



Welcome to Sackville School Year 7 Maths Workshop

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Maths is used every day

- ▶ A recipe is for 4 so what quantities do I need for 10?
- ▶ How much will this shirt cost with 15% off?
- ▶ How much paint do I need to decorate my bedroom?
- ▶ How much will it cost to fill my car with petrol?
- ▶ How many euros will I get for £100?
- ▶ How long will it take me to drive to my friends?
- ▶ If I put £100 in my savings account at 2.7% interest, how much will I have after 3 years?
- ▶ How can I share 2 pizzas equally between 5 people?



Maths At Sackville

- ▶ 3 lessons a week
- ▶ Students are set according to ability
- ▶ Differentiated Scheme of Work used by all teachers
- ▶ Calculators not used in Year 7 – focus is on numeracy and algebra
- ▶ 5 milestone tests during a year and an end of year exam
- ▶ Problem solving skills encouraged in lesson structure

Maths sets at Sackville



- ▶ Two parallel bands – J and K
- ▶ Each band has one top set and two sets of two classes of mixed ability; set 2 and set 3

7J1	7K1
7J2a 7J2b	7K2a 7K2b
7J3a 7J3b	7K3a 7K3b

- ▶ Class groupings are regularly reviewed
- ▶ Students will be given a MEG level
(**Minimum Expected Grade**)



Homework

- ▶ Homework is set once a week on the Hegarty Maths website
- ▶ Homework details on Show My Homework
- ▶ Students can set alerts on Show My Homework

What does a homework on HegartyMaths look like?

hegartymaths

Perimeter (4)

Example
Work out the **perimeter** of this shape.

$2 \times 12 = 24\text{m}$

$8 + 5 + 5 + 8 = 26\text{m}$

551 - Perimeter (4)

Learn how to find the perimeter of a compound shape.

Video watched 0.00x

Your score **New lesson** HegartyMaths avg 60%

[Do quiz](#)

Step 1:

Video where Mr. Hegarty teaches you everything you need to know about that topic & goes through all the examples that will be in the quiz.

Step 1:

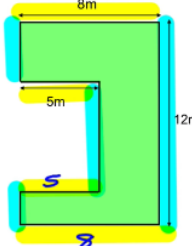
Watch the video, take notes of all modelled examples.

Perimeter (4)

Example
Work out the perimeter of this shape.

$2 \times 12 = 24m$

$8 + 5 + 5 + 8 = 26m$

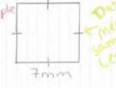


You will turn each video into fantastic notes in your HegartyMaths homework books.

VIDEO NOTES 10th July 2016

HegartyMaths - Perimeter (4)

Example 1

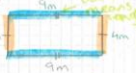


Perimeter = $7+7+7+7$
 $= 4 \times 7$
 $= 28mm$

Don't forget units!

Key words:
• Length
• Units
• Distance

Example 2



Perimeter = $4+9+4+9$
 $= 18+18$
 $= 36m$


Perimeter = $2 \times 9 + 2 \times 4$
 $= 18 + 8$
 $= 26m$

Perimeter = $2 \times (4+9)$
 $= 2 \times 13$
 $= 26m$

Double dash means same as single dash but not same as single dash.

Doesn't matter which method you use, they all work!

Example 3




Perimeter = 6×9
 $= 54m$

Regular means all sides are same length.

Example 4

Work out the perimeter of a square with side length 5cm.

Always draw a sketch from the information given.




Perimeter = 4×5
 $= 20cm$

Example 5

Work out the perimeter of an equilateral triangle with side length 4.1mm.

Same as regular.



Perimeter = 3×4.1
 $= 3 \times (4 + \frac{1}{10})$
USE distributive law of multiplication.
 $= 12 + \frac{3}{10}$
 $= 12.3mm$

Here is an example of a great homework!

Producing a set of well-written notes of all the modelled examples in the video encourages students to be an expert note-taker and to revise before they try the quiz.

HegartyMaths



Perimeter (4)

Example
Work out the **perimeter** of this shape.

$2 \times 12 = 24\text{m}$

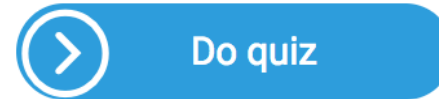
$8 + 5 + 5 + 8 = 26\text{m}$

551 - Perimeter (4)

Learn how to find the perimeter of a compound shape.

