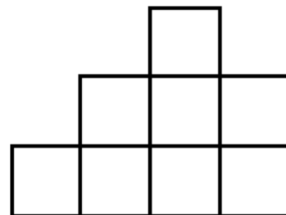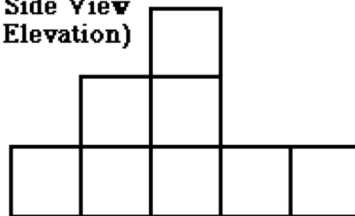
Maths

LO: divide decimals by integers.

Please note: this link only works on either pdf or the link above this powerpoint.
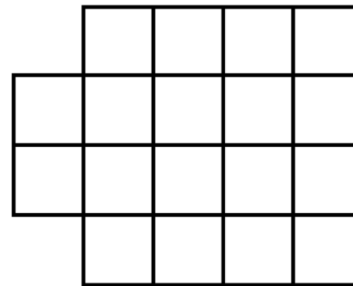The video lesson is available here – Summer Term - Week 5 - lesson 3

Brain Melter!

Hilda was playing with her building bricks when she made a tower like the one below:

How many bricks did Hilda use altogether?

Mr Rose is building some garden furniture.

His plank of wood is 3.96 m long.

He needs to cut it into 3 equal pieces.

How long is each piece?

Step 1: I use this place value chart to help group the wood into 3s.

One	Tenths	Hundredths
1 1	0.1 0.1	0.01 0.01
1	0.1 0.1	0.01 0.01
	0.1 0.1	0.01 0.01
	0.1 0.1	
	0.1	

Or: I use a bus stop method to divide the plank into 3 pieces.

$$3 \overline{)3.96} = 1.32$$

1:

Does this place value chart represent....

4.2 m or 4.02m?

One	Tenths	Hundredths
1 1 1 1		0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01

2:

Mr Rose has another plank of wood that is 4.08 m long.

He needs to cut it into four equal pieces.

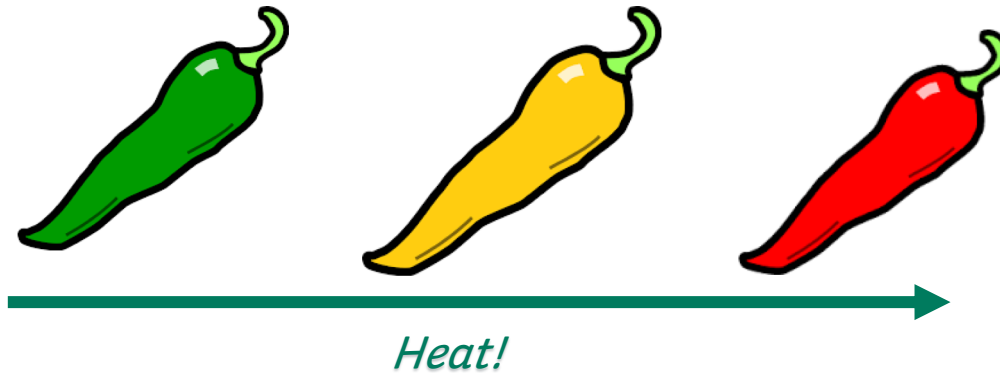How long is each piece?

3a:

$3 \overline{)43.08}$

3b:

$8 \overline{)2}$

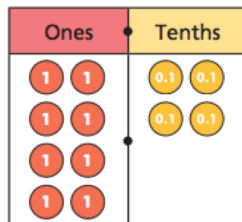The independent work continues on the next two slides. There are 7 questions and 1 extension.

(Espanol - siete preguntas y una extensión.)
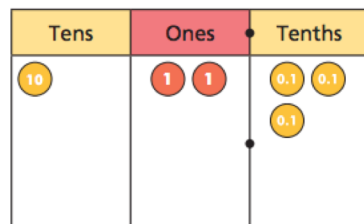
Heat!

