

### Recall of facts

Learn and recall multiplication and division facts up to  $12 \times 12$  and use place value to derive related facts

$6 \times 7 = 42$   $70 \times 6 = 420$   $42 \div 6 = 7$   
 $420 \div 6 = 70$  Divide 63 by 7  
 350 divided by 5  
 How many sixes in 54?  
 $108 \div 12$  – what is the quotient?

### Continue to use the inverse relationship between

$8 \times 7 = 56$   $56 \div 7 = 8$   
 $56 \div 8 = 7$   $8 \times 7 = 56$

$38 + 4 = 42$   
 $48 + 4 = 52$

### Relate division and fractions

$\frac{1}{8}$  of 56 is the same as  $56 \div 8$   
 $\frac{3}{7}$  of 56 is the same as  $(56 \div 7) \times 3$

|               |               |               |               |               |               |               |               |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 56            |               |               |               |               |               |               |               |
| $\frac{1}{7}$ | $\frac{1}{7}$ | $\frac{1}{7}$ | $\frac{1}{7}$ | $\frac{1}{7}$ | $\frac{1}{7}$ | $\frac{1}{7}$ | $\frac{1}{7}$ |
| 8             | 8             | 8             | 8             | 8             | 8             | 8             | 8             |

### Multiplication and division can be represented in different ways...

These structures show the relationship between multiplication and division.

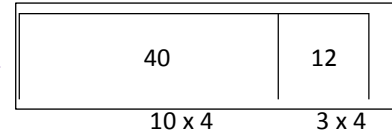
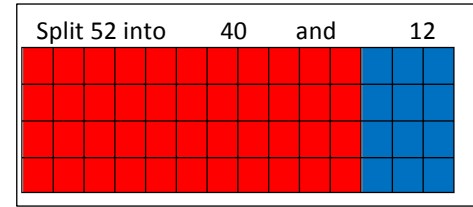
$38 \times 4$

|   |       |       |       |       |
|---|-------|-------|-------|-------|
| x | 30    |       |       | 8     |
|   | 10x4  | 10x4  | 10x4  |       |
| 4 | ***** | ***** | ***** | ***** |
|   | ***** | ***** | ***** | ***** |
|   | ***** | ***** | ***** | ***** |
|   | ***** | ***** | ***** | ***** |

|   |     |    |
|---|-----|----|
| X | 30  | 8  |
| 4 | 120 | 32 |

$$\begin{array}{r} 38 \\ \times 4 \\ \hline 32 \quad (8 \times 4) \\ 120 \quad (30 \times 4) \\ \hline 152 \end{array}$$

$52 \div 4$



$$4 \overline{) 52} = 13$$

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### Always Sometimes Never?

Numbers in the nine times table have digits that add up to 9

*Year 4*  
*Multiplication and Division*  
*(including fractions)*

### Prove it

Multiples of 6 are also multiples of 2 and of 3

### Partition numbers for division by using factors

$161 \div 7$  - partition 159 into 140 and 21  
 Use times tables knowledge to know that 140 is divisible by 7 –  $20 \times 7$   
 21 is divisible by 7 –  $3 \times 7$

### Calculating with measures

6 pens cost £2.40 How much does each pen cost?

|       |   |   |   |   |   |
|-------|---|---|---|---|---|
| £2.40 |   |   |   |   |   |
| ?     | ? | ? | ? | ? | ? |

Using knowledge of times tables, I know that  $240 \div 6 = 40$  linked to  $24 \div 6$

Therefore  $£2.40 \div 6 = 40p$  for each pen.

Use the inverse operation to check  $40p \times 6 = £2.40$

How many rectangles can you draw with an area of  $36cm^2$ ?

Mark is doing a sponsored silence. He says, "If I am silent for five hours at 10p per minute I will raise 50 pounds." Is he correct? Prove it

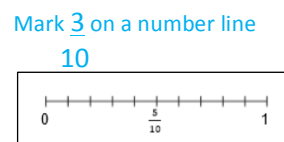
### Use a variety of words

multiple, multiply, array, tables, times, product, twice, double, repeated addition, factor, divide, divisible by, divided into, quotient, divisor, remainder

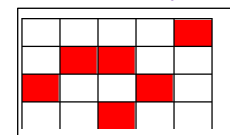
### Equivalence

$\frac{3}{10}$  of a number. Divide the whole number into 10 equal parts then  $\times$  by 3

$\frac{3}{10}$  written as a decimal – 0.3  
 Mark  $\frac{3}{10}$  on a number line

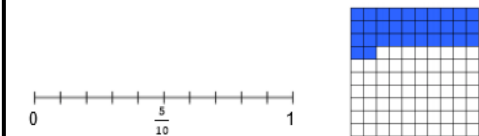


$\frac{3}{10}$  of a shape



### Fractions and decimals

Counting in tenths  $\frac{1}{10}$  0.1 and hundredths  $\frac{1}{100}$  0.01



### Scaling – linking $\times$ and $\div$

For every flower, there are 6 leaves

|        |   |   |   |        |        |
|--------|---|---|---|--------|--------|
| Flower | 1 | 2 | 3 | .....? | .....? |
| Leaves | 6 | ? | ? | 42     | 60     |