Video watched 0.00x

Your score **New lesson** HegartyMaths avg 60%



Step 1:

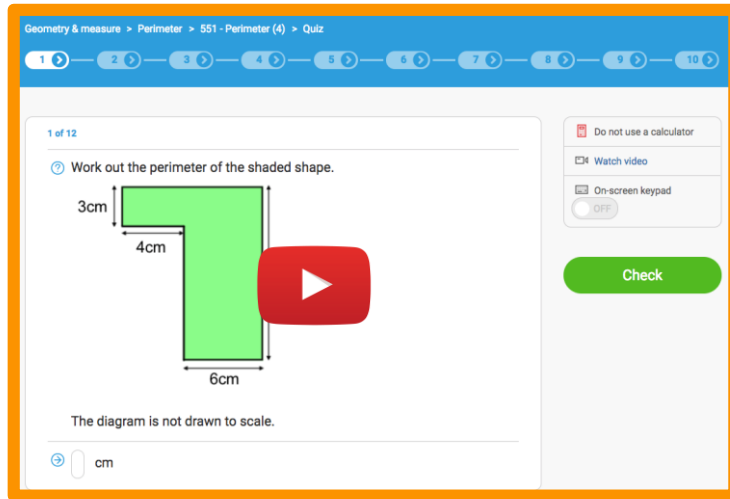
Video where Mr. Hegarty teaches you everything you need to know about that topic & goes through all the examples that will be in the quiz.

Step 2:

Quiz that will allow you to practise all the examples in the video for yourself and know whether you understood what was in the video.

Step 2:

Assess your learning from the video in a quiz.



Geometry & measure > Perimeter > 551 - Perimeter (4) > Quiz

1 of 12

Work out the perimeter of the shaded shape.

3cm
4cm
6cm

The diagram is not drawn to scale.

cm

Do not use a calculator

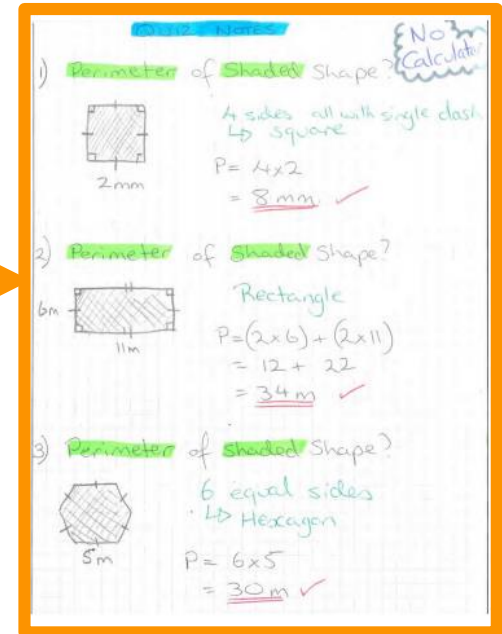
Watch video

On-screen keypad OFF

Check

You need to:

- 1) Write down all your workings
- 2) Always mark + self-correct your work



1) Perimeter of shaded shape? *(No calculator!)*

4 sides all with single dash
↳ square

$P = 4 \times 2$
 $= \underline{8 \text{ mm}}$ ✓

2) Perimeter of shaded shape?

Rectangle

$P = (2 \times 6) + (2 \times 11)$
 $= 12 + 22$
 $= \underline{34 \text{ m}}$ ✓

3) Perimeter of shaded shape?

6 equal sides
↳ Hexagon

$P = 6 \times 5$
 $= \underline{30 \text{ m}}$ ✓

Students should write their workings in their homework book and mark all questions as they go along.



Lesson Structure: Diagnosis, Therapy, Testing.

Diagnosis: Students are presented with three differentiated questions to attempt. The aim is to encourage students to give questions a go so they can assess their own prior knowledge and to build mathematical resilience and problem-solving skills. These questions are demonstrated by the teacher explaining in detail each step required to complete/solve each question.

Therapy: Students are given differentiated practice questions. Depending on their level of understanding and individual ability, the students themselves decide which questions of the Therapy section to complete. This part of the lesson is where students are expected to work independently, to master their skills and to embed their understanding. These questions are then explained and marked.

Testing: The Testing part consists of three differentiated questions. Students choose which question they want to complete to demonstrate their new skills and assess their progress from the beginning of the lesson.



