

Learning Outcomes**RANGE AND TYPE OF NUMBERS**

Work with

-decimals to a required number of places

ADD AND SUBTRACT

Add and subtract

-mentally for 2 digit numbers

-without a calculator for 4 digit numbers including decimals

-with a calculator for whole numbers, decimals and integers with any number of digits

In applications in number, money and measurement

MULTIPLY AND DIVIDE

-mentally for decimals by a single digit(easy examples only)

-without a calculator for more complex examples

-know that multiplication by a number less than one has a decreasing effect whereas division by a number less than one has an increasing effect

In applications in number, money and measurement

ROUND NUMBERS

Round any number

-to a required number of decimal places, eg. Solutions to calculations involving money rounded to 2 decimal places

ALGEBRA

-evaluate using the conventions for order of operations in calculations

Suggested Learning Intentions**Suggested Success Criteria****Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos, Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level E/F

Topic: Angles

Periods: 6

Learning Outcomes

ANGLE

- use "reflex" to describe angles
- use the fact that vertically opposite angles are equal
- use the properties of angles formed by a line crossing parallel lines
- know the sum of the angles of a triangle is two right angles.
- use combinations of angle properties
- calculate interior/exterior angles of regular polygons with four or more sides

Suggested Learning Intentions

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook
CAME materials and Kalidos
Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level E/F

Topic: Negative Numbers and Coordinates

Periods: 6

Learning Outcomes

RANGE AND TYPE OF NUMBERS

Work with

-negative numbers (eg temperature)

POSITION AND MOVEMENT

Discuss position and movement

-use co-ordinates in all four quadrants to plot position

RANGE AND TYPE OF NUMBERS

Work with

-integers

ADD AND SUBTRACT

Add and subtract

-mentally for 2 digit numbers including integers

-without a calculator for 4 digit numbers including decimals and integers

-with a calculator for whole numbers, decimals and integers with any number of digits

In applications in number, money and measurement

Suggested Learning Intentions

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Level E/F

Topic: Symmetry

Periods: 6

Learning Outcomes

SYMMETRY

Work with symmetry

-determine whether or not shapes have rotational symmetry

-move a tile of a shape on a squared grid in order to translate, reflect or rotate shape

Suggested Learning Intentions	Suggested Success Criteria
1	

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

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Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Learning Outcomes**COLLECT**

By selecting sources of information for tasks, including

- practical experiments:-recognise discrete(countable)and continuous(measurable)data
- surveys using structured questionnaires which allow several responses to each question
- sampling using a strategy which avoids bias

ORGANISE

By grouping and ordering discrete/continuous data using equal class intervals (approximately six classes) and constructing grouped frequency tables

DISPLAY

-By constructing pie charts of raw data

INTERPRET

- By retrieving information from a more extended range of displays and databases
- By calculating mean and range of data sets using non grouped data

Suggested Learning Intentions

1

Suggested Success Criteria**Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty Internatials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level E/F

Topic: Fractions

Periods: 8

Learning Outcomes

RANGE AND TYPE OF NUMBERS

Work with

- all widely used fractions and equivalence among these

FRACTIONS PERCENTAGES AND RATIOS

Work with fractions

-mentally find widely-used fractions of whole number quantities.

-with a calculator find a fraction of a quantity

-without a calculator as previously defined

-understand and use equivalences of fractions

-use mental, written or calculator methods, as appropriate, to add, subtract, multiply and divide fractions(including mixed numbers)in everyday contexts

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level E/F

Topic: Algebra

Periods: 4

Learning Outcomes

ALGEBRA

Work with expressions

-understand equivalence of expressions and use standard algebraic conventions to rearrange them.

-evaluate expressions using the conventions for order of operations in calculations

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Learning Outcomes**FRACTIONS PERCENTAGES AND RATIOS**

Work with fractions and percentages

-mentally find widely-used fractions and percentages of whole number quantities.

-with a calculator find a fraction or percentage of a quantity

-without a calculator as previously defined

Work with fractions and percentages

-understand and use equivalences of fractions and ratios, and relate these to decimals and percentages

-apply percentage increase/decrease in context

Suggested Learning Intentions

1

Suggested Success Criteria**Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Level E/F

Topic: Time

Periods: 8

Learning Outcomes

TIME

Time activities with a digital stopwatch in seconds, tenths, hundredths.

