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|  | **Campbell House School Teaching and Learning Program** | | | | | | | | | | | | | | | | |
| **Title/Type of Unit: Mathematics – Number and Algebra**  **Duration: 11 weeks** | | | | | | | | | | | | | | | | |
| **Syllabus Outcomes**  **Stage 5** | *A student:*  MA5.1 – 2WM Selects and uses appropriate strategies to solve problems  MA5.2 – 1WM Selects appropriate notations and conventions to communicate mathematical ideas and solutions  MA5.3 – 2WM generalises mathematical ideas and techniques to analyse and solve problems efficiently  MA5.1 – 5NA operates with algebraic impressions involving positive integer and zero indices, and establishes the meaning of negative indices for numerical bases  MA5.1 – 7NA graphs simple non-linear relationships | | | | | | | | | | | | | | | | |
| **Connectedness**  **Why does this learning matter?** | **Students learn to:**  **Number**   * Use index notation and represent whole numbers as products of powers of prime numbers. * Use square roots of perfect square numbers * Use terminating and recurring decimals * Understand the concept of irrational numbers * Expand and apply index laws to variables. Using positive integer indices and the Zero index. * Carry out the four operations with rational numbers and integers, using efficient mental and written strategies and appropriate digital technologies   **Algebra**   * Create algebraic expressions and evaluate them by substituting a given value for each variable * Factorise algebraic expressions by taking out a common algebraic factor * Simplify algebraic products and quotients using index laws * Apply the four operations to simple algebraic fractions with numerical denominators. * Use algebraic expressions to solve real world problems. | | | | | | | **Students learn about:**  **Place value**   * Place value of numbers greater than 1 * Place value of numbers on the number plane   **Fractions**   * Fractions, equal fractions, and fraction place value * Mixed numerals and improper fractions * Adding and subtracting fractions   **Decimals**   * Decimal place values * Remanning decimals * Rounding decimals * Terminating and recurring decimals   **Patterns**   * Index notation * Square roots   **Algebra**   * Using Integers (multiplying and dividing) * Extending index laws * Indices and exponents of numbers * Applying multiplication, addition, subtraction and division to simple algebraic equations | | | | | | | | | |
| **Background and Key Ideas** | Program focuses on extending and strengthening preliminary numeracy skills and place value understandings. It puts an understanding of why numbers have value and helps them think about how to combine quantities and eventually how this process connects with written procedure. The programs content focuses on equipping students with skills to think logically and gain practice in place value, ratio’s, rate conversions and fluency in movement between number types to consolidate strong groundwork for the next topic financial maths, where conversions and fluency in decimals, fractions and whole numbers is vital. Students are practicing applying their mathematical knowledge to solve problems. Students use background knowledge of whole numbers, rounding and the four mathematical operations. | | | | | | | | | | | | | | | | |
| **Literacy Continuum** | Reading Texts | Comprehension | | | Vocabulary Knowledge | | Aspects of Writing | | Aspects of Speaking | | | | Phonics | Phonemic Awareness | | | Concepts About Print |
| **Student:** Cluster 7. cluster 10  **Literacy Aspect:** Vocabulary Knowledge  **Element:** cluster 7 and cluster 10  **Teaching activities linked to program to increase learning:**  Knows the meaning of commonly used words in increasingly challenging texts and can demonstrate this knowledge when reading, writing and speaking.  Students will use common words such as sum, subtract, add, addition, multiply, relationship between, greater than, smaller than. Students are to apply these terms in varying complex contexts.  Demonstrates understanding that words can have different meanings in different contexts. Demonstrates expanded content vocabulary by drawing on a combination of known and new topic knowledge. Students will extend their understanding of words such as integer, index, notation within the new topic knowledge | | | | | | | | | | | | | | | | |
| **Numeracy Continuum** | Counting Sequences | | Counting as Problem Solving | | | Pattern and Number Structure | | Place Value | | | | Multiplication and Division | | | Fraction Units | | Length, Area and Volume |
