Construction & loci: Construct triangles and polygons

Problems with loci

Angle/perpendicular bisectors

Angles, bearing & Trig:

Angles in parallel lines

Bearings Bearings with pythag & trig

Sine & cosine (H)

- SDT
- Dist-time graphs

Rates:

Equations & formulae:

Form & solve eqns

Simultaneous eqns

Quadratic eqns (H)

Ratios & Scales:

Inequalities

Iteration (H)

- Density/pressure

Functions & graphs:

Function machines

Trigonometric (H)

Quad/cubic/reciprocal

Composite/inverse (H)

Graph transformations (H)

- Transformations: Transformations
- Describing
 - Invariant points Vectors (H):

Non-calculator methods:

+/-/x/÷ integer/decimals

Place value/ordering

Directed numbers

Work with fractions:

+/-/x/÷ fractions

Quadratic expressions &

Expand & factorise double

Completing the square (H)

YEAR

 $ax^2 + bx + c = 0$

Forming & solving equations:

inequalities, brackets recap

Factorise quadratics incl. solving

One-step, two-step and

Rearranging formulae

Straight line graphs:

points/from a graph

equations:

DOTS

Quadratic

formulae (H)

Fraction of amount

Algebraic fractions (H)

Order of operations

Ratios

Set notation & Venn:

Conditional prob (H)

Venn diagrams

Set notation

Integrate Knowledge

Into Larger Concepts

Collinear . Proof

Recurring decimals to fractions (H) Conditional probability (H)

Straight line graphs:

y = mx + c

Plot straight line graphs

Midpoint of line segments

Equations of straight lines

-1 0 1 2 3 4 5 6

Interpret quadratic,

Represent inequalities

Probability:

Event probability recap

Relative frequency

Expected outcomes

Independent events

Testing conjectures:

True/false?

Show that

Factors, multiples, primes .

Always, sometimes, never

Tree diagrams

Vertical/Horizontal graphs and using a table of values (recap)

Equation linear graphs given one point and gradient/given two

reciprocal graphs

Represent multiple inequalities (H) •

Sectors and arcs Compound shapes

Circle theorems (H)

Probability:

Working with circles: Sequences & proof:

Arithmetic/geometric Area & circumference

AQA 8300

(All 1 hr 30mins)

PAPER 1 (33.3%): Non-Calc

PAPER 2 (33.3%): Calculator

PAPER 3 (33.3%): Calculator

SF Conversion

Sum to 1/Listing outcomes

Relative frequency

Tree diagrams

NA TRAINS

X & ÷ with SF

- Generate sequences
- nth term
- Quadratic nth term (H)

Standard form: Similarity & congruence: Pythag' & Trig

Congruent triangles

Proving congruence

Volume:

Rounding

Estimations

truncation)

graphs recap

Rates:

Error intervals (incl.

Upper/lower bounds (H)

 $4.25 \le n < 4.35$

Algebraic representation: Solving ratio & proportion problems: Enlargement & Similarity:

Direct proportion, ratio & conversion

Inverse problems, graphs & best buy

Solve SDT and DMV problems

Construction &

Draw and measure

3-D shapes:

shapes

angles Scale drawings

Loci & constructions

Name 2-D and 3-D

Nets of 3-D shapes

Plans & elevations

of 3-D shapes

Add & subtract indices. Brackets, equations & inequalities:

Surface area & volume

Algebraic expressions,

Solving equations & inequalities

Expanding brackets

congruency:

(recap)

Use distance-time graphs

Rates of change and units

Convert compound units

Areas of

Perimeter/Area/

shapes/compound

Rounding & estimating: Interpret &

Similar shapes

Area/vol

Ratio & proportion: Area & volume:

Direct/ inverse

TUXFORD ACADEMY

KS3 & KS4 MATHS

LEARNING JOURNEY

- Best buy
- Plans & elevations Vol/SA of cylinder/ sphere/pyramids
 - Exchange rate Equations

Simultaneous equations:

- Solve two linear using
- Solve including a

quadratic equation (H) Solve using graphs

- Factors/multi
- ples/primes
- Prime factorisation
- HCF & LCM
- Surds
- Apply surds
- Rationalise

(H)

the

Non-linear graphs:

Unit conversions

Quadratic Intercept & roots .

Pythagoras'

Trigonometry

Exact trig values

3-D trig/Sine/Cosine (H)

- Cubic
- Approximations Area/circumference .

Volume/SA prisms . Equation tangents

Area under curve (H)

represent data:

Averages

Sampling

Scatter graphs

Maths & Money:

Bills & bank statements

VAT, wages & tax

Unit price problems

Exchange rates

Numbers:

Surds

HCF & LCM

Negative

numbers

x, ÷, +, - fractions •

Simple/ compound interest

Using Percentages:

FDP, % inc/dec,

Reverse %

change as a % recap

Solve % problems

Repeated % change

Rational numbers **Deduction**:

Angle rules

- reasoning

Conjectures

Chains of

reasoning

Sequences:

Generate

seauences.

Finding the

nth term

Range

vectors

Multiplied by

Add & Subtract

scalars

Angles:

lines

Enlarge by SF & from a point

Use fractional and negative SF

(£

Angle rules

Interior/exterior

Angle in parallel

Combine ratios

Equivalent ratios

Share ratio (whole/part)

Link Ratio & fractions

- Percentage: % amount
- % increase Decrease
- % change
- Find original Simple
- interest Compound
- interest

Equation, inequalities & formulae:

- Solve equations
- & inequalities Changing the
- subject of



Algebraic manipulation: Substitution



Collecting terms

- Simplify expressions Index laws
- Expand & factorise single

YEAR

Measures of

& mode

Find mean

from tables

Compare

Mean, median

location:



The Data **Handling Cycle:** Set up

- enquires, questionnaires Pictograms, bar charts and
- line graphs Multiple bar charts and pie
- charts
- **Averages** Range
- Comparing distributions
- Misleading graphs

Line symmetry & reflection: Reflecting

horizontal and vertical lines Reflect shapes in

Constructing & measuring:

Use geometric notation Draw & measure angles

Triangles & quadrilaterals

SSS, ASA, SAS

Simplify fraction

Equivalent fractions

Mixed numbers & improper

Add & subtract fractions

Fraction & % of an amount

Use a fraction to find the whole

Directed Number: +, -, x, ÷

> Order & compare Order of Operations

Rounding to 1 sig. fig.

Fraction & % of amounts:

and/or other fractions

Angle rules

fractions

VRMv3: 2025/26

Fractions:

diagonal lines



Area of Trapezia & circles:

- Area of parts of circles

shapes

Solving angle problems

Incl. perimeter

Area & perimeter of compound •

Area Trapezium = $\frac{1}{2}$ x (a + b) x h

- Developing geometric reasoning: **Sets and Probability:** Angles around a point Venn diagrams & set Angles in triangles/quadrilaterals notation

 - Sample spaces
 - Probability scale

Calculate probability

Primes and proof:

- Multiples incl. LCM Factors incl. HCF
- Product of primes Square and triangular numbers
- **Multiplication & Division:** Incl. powers of ten & decimals Mental & written methods
- Order of Operations Converting units

Area

diagrams

percentage

- Integers and decimals
- Use concrete, pictorial & written methods. Perimeter
- Time tables Frequency trees

Addition and

Subtraction:

Angles in parallel lines & polygons: Indices:

Compare gradients and intercepts, y = mx + c

Interpret gradients and intercepts of real life graphs

- Angles in parallel lines distributions • Triangles & quadrilaterals
 - Interior & exterior angles in polygons

Angle rules and notation

Number sense:

- Rounding & estimating
- Converting lengths, area & volume

Time & money problems Number sense:

Use mental strategies +, -, x, ÷ Incl. fractions and decimals

Simplify indices

Use addition &

subtraction laws

Fractions, decimals & % equivalence:

Understand fractions including using

Convert from fraction, decimal and

Understand fractions as division

Identify & use simple equivalent fractions

Use & interpret pie charts

Estimation Number facts

YEAR

Red: Yellow

Place Value:

& decimals

Rounding

Integers & decimals

Range & median

Fractions & percentages:

Convert between FDP

Calculate amounts by FDP

- Sample space, two-way table & Venn Find a % change and reverse %

 - fraction

Multiplicative change:

Direct proportion

Conversion graphs

Converting currencies

Find probabilities from: Calc % inc/dec using multipliers

Use product rule for counting Ratio & scale:

Probability:

Representing data: Compare as a

Simplify ratio

- Combine
- Divide into a ratio

Solve ratio problems Two-way tables

lines of best fit Ungrouped & grouped

Construct sample spaces

(discrete/cont.) frequency tables.

Scatter graphs and

Multiply & dividing fractions:

• x, ÷ fractions incl. integers

• Incl. improper & mixed numbers • Incl. algebraic fractions Scale factors & diagrams • Reciprocals

Notation Substitution Ordering incl. negatives

Incl. decimals, fractions &

negatives

Algebraic notation:

Use inverse

Substitution

Function machines

Generate sequences

Represent functions graphically

Equality & Equivalence: Like and unlike terms Solve linear equations

- **Graphs & diagrams:**
 - Line & bar charts Pie charts Time-series
- Cumulative frequency Box-plots Prove geometric .

Work out missing sides and angles

Know hypotenuse

Pythagoras:

Calculate missing sides of a rightangled triangle Use **Pythagoras** on Cartesian plane

Rotations &

Explore

- Rotational
- Rotation Translating
- shapes, incl.

29

- Convert into
- Calculations with SF



In all four

quadrants graphs

YEAR

- Sequences in a table &
- Find missing terms

proofs of Pythagoras Translations:

symmetry

- - vectors

Standard Form:

standard form



Cartesian plane:







Sequences: Describe & continue sequences Predict next term(s)

- graphically
- Term-to-term rule

- elimination method
 - - Factors &

powers:

- Index rules
- denominator









Frequency polygons Histograms