



## Year 4

### Area

- find the area of rectilinear shapes by counting squares
- find the area by calculating length of sides

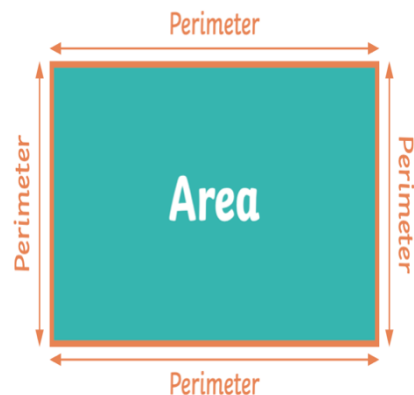
### Multiplication and division

- use place value, known and derived facts to multiply and divide mentally including multiplying together 3 numbers
- multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- solve problems involving multiplying and adding
- dividing larger numbers using short division

### Area and Perimeter

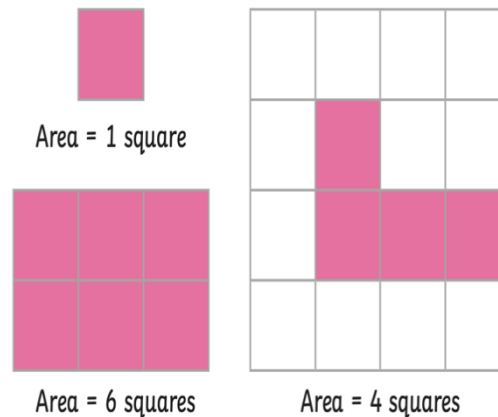
**Area** is the amount of space inside a 2D shape.

**Perimeter** is the total **distance** around the outside of a 2D shape.



### Measuring Area

We can count **squares** to find the **area** of a **rectilinear** shape.



### Multiply Using Formal Written Methods

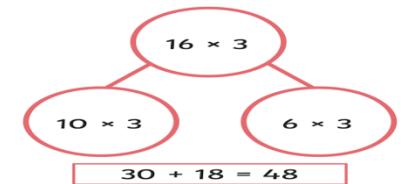
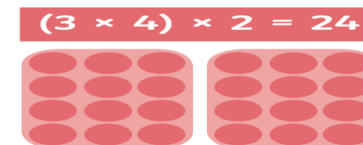
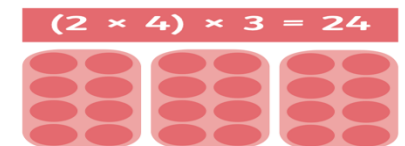
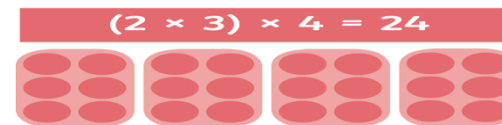
Th	H	T	O
	5	4	3
×			4
		1	2
	1	6	0
2	0	0	0
2	1	7	2

$(4 \times 3)$   
 $(4 \times 40)$   
 $(4 \times 500)$

Th	H	T	O
	5	4	3
×			4
2	1	7	2
	1	1	

Remember to move any regrouped numbers into the next column. After the next multiplication, add the regrouped number to the answer.

### Mental Calculations for Solving Problems



### Short Division with Exact Answers

There are 69 tennis balls packed in tubes of 3.

There are 23 tubes altogether.

$$69 \div 3 = 23$$

$$\begin{array}{r} 3 \overline{) 69} \end{array}$$

69		
23	23	23



## Year 5

### Area

- calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>).
- estimate the area of irregular shapes

### Multiplication and division

- multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
- multiply and divide numbers mentally, drawing upon known facts
- divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign

### Short Multiplication

$$2543 \times 7 = 17801$$

	2	5	4	3
x				7
<hr/>				
1	7	8	0	1

Remember to move any regrouped digits into the next column. After the next multiplication, add the regrouped number to the answer.

### Long Multiplication

$$2543 \times 67 = 170381$$

		2	5	4	3
	x			6	7
<hr/>					
1	7	8	0	1	
1	3	3	2		
<hr/>					
1	5	2	5	8	0
1	3	2	1		
<hr/>					
1	7	0	3	8	1

Before multiplying by the number in the tens column, remember to use zero as a placeholder because the 6 in 67 is 6 tens (60).

### Division

$$136 \div 4 = 34$$

		3	4
4	1	3	6
-	1	2	0
<hr/>			
		1	6
	-	1	6
<hr/>			
			0

$$30 \times 4$$

$$4 \times 4$$

### Short Division

		3	8
4	1	5	2

$$15 \div 4 = 3 \text{ remainder } 3$$

Remember to regroup any remainders and move them into the next column.

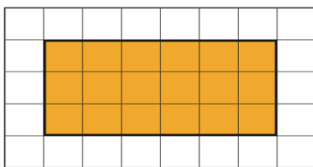
		4	5	5	r	3
5	2	2	7	8		

$$28 \div 5 = 5 \text{ remainder } 3$$

If your calculation has a remainder, remember to record it in the answer using the letter r.

#### Area of Rectangles

The area of a rectangle on a grid:



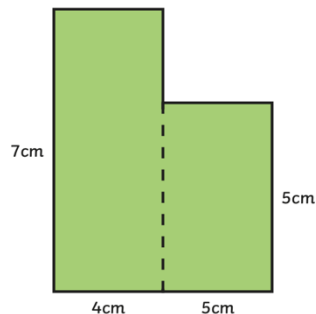
$$\text{Multiply the length} \times \text{width} \\ = 6 \times 3 = 18 \text{ squares.}$$

The area of a rectangle = length (l)  $\times$  width (w).



#### Area of Compound Shapes

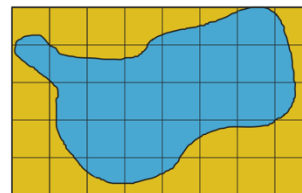
To find the area of a compound shape, divide the shape into rectangles with known dimensions:



$$\text{Area} = 7\text{cm} \times 4\text{cm} + 5\text{cm} \times 5\text{cm} \\ = 28\text{cm}^2 + 25\text{cm}^2 \\ = 53\text{cm}^2$$

#### Area of Irregular Shapes

To find the area of an irregular shape, find the number of whole squares and part squares.



Whole squares = 10  
Part squares = 22

$$\text{Estimate of area} = \text{whole squares} + \text{half part squares} \\ = 10\text{cm}^2 + 11\text{cm}^2 = 21\text{cm}^2$$