| Student:  Numeracy Aspect: Aspect 4  Element: System place value NS3.2 – recognises that the place value system can be extended indefinitely in two directions – to the left and right of the decimal point and recognises the relationship between values of adjacent places.  Teaching activities linked to program to increase learning:  Students are consolidating knowledge to move fluidly between information being communicated as whole numbers, fractions and decimal points. Students are building knowledge and practice in counting with ten as a unit of ones and tens. Students are practicing the use of split numbers to mentally calculate combinations of numbers to 1000. Students are using games, counters, MAB blocks, system place charts to practice these skills. | | | | | | | | | | | | | | | | |
| **Quality Teaching** | | | | | | | | | | | | | | | | | |
| **Intellectual Quality** | | | | **Quality Learning Environment** | | | | | | **Significance** | | | | | | | |
| * IQ1 Deep Knowledge * IQ2 Deep Understanding * IQ3 Problematic Knowledge * IQ4 Higher-order Thinking * IQ5 Metalanguage * IQ6 Substantive Communication | | | | * QLE1 Explicit Quality Criteria * QE2 Engagement * QE3 High Expectations * QE4 Social Support * QE5 Students’ Self-regulation * QE6 Student Direction | | | | | | * S1 Background Knowledge * S2 Cultural Knowledge * S3 Knowledge Integration * S4 Inclusively * S5 Connectedness * S6 Narrative | | | | | | | |
| **Teaching and Learning Lesson Overview** | | | | | | | | | | | | | | | | | |
| **The Elements of Learning & Achievement**    F:\Mock ups\Square elements\Numeracy.jpg        E:\Final V1\Final sq NO border\Sq Technology no bdr.jpg | Number and Algebra content specific  Week 1: place value and the number plane  F:\Mock ups\Square elements\Numeracy.jpgLesson 1: Place value numbers up to 1000. Understanding 34 as three tens and four, or 340 as 34 tens. (building skills and knowledge for long multiplication and addition and for quicker addition of numbers calculated mentally.  - Discussion:  What does place value mean? Why do we use place value?  PRE - ASSESMENT  - Teacher demonstration:  Numbers fit into a category. Teacher demonstrates hundreds, tens and ones column. Shows that 11 both ones look the same and seem as though they are from the same place value but the first one is really 10, they are both treated as single numerical entities. Ten is a (one) unit of ten and ten ones at the same time. we count by ten as it is a short cut act then counting ten ones.  Teacher example 46 mints in a sealed box. 1 box, 5 rolls of ten mints and 7 individual mints in each roll. 46 mints  - Students activity:  1. Students sort numbers provided into columns.  2. Students make numbers provided out of MAB blocks  - worksheet:  Place value and missing numbers.  Lesson 4: Place values of numbers smaller than 1000 - addition.  Discussion; we are good at showing where each unit fits, but what is the point of it?  We are doing this to help us make addition and subtraction of numbers easier for us.  Teacher demonstration;  28 + 34 =  In order to solve this mentally (without calculators) we need to take note of the tens and ones units. Start with the ones and add them because they are alike.  Show with MAB blocks that the 2 and 3 are blocks of ten and the 8 and 4 are single. We can’t just add each number together because they don’t hold the same value.  Addition Problem 429 + 67  400 + 20 + 9  + 60 + 7  Work out as a class  35+ 43=  400 +83 =  400 + 830 =  435 + 8 =  306 + 65 =  307 + 803 =  When showing competency in the last two individually -  Move on to: if pencils come in boxes of 15 how many pencils are in 20 boxes?  Show long working out; 15x15x15x15x15x15 etc  Or:  5 x 20 = 100  10 x 20 = 200  = 300  Examples 3 and 4  Match box 50 matches, 12 match boxes  Bag 36 lollies, 1 box which has 45 bags in it.  Student worksheet  Place value addition.  F:\Mock ups\Square elements\Numeracy.jpg  Week 2: place value and long addition and subtraction  Lesson 1: Place values of numbers smaller than 1000 subtraction. NO REGROUP  Teacher demonstration.  Recover expansion. 3725 as 3000 + 700 + 20 + 5.  15 pens minus 10 =  10 means it is 1 ten and 0 ones, meaning we are subtracting from the tens column.  Examples 2 – 4:  2. 26 = 20 + 6 3. 39 = 30 + 9  - 5 = - 5 - 6 = - 6    4. 310 = 300 + 10 5. 29 = 20 + 9  - 9 = - 9 -19 = -10 + 9  - Worksheet: Place value subtraction no regroup  Lesson 3: Place values of numbers smaller than 1000 subtraction. REGROUP  Teacher example: demonstrate and discuss.  