Topics covered in Year 7 Maths

Schemes of Work
are available
on the VLE
(Virtual Learning
Environment)

<https://sites.google.com/a/mysackville.co.uk/sackville-school-vle/home>

Year 7 Scheme of Work	Hours Required
N1 - Addition and Subtraction	7
A1 - Sequences	5
Milestone Test 1	4
N2 - Multiplication and Division	7
A2 - Expressions	6
Milestone Test 2	4
N3 - Fractions, Decimals, percentages	6
A3 - Substitution	7
Milestone Test 3	4
N4 - Percentages, Ratio and Proportion	7
A4 - Equations	5
Milestone Test 4	4
N5 - Multiples, Factors and Primes	6
A5 - Inequalities	5
Milestone Test 5	4
Total	81

Year 7 Maths: Unit 1



Year 7 Scheme of Work	Hours Required
N1 - Addition and Subtraction	7
A1 - Sequences	5
Milestone Test 1	4

Solve these problems. Remember, its always a good idea to estimate your answer first.

$$136.04 + 102.27 \longrightarrow \begin{array}{r} 136.04 \\ +102.27 \\ \hline 238.31 \end{array}$$

Write in vertical column, aligning the decimal points.

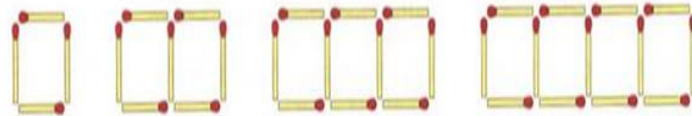
Add each column, starting on right. Carry digits when needed.

$$2.37 - 0.031 \longrightarrow \begin{array}{r} 2.370 \\ -0.031 \\ \hline 2.339 \end{array}$$

Write in vertical column, aligning the decimal points.

Subtract each column, starting on right and working left. Borrow as needed.

a Find the rule for this pattern:



b How many matchsticks will the next pattern have?

a Start with 4 and add 3 each time.

You can use a table to help spot the sequence:

b $13 + 3 = 16$

The next pattern will have 16 matchsticks.

Number of squares	1	2	3	4	5
Number of matchsticks	4	7	10	13	16

Year 7 Maths



Year 7 Scheme of Work	Hours Required
N1 - Addition and Subtraction	7
A1 - Sequences	5
Milestone Test 1	4

Year 7 Core Milestone test 1 PLC					
Topic	Red	Amber	Green	Hegarty	%
Use formal written methods for addition and subtraction of integers and decimals				18 - 20, 41, 47	
Solve problems involving calculations with decimals				47 - 50	
Add and subtract negative numbers				39 - 40	
Multiply and divide negative numbers				42 - 43	
Round decimals to a given number of decimal places				56	
Use approximation through rounding to estimate answers				130	
Calculate and solve problems involving perimeter				548 - 551	
Generate sequences using a simple term to term rule				197	
Generate sequences using nth term				198	
Find the nth term of a linear sequence				198	
Solve problems with sequences				196	
Plot graphs of simple linear functions				206	
Recognise straight-line graphs parallel to the x-axis or y-axis				205	

Year 7 Maths



Year 7 Scheme of Work	Hours Required
N2 - Multiplication and Division	7
A2 - Expressions	6
Milestone Test 2	4

factor factor product

$$3 \times 6 = 18$$

number of groups number in each group number in all

dividend divisor quotient

$$18 \div 3 = 6$$

number in all number of groups number in each group

coefficient variable constant

$$5x + 7 = \sqrt{2}$$

expression expression

equation

Terms: $5x, 7, \sqrt{2}$

Year 7 Maths



Year 7 Scheme of Work	Hours Required
N3 - Fractions, Decimals, percentages	6
A3 - Substitution	7
Milestone Test 3	4

Decimals, Percentages and Fractions

	Fraction	Percentage	Decimal
	1 whole	100%	1
	$\frac{1}{2}$	50%	0.5
	$\frac{1}{3}$	33.3%	0.33
	$\frac{1}{4}$	25%	0.25
	$\frac{1}{5}$	20%	0.2
	$\frac{1}{6}$	16.7%	0.167
	$\frac{1}{8}$	12.5%	0.125
	$\frac{1}{10}$	10%	0.1
	$\frac{1}{12}$	8.3%	0.083

www.jinks2learn.co.uk

Given $\begin{cases} y = 2x + 11 \\ x = 4 \end{cases}$

Substitute

$y = 2x + 11$

$y = 2(4) + 11$

Year 7 Maths



Year 7 Scheme of Work	Hours Required
N4 - Percentages, Ratio and Proportion	7
A4 - Equations	5
Milestone Test 4	4

