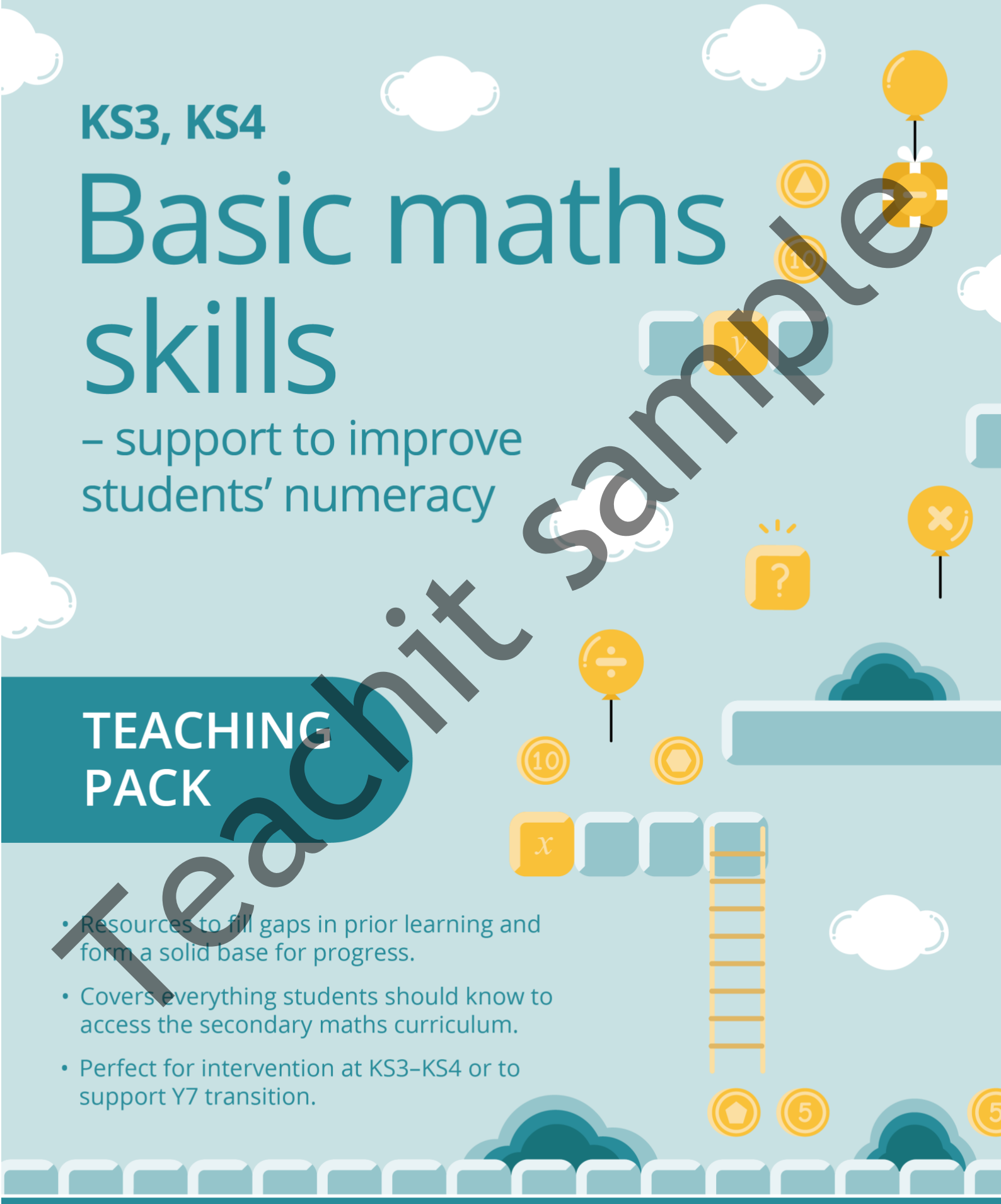
KS3, KS4

Basic maths skills

– support to improve students' numeracy



TEACHING PACK

- Resources to fill gaps in prior learning and form a solid base for progress.
- Covers everything students should know to access the secondary maths curriculum.
- Perfect for intervention at KS3–KS4 or to support Y7 transition.