Recover expansion. 3725 as 3000 + 700 + 20 + 5.  Teacher demonstrate examples 1- 5. Show all examples like question 5.  15 2. 12 3. 22 4. 142  - 6 - 6 - 14 - 36  5.  378 = 300 + 70 + 8 or  -59 = - 50 + 9  example to students that they don’t need to expand the question when they understand where to line up the two numbers.  Worksheet: Place value subtraction regroup  Lesson 5: Place values subtraction with two regroups or across zero’s.  Teacher example: demonstrate and discuss.  Revise simple subtraction with one regroup  Show two examples, one with two regroups and one with subtraction across zeros. Class discussion.  Examples are first two from both sheets.  Worksheet: 1. Two regroups  Regroup across zero.    Week 3: place value Long multiplication and Division  Lesson 1: Place values multiplication single digit.  Teacher example: demonstrate and discuss.  Teacher uses counters or cut-outs to demonstrate multiplication as meaning “groups of” students are shown. 4 x 3= (is the same as four groups of three.  Teacher gets students to make 7x8 with counters  Teacher shows students that long multiplication is the same, shows 24 x 16 with premade chart showing 24 groups with 16 items in each.  Example 8 x 3=  3 + 3 + 3 + 3 + 3 + 3 + 3 + 3  Or 8 + 8 + 8  Teacher to explain that putting them in groups like this is too time consuming when they are larger numbers and can be done with a short cut.  Teacher examples: question 1 & 2 of student worksheet.  Students complete worksheet multiplication  Lesson 2: Place values multiplication multiple digits.  - Teacher demonstrates on the board how place value effects when long multiplying.  Write 756 above 32, making sure that the ones and tens columns of both numbers line up, so that the 6 from 756 is above the 2 in 32 and the 5 in 756 is above the 3 in 32, and so on.  Multiply the number in the ones place of the bottom number by the number in the ones place of the top number.  Multiply the number in the ones place of the bottom number by the number in the tens place of the top number.  Multiply the number in the ones place of the bottom number by the number in the hundreds place of the top number.  Draw a 0 in the units column below the first product. Because the 3 is in the tens place we need to hold the tens place by placing a zero in the 1's place before we start multiplying.  Multiply the number in the tens place of the bottom number by the number in hundreds place of the top number.  Add the ones digits of both products.  Teacher example 1 & 2 of student sheet  Students complete the sheet Multiplication of two digits  Lesson 4: Place value and singular division.  Teacher example: demonstrate and discuss.  Revisit multiplication. Show students that division is the same as multiplication that it is asking you to divide or spread the items into how ever many piles outlined.  E.g 16 / 4 is asking how many are in each group if there are four groups  Teacher demonstrates with coins  Students are to complete four practice with coins:  a. 28 / 7 b. 36 / 6 c. 12/ 2 d. 8 / 4  - Teacher explains that one is looking for the other multiple of the number i.e 7 x ? =28 or how many 7’s go into 28. Teacher shows how to do the above coin questions in the short cut square root method.  Teacher demonstrates examples 1- 5 of student’s worksheet.  Students complete worksheet; One step division  F:\Mock ups\Square elements\Numeracy.jpg  Week 4: place value, division and number plane  Lesson 1: Place value and two-step division.  Teacher example: demonstrate and discuss.  Revisit division from last lesson. Show students that division is the same as multiplication that it is asking you to divide or spread the items into how ever many piles outlined.  Teacher does questions 1 – 4 (students worksheet) on board.  PRE - ASSESMENT  Lesson 3: division with remainders  Teacher example: demonstrate and discuss.  Revisit division from last lesson. Show students that division is the same as multiplication that it is asking you to divide or spread the items into how ever many piles outlined.  Teacher does questions 1 – 4 (students worksheet) on board.  Student worksheet; division with remainders  Lesson 4: Post-test place values and operations.  Students are to complete two parts of the maths test:  Part one: place value – examining all place value knowledge to this date.  Part two: use of operations and flexibility and fluidity in long (expansion) working out of questions.  