Divide decimals by integers

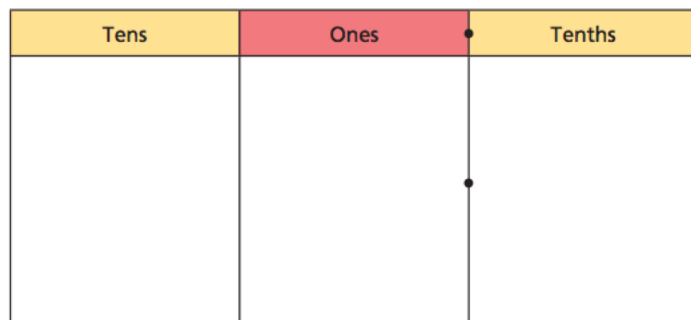**1** Use place value counters to work out the divisions.

a) $8.4 \div 4 =$ [ ]

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

b) $12.3 \div 3 =$ [ ]

Tens	Ones	Tenths
10	1 1	0.1 0.1 0.1

2 Work out the division. Draw your answer.

$16.4 \div 4 =$ [ ]

Tens	Ones	Tenths

3 Brett uses short division to work out $13.2 \div 6$

$$6 \overline{)1\ 3.\!^{1}2} = 0\ 2.2$$

Use short division to work out the calculations.

a)

$$7 \overline{)2\ 2.4}$$

b)

$$8 \overline{)1\ 8.4\ 8}$$

4 Work out the divisions.

a) $25.6 \div 8 =$ [ ]

d) [ ] $= 19.45 \div 5$

b) $14.8 \div 4 =$ [ ]

e) $202.35 \div 3 =$ [ ]

c) $18.48 \div 6 =$ [ ]

f) $105.12 \div 9 =$ [ ]