Ratios

Notation

5:6 5 to 6

or

Part to Part



Ratio of red to blue $\frac{3}{4}$

Part to Whole



Ratio of red to all $\frac{3}{7}$

Equivalent Ratios

$$\frac{2}{3} = \frac{4}{6} = \frac{6}{9} = \frac{8}{12} = \frac{10}{15}$$

Proportions

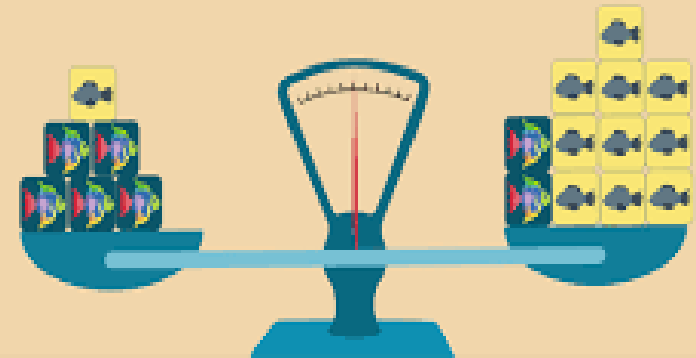
$$\frac{3}{5} = \frac{60}{x}$$

Solve for x. Cross Multiply!

$$\frac{3}{5} = \frac{60}{x}$$

$$\frac{3x}{3} = \frac{300}{3}$$

$$x = 100$$



$$5x + 1 = 2x + 10$$

Year 7 Maths



Year 7 Scheme of Work	Hours Required
N5 - Multiples, Factors and Primes	6
A5 - Inequalities	5
Milestone Test 5	4
Total	81

<p>Factors of 12 1, 2, 3, 4, 6, 12</p> <p>Multiples of 12 2, 24, 36, 48, 60, 72, 84, 96, 108, 120, 132, 144</p>		<p>Factors of 7 1, 7</p> <p>Multiples of 7 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84</p>
<p>Factors of 1 1</p> <p>Multiples of 1 1, 22, 33, 44, 55, 66, 77, 88, 99, 10, 11, 132</p>	<p>Factors of 10 1, 2, 5, 10</p> <p>Multiples of 10 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120</p>	<p>Factors of 8 1, 2, 4, 8</p> <p>Multiples of 8 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96</p>
		<p>Factors of 9 1, 3, 9</p> <p>Multiples of 9 9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99, 108</p>

Inequality Symbols
www.cazoommaths.com

$<$	\leq	$>$	\geq
Less than	Less than or equal to	Greater than	Greater than or equal to
$5 < 10$ 5 is less than 10	$x \leq 10$ x is less than 10 or equal to 10	$10 > 5$ 10 is greater than 5	$x \geq 15$ x is greater than 15 or equal to 15

Maths intervention



- Students' abilities assessed using Cognitive Ability Tests (CAT) and initial maths assessments
- Progress towards individual student MEG regular assessed
- Four additional qualified teachers run small group intervention sessions for identified students who are below target

How can you help your child succeed in maths?



- ▶ Fully equipped pencil case (calculator needed in year 8)
- ▶ Monitor Show My Homework
- ▶ Support with homework and deadlines
- ▶ Ask questions about topics
- ▶ Contact staff if there are any concerns. All staff emails are available on the website (all emails in the same format:
initialsurname@sackvilleschool.org.uk)

How can you help your child succeed in maths?



- ▶ Be positive about maths
- ▶ Involve them with maths in every day life
- ▶ Be positive about maths
- ▶ Do maths with them at home
- ▶ Be positive about maths
- ▶ Highlight when you are using maths
- ▶ Be positive about maths
- ▶ Play games with them
- ▶ **Be positive about maths!!**

Free Mathematics websites for parents and pupils



- www.hegartymaths.com

Access videos, quizzes and homework and get feedback and relevant maths practice

- www.timestables.co.uk

Learn your times tables 5 step plan with structured practice

- www.bbc.co.uk/bitesize/

Useful for maths instruction and practice

- <https://www.topmarks.co.uk/maths-games/hit-the-button>

Times table quick fire game

- www.mathszone.co.uk

Useful website with suggestions for interactive maths activities

- www.supermathsworld.com

Maths games

- www.coolmath.com

Maths games website

- www.crickweb.co.uk/ks2numeracy.html

Free online maths games resources

- www.educationquizzes.com/ks3

A maths games website



Any questions?