Know and use relationships between distance, speed and time

$D=ST$ $S=D/T$ $T=D/S$

-in calculations : calculate one given the other two (using appropriate units)

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Learning Outcomes**MEASURE AND ESTIMATE**

Measure and draw using standard units

-accuracy and device as appropriate to the application

Estimate measurements

-small lengths in millimetres

-larger lengths in metres

Work with square kilometre, hectare, tonne when appropriate

Read scales on measuring devices including estimating between graduations.

Realise that volume can be conserved when shape changes.

Suggested Learning Intentions

1

Suggested Success Criteria**Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Learning Outcomes**RANGE OF SHAPES**

Use properties of 2D shapes—discuss the side, angle, diagonal properties of quadrilaterals: square, rectangle, rhombus, parallelogram, kite, trapezium

-define and classify quadrilaterals

Draw triangles

-given 3 sides, 2 sides and included angle, 2 angles and one side

PERIMETER, FORMULAE, SCALES

Calculate using rules:

-area of non-right –angled triangles(given the base and height), kite, rhombus, parallelogram and composite shapes

RANGES OF SHAPES

Draw polygons(four or more sides):

-given appropriate information:

eg. Draw a rectangular pentagon with sides 6cm. Draw a rhombus with diagonals 8cm and 6cm in length.

Suggested Learning Intentions

1

Suggested Success Criteria**Department Resources:**

Scottish Secondary Mathematics Textbook, Polydron equipment

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level E/F

Topic: Equations and Inequations

Periods: 8

Learning Outcomes

ALGEBRA

Work with expressions

-solve further equations and inequations

Suggested Learning Intentions	Suggested Success Criteria
1	

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Level E/F

Topic: Ratio

Periods: 4

Learning Outcomes

FRACTIONS PERCENTAGES AND RATIOS

Find ratios between quantities

Use simple unitary ratio

-understand and use equivalences of fractions and ratios, and relate these to decimals and percentages

Split a quantity in a given ratio

Use direct and inverse proportion in context

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level E/F

Topic: 3D Shape

Periods: 8

Learning Outcomes

RANGE OF SHAPES

Use properties of 3D shapes

-make 3 D models, solid, solid or skeletal, including using nets: triangular prism, pyramid, tetrahedron

PERIMETER, FORMULAE, SCALES

Calculate using rules:

-volumes of cuboids and cubes

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Learning Outcomes

PERIMETER, FORMULAE, SCALES

Use scales such as 1cm to 1, 2,5 or 10m or represented by a ratio such as 1:100 to interpret or draw maps, plans, diagrams; or to make models.

RANGE OF SHAPES

Draw triangles

-given 3 sides, 2 sides and included angle, 2 angles and one side

-to scale in applications involving heights and distances

POSITION AND MOVEMENT

Discuss position and movement

-use bearings and distances to produce accurate scale drawings of routes

Use scales

-extend to scales represented by ratios such as 1:50 000 widely used in maps

Suggested Learning Intentions

1

Suggested Success Criteria**Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Level E/F

Topic: Formulae

Periods: 10

Learning Outcomes

FUNCTIONS AND EQUATIONS

Use a “function machine” in reverse for inverse operations.

Solve simple equations and inequations

Use notation to describe general relationships between 2 sets of numbers.

Use and devise simple rules.

Recognise simple relationships and construct/use simple formulae, equations and graphs(linear) to solve problems

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Learning Outcomes**RANGE AND TYPE OF NUMBERS**

Work with

- decimals to 3 places (practical applications in measurement)

ADD AND SUBTRACT

Mentally for 2 digit numbers including decimals

- without a calculator for 4 digits with at most 2 decimal places
- with a calculator for any number of digits with at most 3 decimal places

In applications in number, money and measurement.

MULTIPLY AND DIVIDE

-Mentally for any whole number by a multiple of 10 or 11

-mentally for any numbers including decimals by 10, 100, 1000

- without a calculator for 4 digits with at most at most 2 decimal places by a single digit
- with a calculator for any pair of numbers but at most 3 decimal places in the answer

In applications in number, measurement and money

ROUND NUMBERS

Round any number to one decimal place

Suggested Learning Intentions**Suggested Success Criteria****Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

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					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level D/E

Topic: Angles

Periods: 8

Learning Outcomes

ANGLE

Draw, copy and measure angles accurately within 5 degrees;

Use standard notation, 060° , 150° , 300° , to express bearings

-use "reflex" to describe angles

-use the fact that vertically opposite angles are equal

-use the properties of angles formed by a line crossing parallel lines

-know the sum of the angles of a triangle is two right angles.

