	MVC Mathematics Department	**This document outlines the main activities you will complete this year. Use this as a guide to prepare for lessons or check your understanding.**
		# C scheme

Name:	
Maths teacher(s):	

I will:
- work to the best of my ability, showing all my workings
- complete my homework to a good standard by the deadline set
- show tenacity when solving problems
- always have the correct equipment for all lessons

Signed:

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The MVC Mathematics Department will:
- help you develop fluency in mathematical concepts
- help you develop your mathematical communication and reasoning
- help you develop problem solving skills
- set appropriate homework
- regularly assess your progress
- give you regular feedback and let you know what else you need to do to maintain or increase your progress

Signed:

MVC Maths Department

hegartymaths

Online tasks are usually set on
www.hegartymaths.com

To access this site you need to enter your name, date of birth and then set your own password. If you have forgotten your password please contact your maths teacher via email.

Every lesson you will need to bring this equipment:
- exercise book
- learning log
- scientific calculator
- black pen × 2
- pencil × 2
- ruler
- eraser
- pencil sharpener
- highlighter
- glue stick

When advised, you will also need to bring:
- protractor
- pair of compasses
- colouring pencils

Optionally:
- colouring pencils

	HW		Objectives Autumn	Hegarty Tasks
CNum1	—		Use, convert and compare metric measures: length (mm, cm, m, km), mass/weight (mg, g, kg, tonne), capacity (ml, cl, l)	691
			Have an appreciation for the rough size of common metric units and make sensible estimates of a range of measures in everyday and real-life settings	
			Multiply and divide decimals by 10, 100, 1000, 0.1, 0.01, etc	15,16
			Add, subtract, multiply and divide negative numbers	39-43
			Use the symbols =, ≠, <, and >	
			BIDMAS to include decimals, negatives and extend to include squaring and cubing	120, 150
			Recognise prime numbers up to 100	28
			Be able to carry out prime factor decomposition, using factor trees	30
			metric, cm, m, mm, km, l, ml, cl, g, kg, mg, tonnes, estimate, measure, mass, length, capacity, time, conversion factor, BIDMAS, order of operations, operation, prime, factor, multiple, product of prime factors	
CAlg1	—		Understand the meaning of the words: equation, formula, identity, expression, unknown and variable.	
			Write an expression in algebra for perimeter or area	153
			Multiply a bracket by a number or a letter, eg $a(3a + 5)$, $b(2a - 3b)$, $2c(4c - 5)$, $-4(3x + 2)$	160
			Understand how to simplify algebraic expressions by collecting like terms where x^2 is involved, eg simplify $x^2 + 4x + 5x + 20$ to give $x^2 + 9x + 20$	157
			Use formulae to substitute positive and negative integer variables, eg given that $a = 4$, $b = -2$, $c = 1$, work out $m = 2(a + b) - c$	278
			equation, formula, identity, expression, variable, expand, term, simplify, like terms, formula, formulae, substitute, positive, negative	
CGeom1	—		Use the rules that, on parallel lines, alternate angles are equal and corresponding angles are equal as well	481-483
			show a proof for the sum of the angles of a triangle being 180°, and the sum of the angles in a quadrilateral being 360°	484
			Use the sum of the interior angles of a polygon to work out the size of each angle in a regular polygon, with particular emphasis on polygons with 5, 6, 8, 9, 10 & 12 sides	561, 562
			Work out if different polygons will tessellate	
			State the properties of common 2D shapes, with a focus on special quadrilaterals	825, 826
			Use, draw and find bearings	492-494
			parallel, perpendicular, alternate angles, corresponding angles, proof, prove, polygon, triangle, quadrilateral, pentagon, hexagon, heptagon, octagon, nonagon, decagon, exterior angle, interior angle, tessellate, quadrilateral, square, rectangle, rhombus, parallelogram, trapezium, kite, properties of a shape, definition of a shape, bearing, clockwise, compass, three-figure bearing, return bearing	
CData1	—		Recall the data handling cycle: understanding what is involved at each stage	392
			Understand the advantages and disadvantages of primary and secondary data	392
			By considering a specific research question or hypothesis, decide which type of graph would be most useful. Include: pictograms, tally charts, different types of bar charts and pie charts.	
			Construct a pie chart from a frequency table;	427
			Compare data represented in a pie chart and a bar chart	429
			specify the problem, collect data, process data, represent data, interpret, discuss, survey, experiment, data collection sheet, primary data, secondary data, sample, representative, pie chart, hypothesis, unitary method, frequency table, bar chart, dual bar chart	

