

Felpham Community College – Key Stage 3 Overview

Subject: Maths	Year: 9	Leader: M Ballantyne
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Autumn Term 1 Topic:	Activities	G&T extension topics
Angles in parallel lines & polygons	Explore & justify rules of angles in parallel lines & polygons, including multi-step problems. Explore Pythagoras theorem.	Pythagoras in 3D context.
Number sequences	Find and use position to term & term-to-term rules for linear and quadratic sequences. Explore rules and justify terms.	Complex fractional sequences.
Factors, multiples and indices.	Use factors, multiples & primes. Identify HCF & LCM by prime factor decomposition. Use indices and estimate roots.	Fractional and negative powers.
		Assessment Plans Topic assessment.
Literacy/Numeracy/ICT Solve multi-step word problems written in context.		

Autumn Term 2 Topic:	Activities	G&T extension topics
Algebraic notation & substitution	Use algebraic notation. Manipulate expressions, including expanding & factorising. Substitute to evaluate expressions. Index laws.	Manipulate quadratic expressions and algebraic fractions.
Mental & written calculations	Estimate & calculate mentally. Use efficient written methods of calculation. Round values to a given number of decimal places and significant figures. Introduce bounds.	Standard form.
Representing data	Mean, mode, median & range. Construct & interpret pie charts, bar charts, line graphs, scatter diagrams, stem & leaf diagrams and box plots. Compare 2 distributions.	Cumulative frequency graphs.
		Assessment Plans Topic assessment/class test
Literacy/Numeracy/ICT Interpret data in diagrammatic form, relating it back to the context.		

Spring Term 1 Topic:	Activities	G&T extension topics
Area and volume	Area & perimeter of rectilinear shapes. Calculate area of triangles, parallelograms, trapezia, volume & surface area of prisms. Area and circumference of circles.	Explore pyramids, arcs & sectors. Dimension theory.
Fractions, decimals and %	Four operations on fractions. Understand the relationship between fractions, decimals & %. Use percentages, including percentage changes.	Determined which fractions will terminate. Algebraic fractions.
		Assessment Plans Topic assessment
Literacy/Numeracy/ICT Solve multi-step word problems written in context.		

Spring Term 2 Topic:	Activities	G&T extension topics
Equations	Distinguish between formulae, expressions, equations & identities. Solve equations using algebraic and numerical methods. Construct equations from diagrams and words and solve them. Simultaneous equations.	Rearranging formulas. Solve quadratic eqns.
Transformations	Identifying and completing rotations, reflections, translations and enlargements from a centre, on co-ordinate grids.	Area factor & volume factor. Similar triangles.
		Assessment Plans Topic assessment/class test
Literacy/Numeracy/ICT Use correct mathematical language consistently when describing transformations.		

Summer Term 1 Topic:	Activities	G&T extension topics
Ratio & proportion	Understand & use ratio and the unitary method. Relationship between ratios and fractions. Explore proportionality.	Direct and inverse proportionality. Repeated proportional change.
Equations & graphs	Generate co-ordinates from linear rules. Solve problems using $y=mx+c$. Find and use gradients	Parallel & perpendicular lines. Quadratic & other functions.
Probability	Explore theoretic probability & relative frequency and use this to predict. Use sample space, venn diagrams & simple tree diagrams to find probabilities.	Explore and/or rules. Tree diagrams without replacement.
		Assessment Plans Topic assessment
Literacy/Numeracy/ICT Use of graphic calculators to explore $y=mx+c$		

Summer Term 2 Topic:	Activities	G&T extension topics
Real life graphs and measures	Metric units and bearings. Real life graphs. Calculate and represent rates of change – speed, etc. Compound measures.	Bounds and error intervals Extend volume to cones & cylinders.
Construction & loci	Construct SAS,ASA & SSS triangles. Perform standard constructions with a straight edge & compasses. Explore loci.	More complex loci. Prove the congruence of triangles.
Plans, elevations & nets	Relate 2d representations to 3d drawings. Draw nets.	Assessment Plans Topic assessment/end of year exam
Literacy/Numeracy/ICT Describe rates of change in detail.		

Website / Resources <http://vle.mathswatch.com> www.kangaroomaths.com (Kenny's pouch)
<http://www.bbc.co.uk/schools/ks3bitesize>