Contents

Section 1 – Students' section

N1 number: number and place value

N2 number: addition, subtraction, multiplication and division

N3 number: fractions, decimals and percentages

RP ratio and proportion

A algebra

In this task, you will:

- solve addition and subtraction multi-step problems in context, deciding which methods to use and why.

1. A salesman has to travel 348 miles. In the first two hours, he travels 63 miles. In the next three hours, he travels a further 94 miles. How much further does he have to travel?
2. Use the operations **+** and **–** to make this calculation correct.

   17 ☐ 9 ☐ 15 ☐ 8 = 19
3. A baker has 1043 loaves of bread at the start of the day. In the morning, 593 loaves are sold and a further 396 loaves are sold in the afternoon. How many loaves of bread are there left at the end of the day?
4. In a garden centre, a rose plant costs £6.48, lily seeds cost £1.95 and daffodil bulbs cost 65p each. Mavis buys a rose plant and five daffodil bulbs. How much change does she get from a £10 note?
5. Circle the three numbers that total 100.

   48 39 26 47 14 19
6. Write the missing digits to make this addition sum correct.

   ☐4☐
   \+ ☐☐
   4052
7. Keith bought a writing pad and a pen. He paid **£1.40**. Katy bought a writing pad and 2 pens. She paid **£1.95**.

   Calculate the cost of a writing pad.
8. Use all four digits to complete each of the following calculations:

   a. **9**, **2**, **6** and **4**

   ☐☐ – ☐☐ = 27

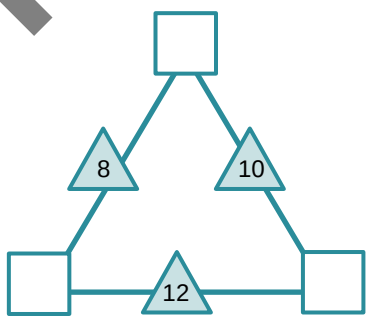
   b. **3**, **8**, **5** and **4**

   ☐☐ – ☐☐ = 51

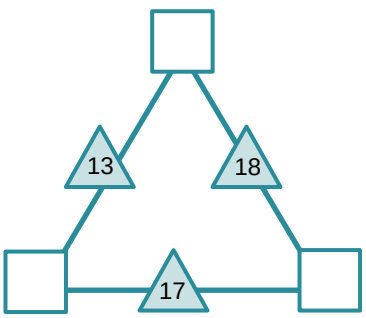
Challenge

The number in each triangle is equal to the sum of the numbers in the squares on either side. Find the missing numbers.

a.



b.



In this task, you will:

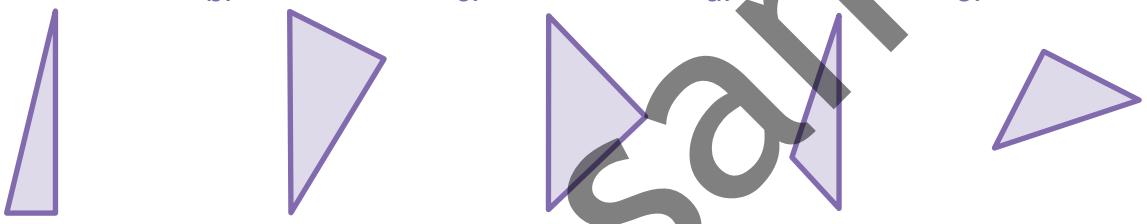
- solve problems involving the calculation and conversion of units
- use, read, write and convert between standard units of length, mass, volume and time.

1. One angle in a parallelogram is 72°. Find the size of the other angle, as shown.

2. One angle in an **isosceles** triangle is 50°. Find the size of the other angles. There are two possible answers – can you find them both?

3. Here are five triangles. Write down the letter of each triangle that has a right angle.

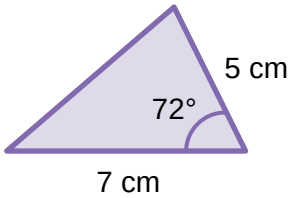
a. b. c. d. e.



4. Draw three different hexagons that contain **at least one** right angle.

5. Using a ruler and a protractor or set square, draw an 8 cm × 3 cm rectangle.

6. Here is a sketch of a triangle. It is not drawn to scale.
Using a pencil, ruler and protractor, make an accurate drawing of the triangle.



