

Short division

WORKED EXAMPLE

The worked example shows the short division of 964 by 4. The calculation is written as $4 \overline{) 964}$ with the quotient 241 written above the line. To the right, four boxes of place value counters illustrate the process:

- Box 1: 9 hundreds (green), 6 tens (red), and 4 ones (yellow).
- Box 2: 2 hundreds (green) are boxed, leaving 1 hundred (green), 6 tens (red), and 4 ones (yellow).
- Box 3: The 1 hundred (green) is exchanged for 10 tens (red), resulting in 16 tens (red) and 4 ones (yellow).
- Box 4: 4 tens (red) are boxed, leaving 2 tens (red) and 4 ones (yellow).

$$964 \div 4 = 241$$

9 hundreds shared into 4 groups is 2 hundreds with 1 hundred left over. We need to regroup this into 10 tens.

We now have 16 tens to share into 4 groups. 16 tens shared into 4 groups is 4 in each group. There are no tens remaining.

4 ones shared between 4 groups is 1 one.

In each group there are 2 hundreds, 4 tens and 1 one.

REHEARSE

Solve these calculations using short division and place value counters. Now solve each calculation using long division.

What is the same and what is different about each layout?

$$753 \div 3$$

$$568 \div 4$$

$$805 \div 5$$

APPLY AND EXPLORE

Sort the calculations into those which will require regrouping of hundreds to tens, regrouping of tens to ones, or regrouping of both.

$786 \div 6$	$464 \div 4$	$918 \div 7$
$572 \div 5$	$525 \div 3$	$984 \div 8$

REHEARSE

Now solve the calculations. Which was easiest to solve? Which was trickiest to solve?

3&4LS17 Y4: Step 1

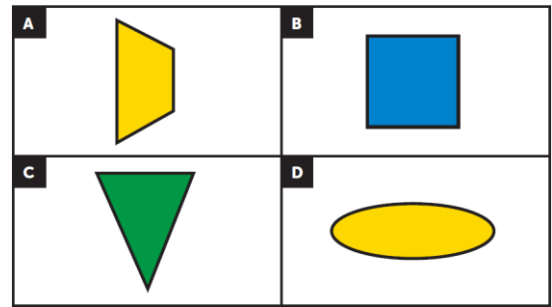
Rehearse and Reason

RETRIEVE

Can I still classify shapes?

Which of these shapes are **not** quadrilaterals?

What can you say about the shapes?



REHEARSE

Solve the following calculations using short division.

Set 1:

$546 \div 6$

$279 \div 3$

$265 \div 4$

$610 \div 8$

Set 2:

$804 \div 4$

$607 \div 3$

$606 \div 6$

$704 \div 7$

What do you notice about each set of calculations?

APPLY AND EXPLORE

The quotient to each of these questions is 156 remainder 2.

What is the dividend in each calculation?

Explain how you have found each dividend.

$$3 \overline{) \begin{array}{r} 156 \text{ r.}2 \\ \square \square \square \end{array}}$$

$$4 \overline{) \begin{array}{r} 156 \text{ r.}2 \\ \square \square \square \end{array}}$$

$$5 \overline{) \begin{array}{r} 156 \text{ r.}2 \\ \square \square \square \end{array}}$$

$$6 \overline{) \begin{array}{r} 156 \text{ r.}2 \\ \square \square \square \end{array}}$$