Lesson 5: Number plane  Discussion  students place numbers correctly on number plane tied in the classroom  students peg numbers given to them on the number line in the correct order. Numbers include simple fractions, simple decimal points and numbers up to 30.  Student worksheet: the number plane  F:\Mock ups\Square elements\Numeracy.jpg  Week 5: Fractions in the place value system.  Lesson 1: Types of fractions and how fractions and whole numbers relate.  Discussion, in relation to the number plane where do fractions fit in.  Teacher demonstrates that fractions are parts of whole numbers. Demonstration using fraction pieces. Demonstration using a chocolate bar. The whole bar is made up of 30 pieces. One piece is part of the whole and is therefore a smaller value and smaller in size compared to the whole. One piece would be 1/30 written as a fraction.  Students practice writing fractions of the following:  a. Two markers are shown how many are red. (First think how many are there all together put that at the bottom of the line. Then think how many is the question asking or how many are red.  b. 7 fish, how many are clown fish  c. Instruments, how many do you know the name of?  d. food pictures, how many are fast food items?  Students are then required to put the fractions in the correct place on the number plane as a whole class exercise.  Student worksheet – introduction to writing fractions.  -- colour fractions  Lesson 3: Fractions and addition of like fractions.  teacher demonstrates the fractions of a whole using the fractions explained cut outs and laminated. Teacher gives students one half fraction an one third fraction pieces from the cut outs and asks students are they the same size?  teacher asks the students if they had to write each down as a fraction what would they write.  Teacher explains that these two pieces can not be added because the pieces of pie are not the same size.  Teacher demonstrates how fractions can not be added if they are not of equal size/ value.  Teacher demonstrates that the top number of the fraction is a numerator and the bottom is a denominator.  Teacher plays numerator/denominator guess game on board.  Teacher describes how the denominator has to be equal or the same for student to be able to plus them.  Teacher shows examples with visuals:  3/10 + 2/10 = b. 3/10 + 2/4 = c. 4/5 + 3/5 =  d. 7/20 + 3/20 =  - Students complete addition like fractions worksheet 1  - Students complete find the like fractions worksheet 2  (make worksheet with same and different denominators. Students must complete ones with same denominator and cross out ones they can not add because there are different denominators. Put one ½ + ¼ in to see if students have this understanding yet.)  Lesson 5: adding fractions with different denominators.  Teacher show students visuals of a whole cut into different fractions. Teacher discusses how although the pieces are different they are still saying the same thing. They are all parts of a whole.  Teacher recaps last lessons addition of fractions and points out that If the denominator isn’t the same then one can not add them.  Teacher explains how one must make the denominator the same in order to plus the fractions.  Demonstration of how to change denominator of fractions using visuals.  ¼ + ½ = b. 1/6 + 9/12 = c. 3/9 + 8/15  Teacher gives students times table chart and shows how this helps students find like number between the denominators.  Students worksheet Adding unlike fractions.  Week 6: simplifying fractions.  Lesson 2: Simplifying fractions  Teacher recaps last week and adding fractions.  Teacher recaps how fractions can be big pieces or little pieces. Teacher suggests that it is easier to manage when the fraction is smaller.  Teacher demonstrates how to make a fraction smaller using first three questions from worksheet  Student worksheet: Simplify fractions  Lesson 3: Simplifying fractions.  recap, how do we simplify fractions.  Teacher does questions 1-3 on board  Student worksheet – simplify fractions 2  Lesson 4: Introduction to Improper fractions simplification  What is an improper fraction? What does the word improper usually mean?  What does an improper fraction look like?  Name that fraction heads and tales game.  Teacher demonstrates how to simplify an improper fraction  Student worksheet Improper fractions worksheet.  Week 7: Mixed Fractions and decimals.  Lesson 1:  F:\Mock ups\Square elements\Numeracy.jpgIntroduction to mixed fractions simplification  Teacher recaps last lesson simplifying fractions  What is a mixed fraction?  