Use an 8 point compass rose;

Suggested Learning Intentions

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Level D/E

Topic: Coordinates

Periods: 6

Learning Outcomes

POSITION AND MOVEMENT

Discuss position and movement

Use a co-ordinate system to locate a point on a grid

RANGE AND TYPE OF NUMBERS

Work with

-integers

ADD AND SUBTRACT

Add and subtract

-mentally for 2 digit numbers including integers

-without a calculator for 4 digit numbers including decimals and integers

-with a calculator for whole numbers, decimals and integers with any number of digits

In applications in number, money and measurement

Suggested Learning Intentions

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level D/E

Topic: Symmetry & Tessellation

Periods: 6

Learning Outcomes

SYMMETRY

Work with symmetry:

Identify and draw lines of symmetry, generally up to 4;

Create symmetrical shapes

Create or copy a tiling using a shape template;

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Learning Outcomes**COLLECT**

Selecting sources of information for tasks, including questionnaires which allows several responses to each question

ORGANISE

Using diagrams or tables.

Using databases or spread sheet table with up to three fields defined by pupils With the aid, where appropriate, of a computer package

DISPLAY

Constructing graphs (bar, line, frequency polygon) and pie charts: involving simple fractions or decimals

Involving continuous data which has been grouped

With the aid, where appropriate of a computer package

INTERPRET

From a range of displays and databases by retrieving information subject to one condition

Suggested Learning Intentions

1

Suggested Success Criteria**Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level D/E

Topic: Fractions

Periods: 8

Learning Outcomes

RANGE AND TYPE OF NUMBERS

Work with

- all widely used fractions and equivalence among these

FRACTIONS PERCENTAGES AND RATIOS

Work with fractions

-mentally find widely-used fractions of whole number quantities.

-with a calculator find a fraction of a quantity

-without a calculator as previously defined

-understand and use equivalences of fractions

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Level D/E

Topic: Algebra

Periods: 6

Learning Outcomes

ALGEBRA

Work with expressions

-understand equivalence of expressions and use standard algebraic conventions to rearrange them.

Solve simple equations

Suggested Learning Intentions	Suggested Success Criteria
1	

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level D/E

Topic: Percentages

Periods: 6

Learning Outcomes

FRACTIONS PERCENTAGES AND RATIOS

Work with fractions and percentages

- mentally find widely-used fractions and percentages of whole number quantities.
- with a calculator find a fraction or percentage of a quantity
- without a calculator as previously defined
- apply percentage increase/decrease in context

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Level D/E

Topic: Time

Periods: 8

Learning Outcomes

TIME

Work with time:

Use 24 hour times and equate with 12 hour time

Calculate duration in hours/minutes, mentally if possible;

Time activities in seconds with a stopwatch;

Calculate speeds (practical activities only).

Time activities with a digital stopwatch in seconds, tenths, hundredths.

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Learning Outcomes**MEASURE AND ESTIMATE**

Measure and draw using standard units

-accuracy and device as appropriate to the application

Estimate measurements

-small lengths in millimetres

-larger lengths in metres

Work with square kilometre, hectare, tonne when appropriate

Read scales on measuring devices including estimating between graduations.

Realise that volume can be conserved when shape changes.

Suggested Learning Intentions

1

Suggested Success Criteria**Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Learning Outcomes

RANGE OF SHAPES

Use properties of 2D shapes—discuss the side, angle, diagonal properties of quadrilaterals: square, rectangle, rhombus, parallelogram, kite, trapezium

-define and classify quadrilaterals

PERIMETER, FORMULAE, SCALES

Calculate using rules:

-area of non-right –angled triangles(given the base and height), kite, rhombus, parallelogram and composite shapes

Calculate using rules:

-areas of rectangles and squares

Calculate perimeter of simple straight-sided shapes by adding lengths

Identify and name equilateral and isosceles triangles;

Suggested Learning Intentions

1

Suggested Success Criteria**Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level D/E