7. Copy each parallelogram then add **one** line to make a:

a. Rhombus

b. Trapezium

8. A kite has a perimeter of 20 cm. If one of the sides measures 4 cm, find the lengths of the other sides.
Draw an **accurate** diagram of your kite.

Challenge

1. **Draw** to the exact size a **rhombus** with side lengths of 6 cm and one of the angles equal to 60°. Use a pencil, ruler and protractor.

Teaching notes and curriculum mapping

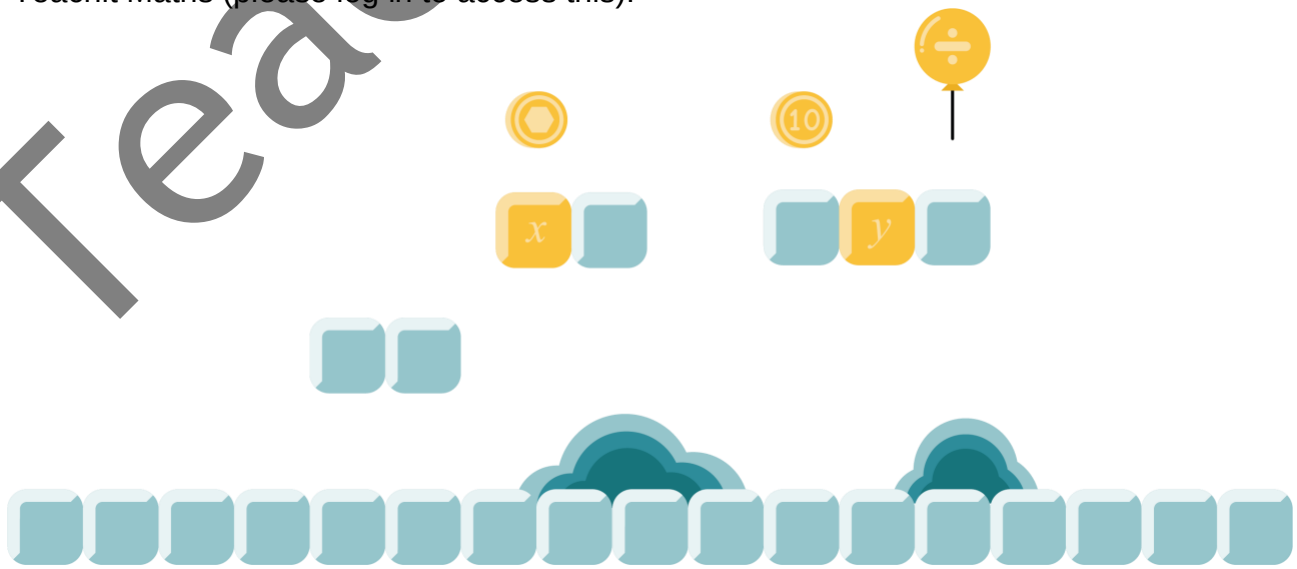
This resource aims to provide secondary maths teachers with photocopiable resources to help develop numeracy with students who need extra support.

Based on the year 6 national curriculum objectives, the resources could be used with those year 7 students entering the school who are still working towards the year 6 expected standard or with students in higher years who need extra support with basic skills, including in one-to-one support sessions.

The resource is divided into two sections – a teacher's section (including teaching notes, curriculum mapping, answers and a tick list to enable teachers to track which tasks students have completed) and a students' section, which contains units for number, ratio and proportion, algebra, geometry and measures and statistics.

Each unit comprises a set of photocopiable tasks. Each task is mapped to one or more of the requirements of the national curriculum for maths year 6 and is intended to consolidate learning that students have covered during their time at school but are not yet secure with.

We hope you enjoy using this resource. If you have any questions, please get in touch: email support@teachitmaths.co.uk. Alternatively, you might like to give some feedback for other Teachit Maths members – you can do this by adding a comment on the page on Teachit Maths (please log in to access this).