Teacher recaps what a mixed fraction looks like using visual cues.  Teacher shows students how to simplify fractions using the first three questions from student worksheet: simplify mixed fractions.  Lesson 3: Types of fractions and how fractions, decimals and whole numbers relate.  Teacher is to ask students how many different ways can we signify that we are talking about three things. Students should come up with the following. Three can be written as three, 3 or III as a tally. Teacher shows that a fraction and decimals are representing the same thing but just writing the same information in a different way.  Teacher demonstrates how decimals and fractions are related.  Teacher demonstrates how decimals are also written as 0.1 meaning 0.10  Student worksheet: Decimals and fractions  Lesson 5:  Decimal and fraction match game  Teacher demonstrates - how to convert simple fractions to decimals using first three eamples on student worksheet.  F:\Mock ups\Square elements\Numeracy.jpg  Week 8: Index notation, scientific notation  Lesson 2: Squaring numbers and Index notation  class discussion on what 2 means.  Teacher to demonstrate that 2 means squared. In maths 2 means to times the number by itself twice. Teacher demonstrates that measurements of houses are based around m 2 . there for we are talking about the two sides of measurement of the room. Teacher shows students how to write out 2 in long format e.g 6 2 = 6 x 6 = 36.  Teacher shows visual representation.  Teacher demonstrates that we can also square a negative number. Showing example: When we square a negative number we get a positive result.  Student worksheets; Squared integers.  Lesson 3: Square roots.  Teacher recaps last lesson’s understanding of squaring numbers.  Teacher tells students that square roots is the opposite of squaring numbers. √9 is like writing ? x? = 9. A square root of a number is “a value that can be multiplied by itself to give the original number.” A square root of 9 is “3, because when 3 is multiplied by itself we get 9.”  Student worksheet: √ ( teacher provides students with copy of times table charts if they are finding it difficult to work out answers.  Lesson 4: Square roots and squaring missing numbers; an introduction to algebra.  Introduction to algebra as mathematics with letters. Conversation around using letters to replace? to signify that there is an unknown entity.  Teacher uses up cut up numbers for students to make each other equations. Students must leave one number out of their equation. Other students must solve the question by putting in the appropriate number.  Teacher points out that sometimes in life and maths, it is not always (this + this) = an answer. Sometimes you don’t need to find out how many sticks of gum were in the pack because you might already have that information. In the same regard you don’t need to know how many are left, because you already have that information too. Rather, you are trying to find out how many pieces of gum jimmy ate. In mathematical terms this would appear as: ? + 4 = 12 or 12 - ? = 4. You Here we are trying to solve the missing number on the left side of the equation rather than the conventional right side.  Teacher introduces the notion of a sea-saw and that the left side of the equation must be the same value or equal to the right (that’s why there is an = sign because it means same value as..)  Student worksheet; intro to algebra and algebra square roots. (make algebra square roots worksheet. Page should have questions as follows: √a = 36 and a2= 32.    Week 9: Rate and ratio  Lesson 1: How to find rate  Teacher directed explanation: The ratio is the relationship of two numbers. For example you have 2 flashlights and 5 batteries. To compare the ratio between the flashlights and the batteries we divide the set of flashlights with the set of batteries.  The ratio is 2 to 5 or 2:5 or 2/5. All these describe the ratio in different forms of fractions. The ratio can consequently be expressed as fractions or as a decimal. 2:5 in decimals is 0.4. A rate is a little bit different than the ratio, it is a special ratio. It is a comparison of measurements that have different units, like cents and grams. A unit rate is a rate with a denominator of 1.  Teacher explains how to find ratio  Teacher completes three examples (from student worksheet) on board  Student worksheet: Ratio and relationships.  Lesson 3: ratio  Teacher introduces students to concept of ratio.  Teacher shows students demonstration on board.  