Topic: Sequences

Periods: 4

Learning Outcomes

PATTERNS AND SEQUENCES

Continue and describe more complex sequences (multiples and factors)

Recognise and explain simple relationships: between two sets of numbers or objects

Revision of solving equations

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level D/E

Topic: Ratio

Periods: 6

Learning Outcomes

FRACTIONS PERCENTAGES AND RATIOS

Find ratios between quantities

Use simple unitary ratio

Split a quantity in a given ratio

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Learning Outcomes

RANGE OF SHAPES

Use properties of 3D shapes

-make 3 D models, solid, solid or skeletal, including using nets: triangular prism, pyramid, tetrahedron

PERIMETER, FORMULAE, SCALES

Calculate using rules:

-volumes of cuboids and cubes

Suggested Learning Intentions

1

Suggested Success Criteria**Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level D/E

Topic: Scale drawing

Periods: 8

Learning Outcomes

PERIMETER, FORMULAE, SCALES

Use scales such as 1cm to 1, 2,5 or 10m or represented by a ratio such as 1:100 to interpret or draw maps, plans, and diagrams; or to make models.

POSITION AND MOVEMENT

Discuss position and movement

-use bearings and distances to produce accurate scale drawings of routes

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

SMP Booklets

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level D/E

Topic: Formulae and Problem Solving

Periods: 10

Learning Outcomes

FUNCTIONS AND EQUATIONS

Use a “function machine” in reverse for inverse operations.

Use notation to describe general relationships between 2 sets of numbers.

Use and devise simple rules.

Recognise simple relationships and construct/use simple formulae, equations and graphs(linear) to solve problems

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Learning Outcomes**RANGE AND TYPE OF NUMBERS**

Work with whole numbers up to 10000 (count, order, read/write)

Decimals to two places when reading/recording money and using calculator displays.

MONEY

Use coins/notes to £5 worth or more, including change

ADD AND SUBTRACT

Add and subtract mentally for one digit to or from whole numbers up to 3 digits;

Beyond in some cases involving multiples of 10 mentally for subtraction by “adding on”

Without a calculator for whole numbers with 2 digits added to or subtracted from 3 digits.

With a calculator for 3 digit whole numbers

In applications in number, measurement and money to £20.

MULTIPLY AND DIVIDE

Mentally within the confines of all tables to 10

Mentally for any 2 or 3 digit whole number by 10

Without a calculator for 2 digit whole numbers

In applications in number measurement and money to £20.

ROUND NUMBERS

Round 3 digit whole numbers to the nearest 10 (eg when estimating)

Suggested Learning Intentions**Suggested Success Criteria****Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos, Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level C/D

Topic: Angles

Periods: 8

Learning Outcomes

ANGLE

Know that a right angle is 90°

Use right, acute, obtuse to describe angles

Know that a straight angle is 180°

Draw, copy and measure angles accurately within 5 degrees;

Use standard notation, 060° , 150° , 300° , to express bearings

Suggested Learning Intentions

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty Internals materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Level C/D

Topic: Coordinates

Periods: 6

Learning Outcomes

POSITION AND MOVEMENT

Discuss position and movement

Use a co-ordinate system to locate a point on a grid

Where appropriate introduce grids with negative numbers

Suggested Learning Intentions

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level C/D

Topic: Symmetry & Tessellation

Periods: 6

Learning Outcomes

SYMMETRY

Work with symmetry:

Identify and draw lines of symmetry, generally up to 4;

Create symmetrical shapes

Create or copy a tiling using a shape template;

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Dime tessellation materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Learning Outcomes**COLLECT**

Obtain information for a task from a variety of given sources, including a sample questionnaire with yes/no type responses

Conduct a survey which extends beyond the class

ORGANISE

Use a tally sheet with grouped tallies

Enter data in a table using row and column headings

Use a database where the teacher defines the headings or fields.

With the aid, where appropriate of a computer package.

DISPLAY

Construct a table or chart

Construct a bar graph with axes graduated in multiple units and discrete categories of information

With the aid, where appropriate, of a computer package

INTERPRET

From displays and databases

By retrieving specific records

By identifying the most and least frequent items

With the aid, where appropriate, of a computer package.

