UNIT 1 - CORE REVISION 1

MATHEMATICS 2.1

Content

- Basic Number
- Basic Algebra
- Mensuration – Perimeter and Area
- Mensuration – Volume and Surface Area
- Number and Sequences
- Directed Numbers
- Time and Money
- Decimals, Fractions and Percentages

Resources & ICT

- Textbook
- Worksheets
- Calculators
- Autograph
- Active Maths activities
- Online resources from the BM website
- www.myimaths.com
- www.wolframalpha.com

Types of assessment

- Exercises from textbooks and worksheets
- Relevant questions from past papers
- Formative assessment of homework and test results
- Structured questioning during lessons
- Judgments based on class participation and effort

Students to Know

- Basic algebraic rules
- Rules of arithmetic
- Practical applications of basic techniques
- Simple conversion techniques
- Which formulae are given in the exams

Students to Understand

- When to apply area and volume formulae
- How to approach problems using a variety of techniques
- The necessary standard to attain marks in an IGCSE standard exam question

Students to be able to Do

- Use their calculators effectively
- Solve algebraic problems
- Understand mathematical vocabulary
- Answer exam standard questions

Cross curricular links

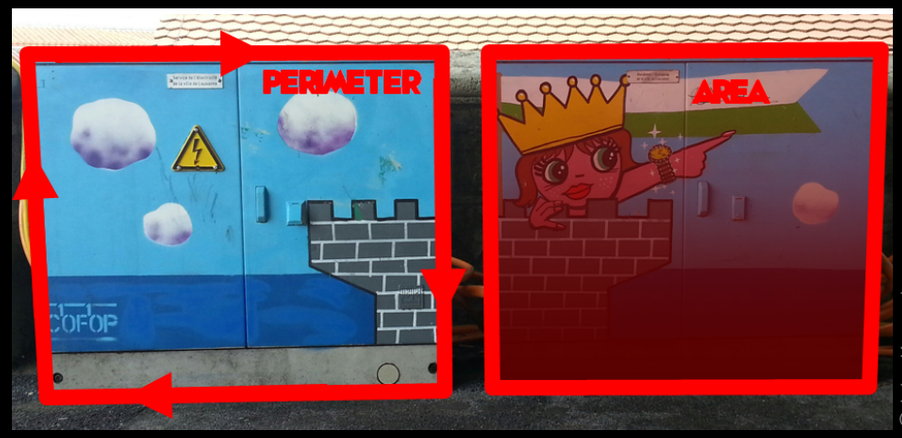
- Physics; using formula and algebraic manipulation
- Chemistry; solving equations and manipulating expressions
- Economics; problem solving skills using a logical approach
- History; the development of mathematics and key figures in history

Differentiation incl. EAL

- Extension tasks for gifted students
- Emphasis on vocabulary (especially for non native speakers of English)
- Group work and Academic Champions to encourage peer learning

Learning styles activities

- Students encouraged to approach tasks using different methods
- Individual guidance to improve understanding
- Lessons taught using a range of techniques



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Global citizenship, internationalism, local environment

- Links to countries where the mathematics at hand was first developed
- Sharing of ideas from students with different mathematical backgrounds

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September-October - 6 weeks

UNIT 2 - CORE REVISION 2

MATHEMATICS 2.1

Content

- Set Notation
- Algebra
- Transformations 1
- Indices and Standard Form
- Statistics 1
- Symmetry
- Geometry
- Percentages

Resources & ICT

- Textbook
- Worksheets
- Calculators
- Autograph
- Active Maths activities
- Online resources from the BM website
- www.myimaths.com
- www.wolframalpha.com

Types of assessment

- Exercises from textbooks and worksheets
- Relevant questions from past papers
- Formative assessment of homework and test results
- Structured questioning during lessons
- Judgments based on class participation and effort

Students to Know

- How to solve all IGCSE standard linear equations
- Details of reflections, rotations and translations
- Practical applications of basic techniques
- Line and rotational symmetry
- Methods of solving angle problems

Students to Understand

- Practical percentage techniques
- Statistical vocabulary
- How to approach problems using a variety of techniques
- The necessary standard to attain marks in an IGCSE standard exam question

Students to be able to Do

- Use their calculators effectively
- Solve all possible linear equations
- Understand mathematical vocabulary
- Answer exam standard questions

Cross curricular links

- Physics; using formula and algebraic manipulation
- Chemistry; solving equations and manipulating expressions; symmetry in crystal structures
- Architecture; symmetry in buildings
- History; the development of mathematics and key figures in history

Differentiation incl. EAL

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- Group work and Academic Champions to encourage peer learning