Teacher completes two examples from student worksheet  Student worksheet Ratios and me  F:\Mock ups\Square elements\Numeracy.jpg  Week 10: Algebra with integers.  Lesson 1: Algebra and multiplication script.  Teacher recaps simple addition algebra from previous lesson.  Teacher demonstrates that 5M = 10 is the same as  5 x m = 10  teacher demonstrates how to complete this type of algebra by starting with the base number and working backwards. Or replacing the (m) with a (?) for students who find it difficult to visualise the maths around the lettering.  Student worksheet: Algebra multiplication.  Lesson 5: introduction to division in algebra.  teacher recaps division and place value information and recaps square root numbers.  Teacher explains (using first 3 questions of student worksheet) how to do division in algebra.  Student worksheet; Algebra and division.  F:\Mock ups\Square elements\Numeracy.jpgWeek 11: equalities and polynomials  Lesson 1and 2: polynomials  teacher recaps fraction work from the unit. Teacher points out that like fractions had to be added together. Teacher explains the same about letters in algebra. If the letter is the same then you can add, subtract, divide and multiply them.  Teacher demonstrates on board  Teacher demonstrates using first three questions of students worksheets.  Students are to circle the like letters or like terms in the equation using coloured texts.  Students complete worksheet: Polynomials.  Lesson 3: End of unit Assessment  – end of topic maths Assessment on place value, operations, fractions, decimals, scientific notation index laws, one step algebraic equations, equalities and polynomials. | | | | | | | | | | Numeracy  Lesson 2:  - Game 1: Place value columns game. Students race to make the numbers written for them in the correct place value.  - Game 2: students match the written words with the number cut-outs. E.g. – 801 with eight hundred and one.  - Numeracy page 1 & 2  Lesson 3:  - Game1: Addition place value game. Students add and subtract as required by the equation out on the board using their connector blocks.  - Game 2: MAB block place value bingo  - Numeracy page 3 & 4  Lesson 5:  Game: addition place value game.  Numeracy page 5 &6  Lesson 2: No regroup  - Game 1: subtraction triangles  - Game 2: subtraction game booklet  - No regroup subtraction Numeracy book  Lesson 4: Regroup  Game 1: Subtract game regroup 1.  regroup subtraction in numeracy book  mage titled Do Long Multiplication Step 1  mage titled Do Long Multiplication Step 13http://pad2.whstatic.com/images/thumb/e/e3/Do-Long-Multiplication-Step-8-Version-2.jpg/900px-Do-Long-Multiplication-Step-8-Version-2.jpgmage titled Do Long Multiplication Step 5mage titled Do Long Multiplication Step 4mage titled Do Long Multiplication Step 3mage titled Do Long Multiplication Step 2Lesson 3: multiplication drills  - Spider 7 times tables  - multiply three numbers numeracy book.  Lesson 5: division practice  - division pancakes  - division practice numeracy book.  Lesson 2: division scramble.  - apples in a bunch  - Division page numeracy book.  Lesson 2: Writing fractions and seeing how fraction shapes are different.  Game:  Fraction bingo  Fraction colour game in numeracy booklet.  Fraction pancakes each student gets Pancakes with fractions made into them. Teacher demonstrates first.  Lesson 4: Adding mixed fractions.  Teacher demonstrate what a mixed fraction is  Teacher demonstrate how to add  Demonstrate how fractions can be mixed (with big number beside and how to add using these too.)  Fraction bingo  Fraction identifier numeracy booklet.  Lesson 1: fraction pancake game  Maths numeracy booklet  Adding unlike fractions sheet  Lesson 2:  Fraction bingo  Simplifying fractions. Review.  Lesson 5:  Fraction go fish  Simplifying improper fractions. Numeracy booklet  Lesson 2:  Fraction go fish  Simplifying Mixed fractions. Numeracy booklet  Lesson 4:  - Decimal and fraction match game  - Decimals and converting to fractions    Lesson 5: Practice of simple algebra  Numeracy worksheets  POST ASSESSMENT on square roots, decimals and squaring numbers.  Lesson 2:  Rate practice,  Rate blaster game ‘http://www.mathplayground.com/ASB\_RatioBlaster.html  Numeracy booklet rates.  Lesson 4: ratio pairing  Ratio line constructor game  numeracy booklet  Lesson 5:  Make a plan for a house using correct ratio measurement.  Lesson 2: algebra one step equations practice. Numeracy booklet. GATHER INFORMATION. Use these worksheets to gather information around students capability and confidence in preliminary algebra.  Lesson 3: algebra one step equations practice. numeracy booklet.  