N2:6 – BODMAS

	Answers		
1.	7 – 5 + 4 = 11 – 5 = 6	7.	7 + 3 × 4 = 7 + 12 = 19
2.	5 – 7 + 4 = 9 – 7 = 2	8.	9 – 3 × 2 = 9 – 6 = 3
3.	7 × 3 – 2 = 21 – 2 = 19	9.	18 – 5 × 3 = 18 – 15 = 3
4.	2 × 6 + 3 = 12 + 3 = 15	10.	7 + 15 ÷ 5 = 7 + 3 = 10
5.	8 ÷ 2 + 5 = 4 + 5 = 9	11.	(8 – 5) × 4 = 3 × 4 = 12
6.	12 ÷ 2 – 3 = 6 – 3 = 3	12.	(2 + 7) ÷ 3 = 9 ÷ 3 = 3

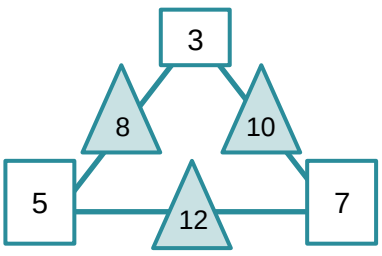
	Challenge answers			
1.	a.	8 × (4 – 2) = 16	2.	Possible answers: 5 × 6 = 30
	b.	12 ÷ (1 + 5) = 2		5 × (8 – 2) = 5 × 6 = 30
	c.	(3 + 4) × 5 = 35		8 × (5 – 2) + 6 = 8 × 3 + 6 = 24 + 6 = 30
	d.	(9 – 3 × 2) × 5 = 15		(5 + 6) × 2 + 8 = 11 × 2 + 8 = 22 + 8 = 30
	e.	(9 – 3 × 2) × 5 = 15		2_5 + 6 – 8 = 32 + 6 – 8 = 30

N2:7 – Addition and subtraction multi-step problems

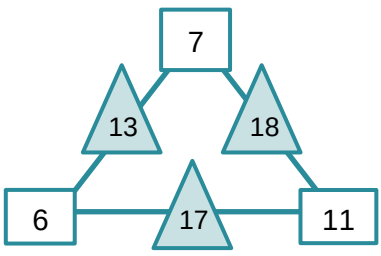
	Answers
1.	191 miles
2.	17 + 9 – 15 + 8 = 19
3.	54 loaves
4.	27p
5.	39 + 47 + 14 = 100
6.	3 4 5 7 5 9 5 4 0 5 2
7.	85p
8.	a. 6 9 – 4 2 = 27 b. 8 5 – 3 4 = 49

Challenge answers

a.

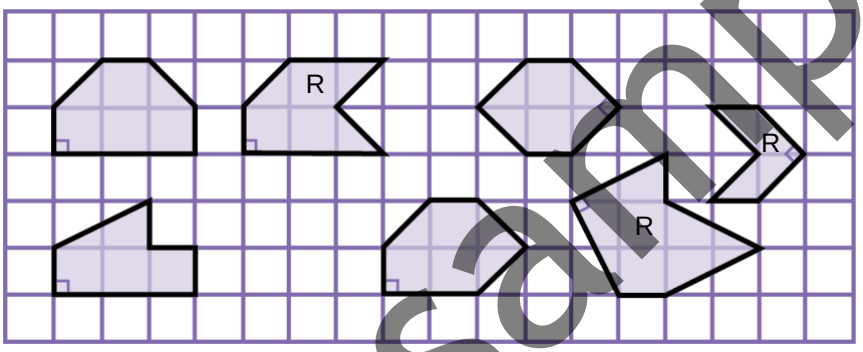
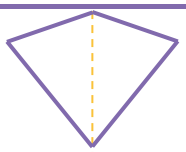


b.



GM2 Geometry and measures: properties of shape

GM2:1 – 2D shapes

	Answers		
1.	108°		
2.	Triangle 1: Angles: 50°, 50°, 80°	Triangle 2: Angles: 50°, 65°, 65°	
3.	A, C and E all have a right angle.		
4.	 Some examples		
5.	Students' drawings	6.	Students' drawings
7. a.	The dashed orange lines represent the diagonals that should bisect each other at right angles. All four sides should measure the same length.		
b.	There are many different trapeziums that can be made, and they don't need to be isosceles so long as there is one pair of parallel lines.		
8.	Sides are: 4 cm, 4 cm, 6 cm, 6 cm.		

Challenge answers	
1.