

CIPS Math scope and sequence March 2014

| Year 2 (6-7s) | | | | | |
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| | Number | Pattern & Function | Measurement | Data Handling | Space and Shape |
| Overall expectations | Learners will develop their understanding of the base 10 place value system and will model, read, write, estimate, compare and order numbers to hundreds or beyond. They will have automatic recall of addition and subtraction facts and be able to model addition and subtraction of whole numbers using the appropriate mathematical language to describe their mental and written strategies. Learners will have an understanding of fractions as representations of whole-part relationships and will be able to model fractions and use fraction names in real-life situations. | Learners will understand that whole numbers exhibit patterns and relationships that can be observed and described, and that the patterns can be represented using numbers and other symbols. As a result, learners will understand the inverse relationship between addition and subtraction, and the associative and commutative properties of addition. They will be able to use their understanding of pattern to represent and make sense of real-life situations and, where appropriate, to solve problems involving addition and subtraction. | Learners will understand that standard units allow us to have a common language to measure and describe objects and events, and that while estimation is a strategy that can be applied for approximate measurements, particular tools allow us to measure and describe attributes of objects and events with more accuracy. Learners will develop these understandings in relation to measurement involving length, mass, capacity, money, temperature and time. | Learners will understand how information can be expressed as organized and structured data and that this can occur in a range of ways. They will collect and represent data in different types of graphs, interpreting the resulting information for the purpose of answering questions. The learners will develop an understanding that some events in daily life are more likely to happen than others and they will identify and describe likelihood using appropriate vocabulary. | Learners will continue to work with 2D and 3D shapes, developing the understanding that shapes are classified and named according to their properties. They will understand that examples of symmetry and transformations can be found in their immediate environment. Learners will interpret, create and use simple directions and specific vocabulary to describe paths, regions, positions and boundaries of their immediate environment. |
| Conceptual understandings | <p>The base 10 place value system is used to represent numbers and number relationships.</p> <p>Fractions are ways of representing wholepart relationships.</p> <p>The operations of addition, subtraction, multiplication and division are related to each other and are used to process information to solve problems.</p> <p>Number operations can be modelled in a variety of ways.</p> <p>There are many mental methods that can be applied for exact and approximate computations.</p> | <p>Whole numbers exhibit patterns and relationships that can be observed and described.</p> <p>Patterns can be represented using numbers and other symbols.</p> | <p>Standard units allow us to have a common language to identify, compare, order and sequence objects and events.</p> <p>We use tools to measure the attributes of objects and events.</p> <p>Estimation allows us to measure with different levels of accuracy.</p> | <p>Information can be expressed as organized and structured data.</p> <p>Objects and events can be organized in different ways.</p> <p>Some events in daily life are more likely to happen than others.</p> | <p>Shapes are classified and named according to their properties.</p> <p>Some shapes are made up of parts that repeat in some way.</p> <p>Specific vocabulary can be used to describe an object's position in space.</p> |
| | <p>When constructing meaning learners:</p> <ul style="list-style-type: none"> • model numbers to hundreds or beyond using the base 10 place value system** • estimate quantities to 100 or | <p>When constructing meaning learners:</p> <ul style="list-style-type: none"> • understand that patterns can be found in numbers, for example, odd and even numbers, skip counting | <p>When constructing meaning learners:</p> <ul style="list-style-type: none"> • understand the use of standard units to measure, for example, length, mass, money, time, temperature | <p>When constructing meaning learners:</p> <ul style="list-style-type: none"> • understand that sets can be organized by one or more attributes • understand that information | <p>When constructing meaning learners:</p> <ul style="list-style-type: none"> • understand that there are relationships among and between 2D and 3D shapes • understand that 2D and 3D shapes |

Expectations in red are for the current year group

Expectations in black are the rest of the expectations in the phase. They are included so teachers can see what 'next steps' will be

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| Learner Outcomes | <p>beyond</p> <ul style="list-style-type: none"> • model simple fraction relationships • use the language of addition and subtraction, for example, add, take away, plus, minus, sum, difference • model addition and subtraction of whole numbers • develop strategies for memorizing addition and subtraction number facts • estimate sums and differences understand situations that involve multiplication and division • model addition and subtraction of fractions with the same denominator. | <ul style="list-style-type: none"> • understand the inverse relationship between addition and subtraction • understand the associative and commutative properties of addition. | <ul style="list-style-type: none"> • understand that tools can be used to measure • understand that calendars can be used to determine the date, and to identify and sequence days of the week and months of the year • understand that time is measured using universal units of measure, for example, years, months, days, hours, minutes and seconds.. | <p>about themselves and their surroundings can be collected and recorded in different ways</p> <ul style="list-style-type: none"> • understand the concept of chance in daily events (impossible, less likely, maybe, most likely, certain). | <p>can be created by putting together and/or taking apart other shapes</p> <ul style="list-style-type: none"> • understand that examples of symmetry and transformations can be found in their immediate environment • understand that geometric shapes are useful for representing real-world situations • understand that directions can be used to describe pathways, regions, positions and boundaries of their immediate environment. |
| | <p>When transferring meaning into symbols learners:</p> <ul style="list-style-type: none"> • read and write whole numbers up to hundreds or beyond • read, write, compare and order cardinal and ordinal numbers • describe mental and written strategies for adding and subtracting two-digit numbers. | <p>When transferring meaning into symbols learners:</p> <ul style="list-style-type: none"> • represent patterns in a variety of ways, for example, using words, drawings, symbols, materials, actions, numbers • describe number patterns, for example, odd and even numbers, skip counting. | <p>When transferring meaning into symbols learners:</p> <ul style="list-style-type: none"> • estimate and measure objects using standard units of measurement: length, mass, capacity, money and temperature • read and write the time to the hour, half hour and quarter hour • estimate and compare lengths of time second, minute, hour, day, week and month. | <p>When transferring meaning into symbols learners:</p> <ul style="list-style-type: none"> • collect and represent data in different types of graphs, for example, tally marks, bar graphs represent the relationship between objects in sets using tree, Venn and Carroll diagrams • express the chance of an event happening using words or phrases (impossible, less likely, maybe, most likely, certain). | <p>When transferring meaning into symbols learners:</p> <ul style="list-style-type: none"> • sort, describe and label 2D and 3D shapes • analyse and describe the relationships between 2D and 3D shapes • create and describe symmetrical and tessellating patterns • identify lines of reflective symmetry • represent ideas about the real world using geometric vocabulary and symbols, for example, through oral description, drawing, modelling, labelling • interpret and create simple directions, describing paths, regions, positions and boundaries of their immediate environment. |
| | When applying with | When applying with | When applying with | When applying with | When applying with |

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| | <p>understanding learners:</p> <ul style="list-style-type: none"> • use whole numbers up to hundreds or beyond in real-life situations • use cardinal and ordinal numbers in real-life situations • use fast recall of addition and subtraction number facts in real-life situations • use fractions in real-life situations • use mental and written strategies for addition and subtraction of two digit numbers or beyond in real-life situations • select an appropriate method for solving a problem, for example, mental estimation, mental or written strategies, or by using a calculator • use strategies to evaluate the reasonableness of answers. | <p>understanding learners:</p> <ul style="list-style-type: none"> • extend and create patterns in numbers, for example, odd and even numbers, skip counting • use number patterns to represent and understand real-life situations • use the properties and relationships of addition and subtraction to solve problems. | <p>understanding learners:</p> <ul style="list-style-type: none"> • use standard units of measurement to solve problems in real-life situations involving length, mass, capacity, money and temperature • use measures of time to assist with problem solving in real-life situations. | <p>understanding learners:</p> <ul style="list-style-type: none"> • collect, display and interpret data for the purpose of answering questions • create a pictograph and sample bar graph of real objects and interpret data by comparing quantities (for example, more, fewer, less than, greater than) • use tree, Venn and Carroll diagrams to explore relationships between data • identify and describe chance in daily events (impossible, less likely, maybe, most likely, certain). | <p>understanding learners:</p> <ul style="list-style-type: none"> • analyse and use what they know about 3D shapes to describe and work with 2D shapes • recognize and explain simple symmetrical designs in the environment • apply knowledge of symmetry to problem-solving situations • interpret and use simple directions, describing paths, regions, positions and boundaries of their immediate environment. |
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