Lesson 4: algebra one step equations practice. numeracy booklet. | | | | | The Australian General Capabilities  Aboriginal and Torres Strait Islander histories and cultures boriginal and Torres Strait Islander histories and cultures  Asia and Australia's engagement with Asia sia and Australia's engagement with AsiaSustainability ustainability  Critical and creative thinking ritical and creative thinking  Ethical understanding thical understanding  Information and communication technology capability nformation and communication technology capability  Intercultural understanding ntercultural understanding  Literacy iteracy  Numeracy umeracy  Personal and social capability ersonal and socail capability  Civics and citizenship ivics and citizenship  Difference and diversity ifference and diversity  Work and enterprise ork and enterprise | |
| Special Needs Adjustments | | | | | | | | | | | School to Work | | | | | | |
| One-on-one support where required  Short lessons  Engaging topics  Behaviour management strategies  For individualised adjustments, please see personalised learning plans. | | | | | | | | | | | Improved communication skills  Building strength in mental calculations  Developing understanding in converting between mathematical units  Language development  Collaborative learning  Self-manage  Building skills for further development in financial mathematics. | | | | | | |
| Assessments. Type. Weight. Due Date | | | | | | | | | | | | | | | | | |
| Informal assessments 50%  Engagement with discussions and contribution to discussions  Observations  Work samples  Post and pre assessment worksheets  Formal assessment 50%  End of unit mathematics assessment | | | | | | | | | | | | | | | | | |
| Resource List | | | | | | | | | | | | | | | | | |
| All resources are in corresponding lesson and week folders in file | | | | | | | | | | | | | | | | | |

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| Teacher Evaluation  Comments / Variations | |
| **What worked well?**  Place value was an excellent topic to cover first. Students had a real gap in understanding of place value above 100. This translated well when moving to decimals and understanding what the decimal place value means in terms of place value.  Students also had disjointed knowledge about long addition, subtraction, multiplication and division. Lesson focusing on this worked well and were effective with students.  Students engaged well with long addition and multiplication.  Students enjoyed the pancake fractions lesson, this proved effective in engagement and buy in to the concept of fractions. It is creating real world scenarios to link with student’s world.    **What needed to be changed?**  More time could be spent on algebra. Place value and decimal places was important for students but possibly fitting decimal place value into another unit would be effective in allowing a further week for student’s development on algebra. Students had less knowledge in algebra then anticipated.    **What do I think the students gained from this lesson?**  Students gained a much bugger understanding of long multiplication, division, subtraction and addition. Students were mostly unpractised and low efficacy in this topic area.  Students understanding of place value was very much improved through the unit.  Most students improved in their numeracy understanding and placement along the numeracy continuum.    How well did this unit match the Elements of Learning and Achievement?  The unit improved student’s numeracy skills and matched the elements of learning and achievement in this unit.  Students gained work readiness skills by improving on their addition and subtraction skills in the case of money handing work.    **What did I learn?**  Algebra has a large negative stigma amongst the students. This needs to be addressed in a creative way prior to the commencement of the unit to ensure that students are getting the most from the unit. Finding a practical task to link to algebra would help with student’s efficacy towards the unit and therefore student progression throughout the unit.    **How will I use this experience to extend my practice in the future?**  I will consider practical applications and activities to all areas of maths before and during the unit. Student’s need higher motivation and efficacy to complete tasks and engage in the unit holistically. | |
| **Date Commenced**: Term 1, 2016 | **Date Finished**: Term 1, 2016 |
| **Teachers Signature**: | **Assistant Principals Signature**: Kate |