Suggested Learning Intentions

1

Suggested Success Criteria**Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Level C/D

Topic: Fractions

Periods: 4

Learning Outcomes

Find simple fractions ($\frac{1}{3}$, $\frac{1}{5}$, $\frac{1}{10}$) of quantities involving 1 or 2 digit numbers

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level C/D

Topic: Algebra

Periods: 6

Learning Outcomes

ALGEBRA

Solve simple equations

Suggested Learning Intentions	Suggested Success Criteria
1	

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Level C/D

Topic: Time

Periods: 8

Learning Outcomes

TIME

Work with time:

Use 12 hour times for simple timetables;

Conventions for recording time

Work with hours and times

Use calendars

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Learning Outcomes**MEASURE AND ESTIMATE**

Measure and draw using standard units

-accuracy and device as appropriate to the application

Estimate measurements

-small lengths in millimetres

-larger lengths in metres

Work with square kilometre, hectare, tonne when appropriate

Read scales on measuring devices including estimating between graduations.

Realise that volume can be conserved when shape changes.

Suggested Learning Intentions

1

Suggested Success Criteria**Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level C/D

Topic: Sequences

Periods: 4

Learning Outcomes

PATTERNS AND SEQUENCES

Continue and describe more complex sequences (multiples and factors)

Recognise and explain simple relationships: between two sets of numbers or objects

Revision of solving equations

Suggested Learning Intentions	Suggested Success Criteria
1	

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level C/D

Topic: 3D Shape

Periods: 8

Learning Outcomes

RANGE OF SHAPES

Collect, discuss and use 3D and 2D shapes

Identify 2D shapes within 3D shapes

Draw circles using a variety of methods

Recognise 3D shapes from 2D drawings

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Polydron

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Learning Outcomes

RANGE OF SHAPES

Use properties of 2D shapes—discuss the side, angle, diagonal properties of quadrilaterals: square, rectangle, **rhombus**, **parallelogram**, **kite**, **trapezium**

-define and classify quadrilaterals (Extension)

PERIMETER, FORMULAE, SCALES

Calculate using rules:

-area of right-angled triangles (given the base and height),

Calculate using rules:

-areas of rectangles and squares

Calculate perimeter of simple straight-sided shapes by adding lengths

Identify and name equilateral and isosceles triangles;

Suggested Learning Intentions

1

Suggested Success Criteria**Department Resources:**

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

Polydron

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Level C/D

Topic: Scale drawing

Periods: 8

Learning Outcomes

PERIMETER, FORMULAE, SCALES

Use scales such as 1cm to 1, 2,5 or 10m or represented by a ratio such as 1:100 to interpret or draw maps, plans, and diagrams; or to make models.

POSITION AND MOVEMENT

Discuss position and movement

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty International materials

SMP Booklets

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused Active Listening Questioning Written Worksheet Self Assessment Peer Assessment Drawing Investigation

Next Steps:

Level C/D

Topic: Problem Solving

Periods: 10

Learning Outcomes

STARTING A TASK

Explore the task to identify and interpret the problem

Consider what might be relevant

Decide how to proceed

Select a strategy and choose appropriate mathematics

DOING A TASK

Implement strategies

Use organised, systematic and experimental approaches

Use appropriate mathematics

Come to conclusions

Interpret information in tables, graphs, diagrams and drawings

REPORTING ON A TASK

Use a variety of ways

-diagram

-oral form

-written form for a range of audiences and purposes

Suggested Learning Intentions

1

Suggested Success Criteria

Department Resources:

Scottish Secondary Mathematics Textbook

CAME materials and Kalidos

Amnesty Internals materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

Learning Outcomes

This is an introduction to percentages at this level. Pupils should have an opportunity to talk about and discuss what percentages are, where we find and use them before going on to calculate with them.

FRACTIONS PERCENTAGES AND RATIOS**Work with fractions and percentages**

- mentally find widely-used fractions and percentages of whole number quantities.
- with a calculator find a fraction or percentage of a quantity
- without a calculator as previously defined

Suggested Learning Intentions

1

Suggested Success Criteria**Department Resources:**

Scottish Secondary Mathematics Textbook
CAME materials and Kalidos
Amnesty International materials

Date	Learning Intention	Activities	Resources	Structure: Individual/Pair/Group VAK	Assessment
					Observation: General Focused
					Active Listening Questioning
					Written Worksheet Self Assessment
					Peer Assessment Drawing
					Investigation

Next Steps:

