## scope and sequence Mathematics - Years 1 to 9 number

Scope and sequence identifies what should be taught and what is important for students to have opportunities to learn. It describes the knowledge that students need for ongoing learning in Mathematics.
This knowledge is presented as Concepts and facts and Procedures.
The scope and sequence:

- is provided for each year of schooling
- should be used together with the Essential Learnings
- provides additional detail in each Organiser
- informs the focus of Mathematics in assessment


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| Prep | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - Concrete materials: - computers - manipulative materials (random <br> manipulative materials (random placement, patterns, and in a line) <br> - vertal <br> counting forward to 10 , <br> backward in 15 trom 5 , next number in number in the chant of the counting seauence. e. <br>  <br> everyday language: slice, piece, <br> number names 0 to 10 <br> - Visual: <br> pictures of collections <br> five frame <br> - blank number line | - Concrete materials: compute devices <br> - manipulative materials (random placement, in a line patterns, pattern, quantity of number, e.g and one bat or two balls and two bats) <br> - counting (forward to 100 orward in 2 s to 20 , backward in 1s from 10) operation to be used operation <br> - explanations of reasoning calculation strategies and mathematical language: add, calculate, cover up, part, whole, number names 0 to 10 <br> - Written: <br> symbolic: add (+), subtract (-) patterns, e.g. $+1,+2,+3$, <br> - Visual: pictures <br> pictures five frame, ten frame number line number chart to 100 or three objects groups of two larger numbers without pattern | Concrete materials: <br> computers and other electronic devices <br> of 5 and 10 materials (groups different combinations of 2 <br> numbers to same value) <br> - Verbal: <br> counting (forward in $2 \mathrm{~s}, 5 \mathrm{~s}, 10 \mathrm{~s}$ to 100, strategies for operations extensions to larger numbers, backward in 1s from any number) <br> operation to be used <br> estimates <br> explanations of reasoning <br> calculation strategies and <br> - mathematical language: number add, subtract, left, multiply and divide, groups of, rows of, jumps of, share between, share, odd, Written: <br> - symbolic: equals (=), does not equal ( $\neq$ ) <br> words and electronic <br> calculations for the operations devices <br> Visual: <br> - pictures <br> five frame, ten frame <br> number line <br> number chart to 100 <br> subitising | - Concrete materials: - computers and other electronic devices <br> manipulative materials (number of numbers to equivalent value sharing materials into groups <br> - Verbal <br> counting (forward in $10 \mathrm{~s}, 100$ s to three-digit numbers, extensions to larger numbers, backwards in 100 s and 10 s , counting on from different numbers) estimates <br> explanations of reasoning reasonableness of solution - explanations about why one based on place value link different symbolic <br> representations of numbers, fractions and mixed numbers mathematical language: number add, subtract, multiply and divide, arrays, equal groups of Written: <br> symbolic: multiply ( $x$ ), divide $(\div)$ than (<) <br> calculations for the operations with and without electronic devices <br> - Visual <br> pictures <br> number line <br> - number chart of skip counting patterns for and from differen numbers, e.g. 3 - arrays equal groups faces, electronic | Concrete materials <br> computers and other electronic devices <br> manipulative materials (different fractions of objumbers, <br> - Verbal: <br> collection, parts of measures) <br> - counting (extensions to larger numbers) <br> - explanations of reasoning <br> - calculation strategies and <br> - mathematical language: number names to thousands, fraction multiples, factors <br> - Written: <br> - symbolic: fractions <br> - calculations for the operations with and without electronic devices <br> - number patterns on number <br> Visual: <br> - number line <br> - number chart | Concrete materials <br> computers and other electronic devices <br> (collections materials collections of objects, parts of number patterns, different representations, e.g. area, set <br> Verbal: and linear models) <br> - counting <br> - explanations of reasoning <br> - calculation strategies and <br> reasonableness of solutions <br> mathematical language: numbe names to 9999 , numerator, denominator, vinculum <br> - Written: <br> symbolic: fractions, multiply (*), divide (/) <br> words and <br> calculations for the operations devices <br> - Visual: <br> - number line <br> fraction walls | Concrete materials: - computers and other electronic compute devices <br> - manipulative materials (different e.g. MAB) <br> - Verbal: <br> counting (fractions, e.g. $1 / 3,2 / 3,1$ $1 / 3$ ) 1 $11 / 3$ ) estimat <br> - explanations of reasoning <br> - calculation strategies and <br> reasonablenes mathemal language: <br> percentage <br> Written: <br> index notation for square symbers, e.g. $6 \times 6,\left(6^{2}\right)$ symb: vinculum as a divisor percentage (\%) <br> e.g. $20 \mathrm{~K} / 20$ viations <br> e.g. $20 \mathrm{~K} / 20000$, $\$ 1.5 \mathrm{~m} / \$ 1.5$ million <br> $\$ 3 \mathrm{~b} / \$ 3$ billion and electronic devices <br> calculations for the operations with and without electronic devices <br> - Visual: number line percentages on area grids | Concrete materials: <br> computers and other electronic devices <br> - Manipulative materials <br> Verbal: <br> estimates <br> justifications of reasoning <br> calculation strategies and reasonableness of solutions <br> Written: <br> symbolic: conventional notation for fractions including improper fractions and powers, ratio (:) <br> e.g. spreadsheets <br> calculations for the operations <br> with and without electronic devices <br> estimates