| Big Ideas/ Topic focus | Strand/ Sub Strand | Achievement Standard | Content Descriptor(s) | Student Prior Knowledge | Suggested Teaching \& Learning Experiences | Assessment Focus/ Task | Time Frame | Resources | Links to other learning areas |
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| -It is important to work flexibly and efficiently with a range of numbers and explore generalisations (e.g. for 7 sixes - "I know that 5 sixes are 30 and 2 sixes are 12 , therefore 7 sixes is $42^{\prime \prime}$ ) <br> -Each operation has its appropriate use in solving a range of problems involving multiplication or division <br> -Solutions to problems can be found and communicated in a variety of ways (e.g. using words, diagrams, tables, symbols, explanations) | Strand: <br>  <br> Algebra <br> Sub-strand: <br> Place <br> Value | By the end of Year 5 students solve simple problems involving the four operations using a range of strategies <br> Students check the reasonableness of answers using estimation and rounding | Solve problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental, written strategies and appropriate digital technologies <br> Solve problems involving division by a one digit number, including those that result in a remainder <br> Use efficient mental and written strategies and apply appropriate digital technologies to solve problems <br> Use estimation and rounding to check the reasonableness of answers to calculations | - Place value to the millions <br> - Decimal place value <br> - Comparing, ordering, sequencing, renaming numbers <br> - Efficient strategies for problem solving using the four operations <br> - Recall of basic number facts <br> - Exploring multiplication patterns and number facts using basic arrays | - Mental routines using a 100 s chart to develop fluency and automaticity for the recall of number facts for single-digit numbers; also use speed drills, personal bests for students who are more competent, use this time to assist other students \& provide intervention <br> - Explore multiplication \& number patterns using a 100 s chart <br> - Explore arrays and regions, including generalisations (e.g. "4 threes are 12 , I know that 2 threes are 6 and double 6 is $12^{\prime \prime}$ ) <br> - Record multiple ways of making arrays for different numbers (e.g. 24, $32,48)$ and explore fact family relationships \& commutativity using arrays (e.g. 4 threes are 12, 3 fours are 12, 12 divided by 3 is 4, 12 divided by 4 is 3 ); Identify arrays in the real world (e.g. Channel nine symbol, carton of eggs, muffin tin, computer icons) <br> - Arrays and regions games, such as Multiplication Toss (George Booker, Professor Dianne Siemon) <br> - Problem solving involving the four operations and including making equal groups and fair share situations (e.g. money, Iollies) <br> - Including students creating their own problematised situations <br> - Use thinkboards/ whiteboards for recording simple multiplication and division problematised situations (e.g. At the nature reserve I saw some emus and wombats. I counted 80 legs. How many emus and wombats might I have seen?) (Ann \& Johnny Baker, Natural Maths) <br> - Explore efficient strategies for computation with 2 \& 3 digit numbers through strategies such as chunking, open number lines, partial algorithms, balance \& compensate, round \& adjust, landmark numbers (Natural Maths -Middle Years Mental Computation) <br> - Find the missing number - such as: "When a number is added to 25 the answer is 57 , what might the number be? What strategies did you use? (e.g. identifying balance \& compensate or round \& adjust) <br> - Use 'I have, who has' cards for the four operations | Diagnostic Assessment Big Ideas in Number Test Multiplicative Thinking (Professor Dianne Siemon) <br> Formative Assessment <br> Natural Maths Problem <br> Solving Book 4; Natural Maths Strategies Book 3 <br> Doug Clarke - 'Rich Assessment Tasks' (e.g. Cubes \& Hoops, Booze <br> Buses* - * can be easily adapted for more suitable title) <br> Maths300 tasks (Education Services, Victoria) <br> Summative Assessment <br> Tasks (Western Adelaide Region) <br> -5.1: Animal Parade | Term 1 <br> (6 weeks) <br> Ongoing throughout the year | - Counterssingle coloured <br> - Number cards 0-9 <br> - 0-6, 0-9, 1-10 dice <br> - Flashcards number cards, simple addition \& subtraction, arrays <br> - Subitising cards - 2 and 3 collections (Professor Di. Siemon) <br> - 1-100, 0-99 number charts <br> - Mixed counting games <br> - Thinkboards <br> - Mental routine boards <br> - Number stories <br> - Natural Maths Computation strategies posters | - Literacy creating narrated problematised situations; maths glossary of terms <br> - P.Ecounting games, making groups |
| -Numbers have special properties that can be used to solve problems (e.g. factor, multiple, prime) | Strand: <br>  <br> Algebra <br> Sub-strand: <br> Place <br> Value | By the end of Year 5, students identify and describe factors and multiples | Identify and describe factors and multiples of whole numbers and use them to solve problems | - Exploring multiplication patterns and number facts using basic arrays <br> - Making equal groups and fair shares <br> - Problem solving situations | - Use a 100s chart to explore patterns and find common multiples <br> - Develop the vocabulary and exploring number concepts, including number properties (e.g. multiples, factor, lowest common multiple, highest common factor, lowest common (prime) factor, composite number) <br> - Explore commutativity using arrays and regions (concrete materials) <br> - Explore, create and deconstruct factor trees to identify multiples and factors. Use arrays models and fact families to assist students. <br> - Problematised situations involving multiplication and division (Natural Maths) <br> - Use calculators to assist with problem solving and division of numbers when making factor trees <br> - Arrays and regions games, such as Multiplication Toss (George Booker, Professor Dianne Siemon) <br> - Explore factors and multiples as a mental routine (Natural Maths) | Formative Assessment Natural Maths Problem Solving Book 3 \& 4; Natural Maths Strategies Book 3 <br> Summative Assessment Tasks (Western Adelaide Region) <br> -5.2: Factor Trees; Magic Number | Term 1 <br> (2 weeks) <br> Ongoing throughout the year | - Counters <br> - 1-100 number charts <br> - Thinkboards/ whiteboards <br> - Mental routine board | - Literacy creating narrated problematised situations; maths glossary of terms <br> - P.E counting games, making groups |

What were the students able to do and show? What are the areas needing further development? What misconceptions did students have? Have these been adequately addressed? What are the next big ideas? What are the learning goals of my students? What assessment strategies will show me what students know?

