



Strand Baseline Objectives

NUMBERS

Learners will understand that numbers are used for many different purposes in the real world. They will develop an understanding of one-to-one correspondence and conservation of number, and be able to count and use number words and numerals to represent quantities.

Whole Numbers / Place Values

- Read and write a number within 100 000 000 – the numeral and the corresponding number word.
- Identify the values of digits in a number within 1 000 000.
- Round a whole number to the nearest thousand, ten thousand, hundred thousand, million, ten million or hundred million.

Addition / Subtraction

- Estimate an answer in addition or subtraction.
- Do mixed operations and subtraction without parentheses.
- Do mixed operations involving addition, subtraction, multiplication and division without or with parentheses.
- Solve a multi-step word problem involving the four operations of whole numbers.

Multiplication / Division

- Estimate an answer in multiplication or division.
- Find the common factors and greatest common factor of two numbers.
- Find out if a number is a common factor of two given numbers.
- Find the common multiples and least common multiple of two numbers.
- Find out if a number is a common multiple of two given numbers.
- Multiply or divide a whole number by 10, 100, 1000.
- Do mixed operations involving multiplication and division without parentheses.
- Do mixed operations involving addition, subtraction, multiplication and division without or with parentheses.
- Multiply a 4-digit whole number by a 2-digit whole number.
- Divide a whole number up to 4 digits by a 2-digit whole number.
- Solve a multi-step word problem involving the four operations of whole numbers.

Integers

- Divide a whole number by an integer.
- Read, write and model addition and subtraction of integers.
- Select and defend the most appropriate and efficient method of solving a problem: mental estimation, mental arithmetic, pencil and paper algorithm, calculator.



Fractions

- Associate a fraction with division.
- Express an improper fraction as a whole number, mixed number or decimal.
- Divide a whole number by another whole number and write the quotient as a mixed number.
- Add or subtract unlike fractions and mixed numbers.
- Multiply fractions.
- Multiply a whole number by a mixed number.
- Multiply a fraction of mixed numbers by a mixed number.
- Divide a fraction by a whole number.
- Divide a whole number by a fraction.
- Solve a multi-step word problem involving fractions.

Decimals

- Round a decimal to a given place.
- Divide a decimal by a 1-digit whole number and round the quotient to 2 decimal places.
- Express a mixed number as a decimal correct to 2 decimal places.
- Multiply or divide a decimal or a whole number by 10, 100, 1000.
- Multiply or divide a decimal or a whole number by tens, hundreds or thousands.
- Multiply a decimal up to 2 decimal places by a 2-digit whole number.
- Multiply a decimal up to 2 decimal places by a decimal with 1 decimal place.
- Estimate an answer in multiplication.
- Check the reasonableness of an answer in multiplication.
- Convert a measurement of length, mass or volume of liquid from a larger unit of measure involving a decimal to a smaller unit and vice versa.
- Convert a measurement of length, mass or volume of liquid from a larger unit of measure involving a decimal to compound units and vice versa.
- Solve a multi-step word problem involving the four operations of decimals.
- Interchange fractions, percentages and decimals.

Percent

- Read and interpret a percentage of a whole.
- Express a fraction as a percent and vice versa.
- Express a decimal as a percent, and vice versa.
- Express a part of a whole as a percent.
- Understand that 1 whole as 100%.
- Find the value of a percentage of a quantity.
- Solve up to 2-step word problems involving percentage interest, tax and discount.

Rate

- Find the rate by expressing one quantity per unit of another quantity.
- Find a quantity using the given rate.
- Solve multi-step word problems involving rate.



Ratio

- Use a ratio to compare two or three quantities.
- Use a comparison bar model to show a ratio.
- Use a ratio to compare two quantities given in a comparison bar model.
- Write equivalent ratios.
- Write a ratio in its simplest form.
- Find a missing term in a pair of equivalent ratios.
- Solve a multi-step word problem involving ratio.
- Find and use scale (ratios) to enlarge and reduce shapes and to make and interpret maps and diagrams.

PATTERNS AND FUNCTIONS

Learners will analyse patterns and identify rules for patterns, developing the understanding that functions describe the relationship or rules that uniquely associate members of one set with members of another set. They will understand the inverse relationship between multiplication and division, and the associative and commutative properties of multiplication. They will be able to use their understanding of pattern and function to represent and make sense of real-life situations and, where appropriate, to solve problems involving the four operations.

- Understand and use the relationship between multiplication and division.
- Understand and use exponents, order of operations.
- Complete and create simple algebraic number sentences ($2x = 4$).
- Understand and solve simple equations, expressions.

Expressions

- Use letters to represent unknown numbers.
- Write a simple algebraic expression in one variable.
- Find the value of a simple algebraic expression using substitution.
- Simplify an algebraic expression in one variable.
- Solve a word problem by forming an algebraic expression.

MEASUREMENT

Learners will develop an understanding of how measurement involves the comparison of objects and the ordering and sequencing of events. They will be able to identify, compare and describe attributes of real objects as well as describe and sequence familiar events in their daily routine.

They will use measuring tools and read scales accurately and understand that the accuracy of a measurement depends on the situation and the precision of the tools.

Length

- Convert a measurement of length from a larger unit of measure involving a decimal to a smaller unit and vice versa.



- Convert a measurement of length from a larger unit of measure involving a decimal to compound units and vice versa.

Perimeter / Area

- Use a formula for finding the area of quadrilaterals and triangles.
- Measure the perimeter of a figure.
- Determine the relationship between area, perimeter and volume.
- Identify the base and height of a triangle.
- Find the area of a figure related to the area of a triangle.

Volume

- Convert a measurement of volume of liquid from a larger unit of measure involving a decimal to a smaller unit and vice versa.
- Convert a measurement of volume of liquid from a larger unit of measure involving a decimal to compound units and vice versa.
- Visualize a solid that is made up of unit cubes and state its volume in cubic units.
- Visualize the sizes of 1 cubic centimeter and 1 cubic meter.
- Find the volume of a solid made up of 1-centimeter and 1-meter cubes.
- Find the volume of a cuboid given its length, breadth and height.
- Convert from one unit of measure of volume to another.
- Calculate the surface area and volume of different solids.
- Find the capacity of cubic or rectangular containers.
- Find the length of one edge of a cube given its volume.
- Find the length of one edge of a cuboid given its volume and two other edges.
- Find the length of one edge of a cuboid given its area of one face and its volume.
- Solve word problems involving volume of water in a cubic or rectangular container.

Mass

- Convert a measurement of mass from a larger unit of measure involving a decimal to a smaller unit and vice versa.
- Convert a measurement of mass from a larger unit of measure involving a decimal to compound units and vice versa.

Time and clock

- Tell time to the second.
- Calculate an elapsed time.

SHAPES AND SPACE

Learners will understand that shapes have characteristics that can be described and compared. They will understand and use common language to describe paths, regions and boundaries of their immediate environment.

Plane Shapes



- Understand and use geometric vocabulary for circles: diameter, radius and circumference, chord.
- Use a pair of compasses to construct a circle of a given radius.
- Classify, sort and label all types of polygons.
- Identify a symmetric figure.
- Identify all lines of symmetry in a given shape.
- Describe, classify and model 3-D shapes.
- Find and use scale (ratios) to enlarge and reduce shapes and to make and interpret maps and diagrams.
- Determine whether a line is a line of symmetry of a figure.
- Complete a symmetric figure with respect to a given horizontal or vertical line of symmetry.
- Make a symmetric pattern.
- Read and plot coordinates in four quadrants.
- Recognize that the sum of the angle measures in a triangle is 180° .
- Find an unknown angle measure in a triangle given the other two angles measures.
- Identify a right triangle.
- Recognize that when one angle of a triangle is a right angle, the sum of the measures of the other two angles is 90° .
- Recognize that the measure of the exterior angle of a triangle is equal to the sum of the measures of the interior opposite angles.
- Find an unknown angle measure in a triangle is equal to the sum of the measures of the interior opposite angles.
- Find an unknown angle measure in a triangle involving an exterior angle.
- Identify an isosceles triangle and an equilateral triangle.
- Draw a triangle, rectangle, square, parallelogram, rhombus or trapezoid given the measurements.
- Identify the unit shape in a tessellation.
- Identify if a given shape can tessellate.
- Make different tessellations with a unit shape.
- Draw a tessellation on dot paper.
- Make a tessellation with two different shapes.

Solid shapes

- Build a solid with unit cubes.
- Visualize a solid drawn on dot paper and state the number of unit cubes used to build the solid.
- Identify the front, top and side views of a solid.

Angles

- Use notations such as $\sphericalangle ABC$ and $\sphericalangle x$.
- Measure and construct angles in degrees using a protractor.
- Recognize that the sum of the angle measures on a line is 180° .
- Recognize that the sum of the angle measures at a point is 360° .
- Recognize that vertically opposite angles have equal measures.
- Find the unknown measure of an angle involving angles on a line, angles at a point and vertically opposite angles.



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- Recognize that the sum of the angle measures in a triangle is 180° .
- Find an unknown angle measure in a triangle give the other two angle measures.
- Recognize that when one angle of a triangle is a right angle, the sum of the measures of the other two angles is 90° .
- Recognize that the measure of the exterior angle of a triangle is equal to the sum of the measures of the interior angle.
- Recognize that the angles opposite the equal sides of a triangle have equal measures.
- State and apply the properties of parallelograms, rhombuses and trapezoids.

DATA HANDLING

Learners will develop an understanding of how the collection and organization of information helps to make sense of the world. They will sort, describe and label objects by attributes and represent information in graphs including pictographs and tally marks. The learners will discuss chance in daily events.

Graphs

- Design a survey and systematically collect, organize and record the data in displays: tally chart, bar graphs, line graphs, simple pie chart, stem + leaf plot.
- Create, interpret, compare and evaluate data displays (bar/line graphs, pie charts, Venn diagrams, etc.) to determine how well they communicate information.
- Find, describe and explain the mean, range, median, mode in a set of data and understand its use.
- Use a numerical probability scale 0 to 1.

Tables

- Present data in a table.
- Read and interpret a table.
- Solve problems using data presented in a table.