of negative numbers <br> - $\begin{array}{r}\text { on n } \\ \text { - }\end{array}$ <br> - number line | Concrete materials: <br> computers and other electronic devices <br> - Verbal: <br> Verbal: <br> - justification and approximations <br> - justifications of reasoning <br> - calculation strategies and <br> - Written: <br> symbolic: conventions of the four operations including brackets <br> with and with and without electronic devices <br> - estimates <br> conversions between different representations of rational <br> Visual: <br> - number line <br> - factor trees | - Concrete materials: <br> computers and other electronic devices <br> - Verbaliplative materials <br> Verbal <br> whole number quare roots, approximations <br> - justifications of reasoning <br> calculation strategies and <br> - Written <br> symbolic: conventions of the four operations including brackets and indices brackets and indices calculations for the operations with and without electronic devices <br> - scientific notation on scientific calculators as 1.99 E8 graphical representations of <br> - Visual: <br> - "ractor number" line factor trees |
| Concepts and facts <br> - Money for goods or services, e.g. bus fare, saving and spending | Concepts and facts <br> - Purchase price for goods and services | Concepts and facts <br> - Equivalent value of coins and notes | Concepts and facts <br> - Estimation of close values, e.g. using $\$ 5$ note when the cost is ${ }^{54.75}$ | Concepts and facts <br> Available money saving plans spending amounts $\qquad$ | Concepts and facts <br> Income: household <br> - Household budget <br> - Saving, borrowing, interest and <br> - $\begin{aligned} & \text { Saving } \\ & \text { fees }\end{aligned}$ <br> - Spending, transaction fees on cards | Concepts and facts <br> - Factors influencing financial decisions, transactions and pending: <br> value for money - budget <br> - methods of payment e.g. EFTPOS, credit and debit cards cash $\qquad$ | Concepts and facts <br> - Factors influencing financial decisions, transactions and spending: <br> value for money - budget <br> methods of payment e.g. EFTPOS, credit and debit orders <br> available income or savings | Concepts and facts <br> - Factors influencing financia expenditure <br> - Income: rates of pay <br> Cash, credit and debit benefits <br> - F consequences - organisations | Concepts and facts <br> - Factors influencing financia <br> ecisions, transactions and <br> - Cash, credit and debit <br> transactions. <br> - Fees and efit analysis <br> - Governments <br> services taxes |
| Procedures <br> - Comparison and sorting <br> Concrete materials: <br> - computers <br> manipulative materials, dollar coins, $\$ 5, \$ 10$ notes, financia <br> - Verbal: transaction cards <br> - everyday language: names of <br> dollar coins and $\$ 5, \$ 10$ notes <br> - Visual: <br> features of coins and notes $\$ 1$, <br> $\$ 2$ coins, $\$ 5, \$ 10$ | Procedures <br> - Comparison and classification <br> - Concrete materials: computers and other electronic devices <br> - manipulative materials, coins and notes, financial transaction cards <br> - Verbal <br> - everyday language: names of <br> Coins and notes, cost, price - Writen: <br> Written: - conve <br> conventions for representing <br> - Visual: <br> - features of coins to 2 dollars, notes to $\$ 100$ <br> - advertising | Procedures <br> - Concrete materials: <br> - computers and other electronic devices <br> - manipulative materials, coins and notes, financial transaction <br> cards - Verbal: <br> - everyday language: names of coins and notes, advertised <br> price, - Written: <br> - conventions for representing <br> money <br> - features of coins, notes - advertising | Procedures <br> - Concrete materials: computers and other electronic devices <br> - manipulative materials, coins and notes, financial transaction cards <br> - Verbal: <br> - everyday language: names of <br> coins and notes, change <br> Written: <br> - conventions for representing <br> Visual: <br> - advertising prices | Procedures <br> - Concrete materials: <br> computers and other electronic devices <br> - manipulative materials, coins and notes, financial transaction cards <br> - Verbal: <br> everyday language: names of <br> Coins and notes, change <br> Written: <br> simple financial records, e.g. list of expenditure with the leftover balances from savings, simple electronic spreadsheet conventions for representing money and calculator displays e.g. 2 <br> Visual <br> prices with fees | Procedures <br> - Concrete materials: computers and other electronic devices <br> manipulative materials, coins and <br> Verbal: financial transaction cards <br> - everyday language: names of coins and notes, change <br> Written: <br> simple financial records calculator displays, e.g. 2.8 display means \$2.80 and <br> Visual: - prices | Procedures <br> - Concrete materials: computers and other electronic devices <br> manipulative materials, credit <br> and debit cards <br> - budgets <br> - financial records, e.g. table of savings, expenses and balances, electronic spreadsheet discounts <br> disco - Visual: <br> - prices with discounts | Procedures <br> - Concrete materials: <br> - computers and other electronic devices <br> - manipulative materials, credit and debit cards and money orders Written: <br> Written: <br> - financial records <br> - cheques <br> - conventions for percentage discounts discounts | Procedures <br> Concrete materials: <br> - computers and other electronic devices <br> - manipulative materials, credit <br> Written: <br> - conventions for percentage <br> discounts <br> - Visual: <br> - lists - tables | Procedures <br> - Concrete materials <br> computers and other electronic <br> devices - <br> - manipulative materials, State and Federal Government <br> Written: <br> - Written: <br> - lists <br> - tables <br> - Visual: <br> - lists <br> - tables - graphs |