Learning styles activities

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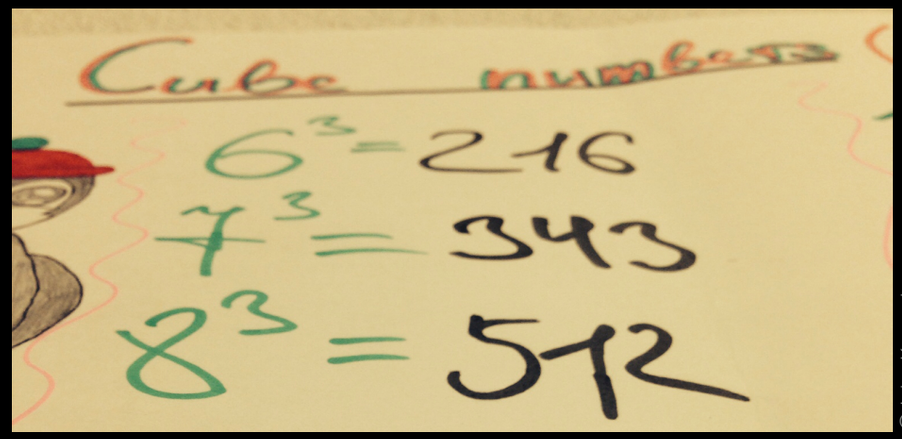

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November-December - 6 weeks

UNIT 3 - EXTENDED I

MATHEMATICS 2.I

Content

- Transformations 2
- Probability
- Measures
- Ratio and Proportion
- Real Life Graphs
- Personal Finance
- Estimation and Accuracy
- Functions

Resources & ICT

- Textbook
- Worksheets
- Calculators
- Autograph
- Active Maths activities
- Online resources from the BM website
- www.myimaths.com
- www.wolframalpha.com

Types of assessment

- Exercises from textbooks and worksheets
- Relevant questions from past papers
- Formative assessment of homework and test results
- Structured questioning during lessons
- Judgments based on class participation and effort

Students to Know

- Details of Enlargements, Stretches and Shears
- Practical applications of basic techniques
- The difference between theoretical and experimental Probability
- How to handle proportion questions

Students to Understand

- Converting a proportion statement into an equation
- How to describe combinations of transformations
- Metric units and conversion techniques (including volume and area units)
- The difference between Speed-Time and Distance-Time graphs
- How to approach problems using a variety of techniques
- The necessary standard to attain marks in an IGCSE standard exam question

Students to be able to Do

- Use their calculators effectively
- Use basic algebra techniques to solve ratio, proportion and speed/distance/time problems
- Understand mathematical vocabulary
- Answer exam standard questions

Cross curricular links

- Physics; Speed-Time and Distance Time Graphs
- Art & Photography; Enlargements and scale factors
- IT; Computer graphics and the application of transformations
- History; The development of mathematics and key figures in history

Differentiation incl. EAL

- Extension tasks for gifted students
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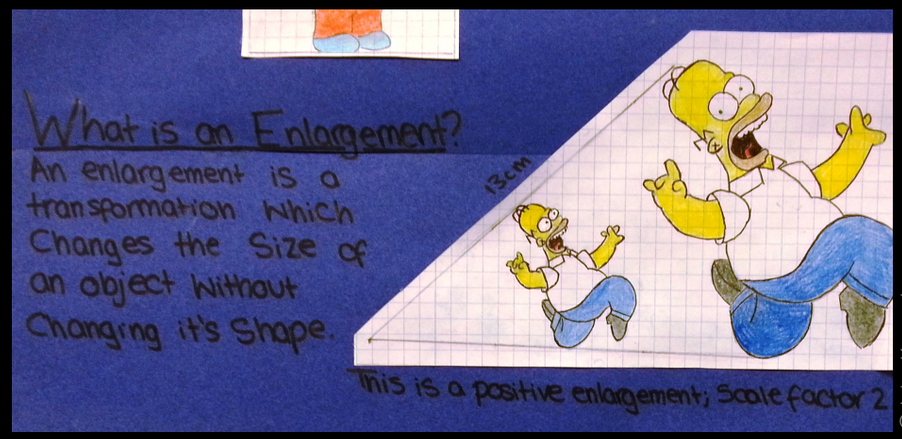
- Group work and Academic Champions to encourage peer learning

Learning styles activities

- Students encouraged to approach tasks using different methods
- Individual guidance to improve understanding
- Lessons taught using a range of techniques



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January-February - 6 weeks

UNIT 4 - EXTENDED 2

MATHEMATICS 2.1

Content

- Constructions
- Loci
- Statistics 2
- Straight Line Graphs
- Angle Properties
- Formulae, Inequalities and Simultaneous Equations
- Graphs of Functions
- Circle Properties

Resources & ICT

- Textbook
- Worksheets
- Calculators
- Autograph
- Active Maths activities
- Online resources from the BM website
- www.myimaths.com
- www.wolframalpha.com

Types of assessment

- Exercises from textbooks and worksheets
- Relevant questions from past papers
- Formative assessment of homework and test results
- Structured questioning during lessons
- Judgments based on class participation and effort

Students to Know

- How to use a compass to solve loci problems
- How to interpret scale drawings
- Y=MX+C
- Practical applications of basic techniques
- Elimination and Substitution techniques for solving simultaneous equations
- Circle theorems

Students to Understand

- Data represented in Histograms and Cumulative Frequency Diagrams
- How to find equation of a line
- How the equation of a line relates to the graph
- Angle properties of polygons and circles
- How to draw a function from its equation
- How to approach problems using a variety of techniques
- The necessary standard to attain marks in an IGCSE standard exam question

Students to be able to Do

- Use their calculators effectively (especially table mode)
- Recall Circle Theorems
- Understand more advanced statistical vocabulary
- Answer exam standard questions

Cross curricular links

- Physics; Straight Line Equations
- Physics and Chemistry; Experimental data modeled with straight line equations
- Geography; Real life continuous data displayed in and Cumulative Frequency Diagrams
- History; The development of mathematics and key figures in history

Differentiation incl. EAL

- Extension tasks for gifted students
- Emphasis on vocabulary (especially for non native speakers of English)
- Group work and Academic Champions to encourage peer learning

Learning styles activities

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- Lessons taught using a range of techniques

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January-February - 6 weeks

UNIT 5 - EXTENDED 3

MATHEMATICS 2.1

Content

- Linear Programming
- Further Algebra
- Arcs and Sectors
- Trigonometry 1
- Vectors
- Matrices
- Trigonometry 2

Resources & ICT

- Textbook
- Worksheets
- Calculators
- Autograph
- Active Maths activities
- Online resources from the BM website
- www.myimaths.com
- www.wolframalpha.com

Types of assessment

- Exercises from textbooks and worksheets
- Relevant questions from past papers
- Formative assessment of homework and test results
- Structured questioning during lessons
- Judgments based on class participation and effort

Students to Know

- How to draw straight line inequalities
- How to interpret simple linear programming scenarios
- Quadratic equation techniques
- Problems involving algebraic fractions
- What vectors represent and how to use them
- Matrix addition, multiplication and inverses
- Techniques for solving problems in non-right angle triangles

Students to Understand

- Connection between matrices and transformations
- How solving quadratics relate to graphical representations
- Geometry relating to fractions of circles.
- How to approach problems using a variety of techniques
- The necessary standard to attain marks in an IGCSE standard exam question

Students to be able to Do

-
- Use their calculators effectively (especially table mode)
- Use Sine and Cosine Rules
- Solve vector problems
- Approach larger algebraic problems with a variety of techniques.
- Understand more advanced statistical vocabulary
- Answer exam standard questions

Cross curricular links

- Economics: Linear Programming
- IT; Matrices, transformations, trigonometry and computer graphics
- History; The development of mathematics and key figures in history

Differentiation incl. EAL

- Extension tasks for gifted students
- Emphasis on vocabulary (especially for non native speakers of English)
- Group work and Academic Champions to encourage peer learning

Learning styles activities

- Students encouraged to approach tasks using different methods
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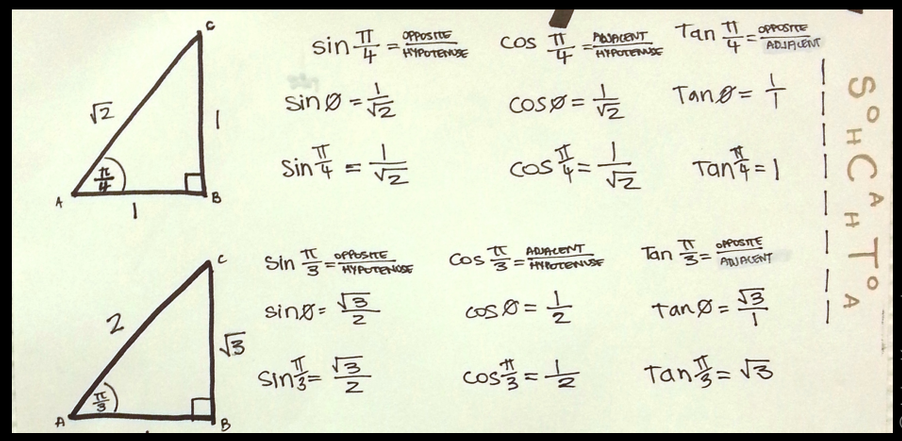

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January-February - 6 weeks