Number	Algebra	Geometry	Data	Revision	Total	
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	HW		Objectives Spring	Hegarty Tasks
CNum2			Add, subtract, multiply and divide decimal and negative numbers	47, 48, 50 39-43
			Work with imperial units including miles, feet, pounds, pints, gallons	
			Convert roughly between metric and imperial measures	705, 706
			Use a calculator to evaluate algebraic expressions	780-786
			Use a calculator to do multi-stage problems, such as $\frac{7.32+\sqrt{9.45+3}}{12.822}$	129
			Read tables, bills and timetables to solve problems	
		metric, imperial, conversion, feet, gallons, pounds, pints, gallons, capacity, mass, algebraic expression, order of operations, decimal		
CAlg2	—		Solve equations with brackets such as $2(2x + 1) = 3(x + 7)$ and $2(3x − 4) = 5(8 − 2x)$	185
			Write and solve an equation from an *I think of a number* problem	151, 152
			Write and solve equations from practical situations and diagrams	153
			Change the subject of a formula eg: $a = 2b + c$, make c the subject	280, 281
		equation, unknown, balancing, bracket, fraction		
CGeom2	—		Work out the area of a trapezium	559
			Work out the area of a shape made from rectangles, parallelograms and triangles	555, 558
			Solve problems involving area and circumference of a circle	534, 535 539, 540
			Illustrate and name parts of a circle: centre, radius, chord, diameter, circumference, tangent, arc, sector and segment	592
			Be able to solve problems involving circles, area and circumference, including semi-circles and quarter-circles; and physical problems	536, 538 541, 543
		triangle, parallelogram, trapezium, compound shape, dimension, base, height, length, circle, radius, diameter, area, circumference, pi, centre, tangent, sector, segment, semi-circle, chord, arc		
CData2	—		Find the mean, median, mode and range from a bar chart or pie chart	415-417
			Decide which average is most suitable for a set of data	
			Compare data using averages, range and different kinds of graphs	
		frequency table, ungrouped data, bar chart, stem and leaf diagram, interpret, shape of the data, representative, unrepresentative, bias, extreme values, qualitative data, quantitative data, raw data, data values, normal shaped data, shape of data, hypothesis, conclusion		

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	HW		Objectives Summer	Hegarty Tasks
CNum3	—		Change between improper fractions and mixed numbers	63, 64
			Place (both improper and mixed) fractions greater than 1 on a number line	60
			Compare and order fractions greater than 1	60
			Work out a fraction of an amount (unitary method)	77
			Convert between percent and fractions	75, 76, 82
			improper fraction, mixed number	
CAlg3	—		Draw and interpret graphs of real life or physical situations	894, 895
			Understand the relationship between speed, distance and time	716, 717
			Use a graph to work out speed, given speed, finish an incomplete graph	880, 883
			Match up tables of values, equations, graphs and descriptions	
			Draw tables and graphs for equations of the form $y = mx + c$	205, 206
			Explain what a gradient and an intercept is and how they connect to $y = mx + c$	207
			Match straight line graphs with their equations	
			Draw graphs of the form $ax + by = c$	208, 209
			Rearrange an equation of the form $ax + by = c$ into $y = mx + c$	210
			distance, time, acceleration, speed, function, mapping, linear, input, output, variable, dependent, gradient, intercept	
CRatio3	—		Find one quantity as a percentage of another	62
			Find a percentage increase/decrease	90. 87
			Compare ratios (unitary method)	331
			Solve ratio problems (unitary method)	340
			Use graphs that represent situations that are directly proportional	341
			Create scale drawings	864
			Know how to use scale drawings to answer questions ranging from interpreting distances to showing the simple locus of a point drawn to scale	865, 866, 867, 868, 869
			direct, proportion, constant, scale, bearings, percentage Increase/decrease, reverse percentage, decimal multiplier, simple interest, compound interest	
CGeom3	—		understand the meaning of similarity	608
			know that shapes are congruent if they have a scale factor of 1	680
			solve problems involving congruent and similar shapes, finding missing angles and sides	609, 610, 681
			know what changes and what stays the same when objects are enlarged	642,643
			know the effects of rotating, reflecting, translating and enlarging shapes objects	637, 638, 639, 640, 641, 648, 649
			similar, similarity, congruency, congruent, multiplier, scale factor, length, angle, enlargement, translation, rotation, reflection, between ratio, unitary ratio, corresponding sides, corresponding angles	
CData3	—		List all the outcomes from two events systematically	358
			Show the outcomes from two combined events in a sample space diagram	358
			Calculate probabilities from sample space diagrams	359
			Explain the meaning of mutually exclusive	354
			Work out the probability of something not happening, if I know the probability of it happening	353
			outcome, event, probability, Carroll diagram, possibility tree, sample space diagram, two-way table, mutually exclusive, pie chart, bar chart, random, chance, theoretical probability, experimental probability, biased	

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