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5 Esther solves $13.2 \div 4$ 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
       /    \
      ( )   ( )
```

b)
```
        16.5
       /    \
      ( )   ( )
```
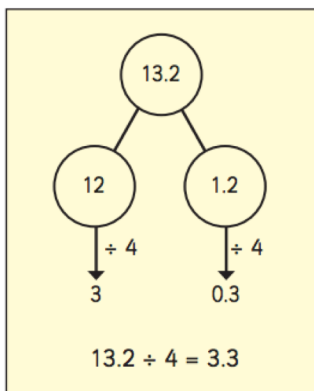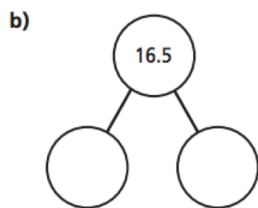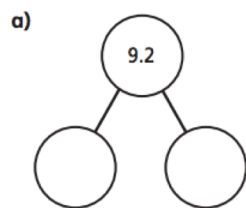
$9.2 \div 4 = \boxed{}$

$16.5 \div 3 = \boxed{}$

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

6 Work out the divisions.

a) $9.64 \div 4 = \boxed{}$

$96.4 \div 4 = \boxed{}$

$0.964 \div 4 = \boxed{}$

$9.64 \div 8 = \boxed{}$

b) $19.44 \div 9 = \boxed{}$

$19.53 \div 9 = \boxed{}$

$19.62 \div 9 = \boxed{}$

7 Fill in the missing numbers.

$3.6 \div 4 = 36 \div \boxed{}$

$3.6 \div 4 = \boxed{} \div 8$

Ext: Complete the calculation.

$8.4 \div \boxed{} = 4.2 \div \boxed{}$

How many different solutions can you find?

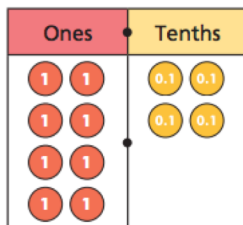What patterns do you notice? Talk about it with a partner.

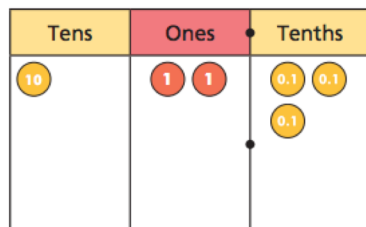The next two slides contain the answers should you wish to check you work and reflect on what you understand.

Divide decimals by integers

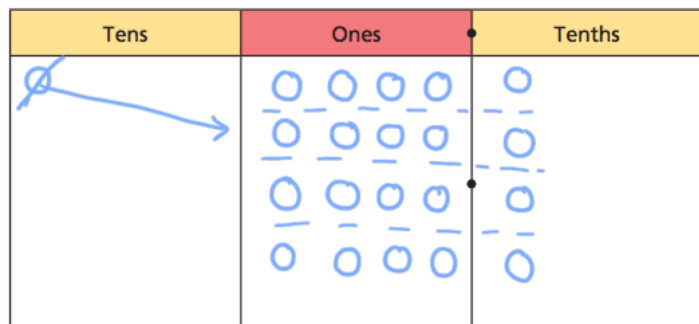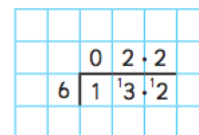**1** Use place value counters to work out the divisions.

a) $8.4 \div 4 = \boxed{2 \cdot 1}$

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

b) $12.3 \div 3 = \boxed{4 \cdot 1}$

Tens	Ones	Tenths
10	1 1	0.1 0.1 0.1

2 Work out the division. Draw your answer.

$16.4 \div 4 = \boxed{4 \cdot 1}$

Tens	Ones	Tenths
∅	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	○ ○ ○ ○

3 Brett uses short division to work out $13.2 \div 6$

$$6 \overline{)1\ ^13\cdot\ ^12} = 0\ 2\cdot 2$$

Use short division to work out the calculations.

a)
$$7 \overline{)2\ ^22\cdot\ ^24} = 0\ 3\cdot 2$$

b)
$$8 \overline{)1\ 8\cdot\ ^24\ 8} = 0\ 2\cdot 3\ 1$$

4 Work out the divisions.

a) $25.6 \div 8 = \boxed{3 \cdot 2}$

b) $14.8 \div 4 = \boxed{3 \cdot 7}$

c) $18.48 \div 6 = \boxed{3 \cdot 08}$

d) $\boxed{3 \cdot 89} = 19.45 \div 5$

e) $202.35 \div 3 = \boxed{67 \cdot 45}$

f) $105.12 \div 9 = \boxed{11 \cdot 68}$

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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
8   **1·2**
÷4   ÷4
2   **0·3**

b)
16.5
15   **1·5**
÷3   ÷3
5   **0·5**
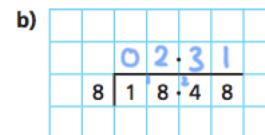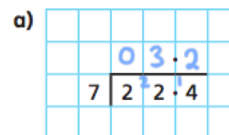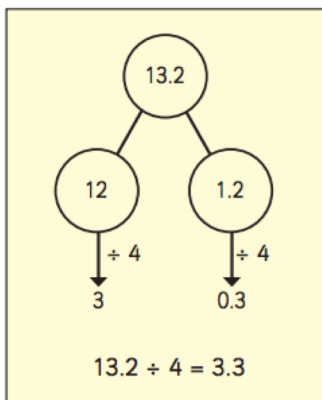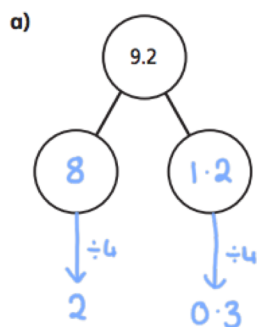
9.2 ÷ 4 = **2·3**

16.5 ÷ 3 = **5·5**

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

6 Work out the divisions.

a) 9.64 ÷ 4 = **2·41**

96.4 ÷ 4 = **24·1**

0.964 ÷ 4 = **0·241**

9.64 ÷ 8 = **1·205**

b) 19.44 ÷ 9 = **2·16**

19.53 ÷ 9 = **2·17**

19.62 ÷ 9 = **2·18**

7 Fill in the missing numbers.

3.6 ÷ 4 = 36 ÷ **40**

3.6 ÷ 4 = **7·2** ÷ 8

Ext:

Complete the calculation.

e.g. 8.4 ÷ **2** = 4.2 ÷ **1**

How many different solutions can you find?

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