Booragul Public School NSW Syllabus for the Australian Curriculum- Number and Algebra

Multiplication and Division 1			
Outcome	**Teaching and Learning Activities**	**Notes/ Future Directions/Evaluation**	**Language / Date**
Students: › describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols **MA1-1WM** › uses a range of mental strategies and concrete materials for multiplication and division **MA1-6NA** Syllabus pages: 77-78			group, **number of groups, number in each group, sharing, shared between, left over, total,** equal.
Activities: Teacher plays music. Students are allowed to walk around and when the music stops the teacher holds a number card up and children have to make groups of that number. Then together the teacher and students complete the sentence on the board, "____ groups of ____ Make ___". Remainders sit out but can come back to the game by helping create the sentence on the board			
Hundreds Chart – starting at a given number, counting forwards and backwards by 1s, 2s, 5s, 10s on and off decade Counters - make sets of 2s, 5s, 10s - point and count Buzz - count by 2s, 5s, 10s Students sit down when out. Starting at a given number			

Eg. 2 4 6 8 buzz
    5 10 15 buzz etc
    1 2 3 4 buzz 6 7 8 9 buzz
(multiples of 5)		

Skip Counting in a Circle Students at this Stage need to practise skip counting by twos, fives and tens. Students sit in a circle and skip count around the circle in a variety of ways. For example, students could skip count by: ▌ twos by putting both arms into the circle as each student says their number in the sequence (2, 4, 6, …) ▌ fives by holding up one hand and wiggling their fingers as each student says their number in the sequence (5, 10, 15, …) ▌ tens by holding up both hands and wiggling all fingers as each student says their number in the sequence (10, 20, 30, …).		**Sample Units of Work pg 48**
Rabbits' Ears **We Are Learning To… (WALT)*** *use doubles and near doubles to add numbers.* Explain/demonstrate/model Rabbits' ears for doubling. Explain/ demonstrate/model Rabbits' ears plus 1. Show number sentences on the board such as 4+5=___ and show students how they can use their doubling knowledge to help solve near doubles.		
Pairs of Hands Sit the children in a circle. Tell them that they're going to do some counting in twos with their hands. Start them off, by putting your hands in the air one at a time and saying 'one' silently and 'two' loudly. Continue round the circle. When all hands are in the air ask how many pairs there are. Repeat for different numbers of children. Questions Which numbers do we say silently? Loudly? What do you know about these numbers? How many pairs of hands will be up when we get to the number 12? How did you work it out? Do you need to count every hand/ What's a quicker way? If 7 pairs of hands are in the air how many hands is that? If there are 21 hands in the air, how many pairs can we make? Three pairs is six hands, if we doubled this number of hands, how many pairs would		

we have? How did you work it out? Variations Repeat using feet and count back in twos as well as forwards. Use hands and feet to introduce multiples of four		
Making Groups to Count In small groups, students are given a large collection of interlocking cubes. They are asked to estimate and then count the cubes. Students share their methods for counting the cubes and discuss more efficient strategies for counting. The teacher may need to suggest to the students that they connect the cubes in groups and skip count to determine the total. Possible questions include: ❚ how did you estimate the total number of cubes? ❚ how did you count the cubes? ❚ did you change your original estimate after counting to 10? ❚ can you group the cubes to help you count them quickly?		**Sample Units of sWork pg 48**
People Markers Prepare ten, ten-frame cards, each displaying the number of dots for the multiple to be practised. For example, each ten-frame has three dots. Distribute the ten-frame cards to the students. Ask a student to call out a number in the range 1–10. Select a corresponding number of students to bring their ten-frame cards to the front of the class. Have the class find the total number of dots by firstly using rhythmic counting and then repeat using skip counting. Record the number pattern on the board when all ten, ten-frames are used.		**Developing Efficient Numeracy Strategies 2 pg 94-95 Tens Frames Cards**
Car Parks This activity can be used to model division as sharing and division as grouping. In a group of five, each student is given a piece of paper to represent a car park. The teacher poses the following questions: Sharing: How many cars will be in each car park if twenty toy cars are to be shared among the five car parks (ie the five pieces of paper)? Possible questions include: ❚ how many cars are there to be shared? ❚ how many cars are in each car park? The teacher models recording the activity. eg 20 shared between 5 is 4, or 20 ÷ 5 = 4. Grouping: How many car parks will be required for 10 cars if there are only to be 2 cars in each car park?		**Sample Units of Work pg 49 paper**

The teacher models recording the activity. eg 10 – 2 – 2 – 2 – 2 =0, or 10 ÷ 2= 5		
Follow Me Game –Doubles and halves Deal out one card for each child. First child starts off with "Who is double 12? Children all look at the top of their card and the child with the correct answer says it out loud 'I am 24' and asks the next question which is on the bottom of their card 'Who is double 8?'Game continues until all cards have been answered. Print off the cards for free at following website: http://www.primaryresources. co.uk/maths/doubles2.htm		
Doubles Bingo Students are given a blank 2 × 3 grid and six counters. Students are asked to record a number in each square that is 'double any number' on a standard die Eg | 12	2	8 | | 6 | 2 | 6 | The teacher rolls the die and states the number shown. Students 'double the number' on the die and place a counter on the corresponding answer on their grid. The teacher continues to roll the die until one student has covered all numbers on their grid. Variation: Students are asked to record numbers in each square that are 'double plus one' or 'double take away one'. A die marked with numbers other than 1 to 6 could be used.		
Dotty Doubles Hold up a series of flash cards with dots (from 4 to 20) arranged in doubles or doubles plus one. Give the children 3 seconds to look at the card and then ask them how many dots there were. Share and discuss how they see the dots and model the children's explanations on the board Eg 'i know it's 13 because I saw double 6 and 1 more'		

Questions How can you work out the totals without counting all the dots? Which patterns do you see vertically? Horizontally? Which double facts do you know off by heart? How? How does knowing your double facts help you work out other numbers? Are there other ways the dots could be arranged to make the numbers easier to see? Eleven is double 5 and add 1. What other double is near to it and how would you see it? Variations Use to focus on odd and even numbers. Encourage the children to arrange numbers on peg boards and to visualise larger numbers in dot form. Investigate arranging in two rows, three rows etc and look for number patterns		
Pegging Clothes In groups of six, each student is given four pegs to attach to the edge of their clothing. Students are asked to count the total number of pegs in their group. They are encouraged to do this by counting each peg quietly and counting the last peg on each piece of clothing aloud. Students are then asked to record the numbers spoken aloud. Variation: The number of students in the group or the number of pegs to be attached to each piece of clothing could be varied.		
Popsticks in Cups In pairs, students place five cups on a table and put an equal number of popsticks in each cup. Possible questions include: ❚ how many cups are there? ❚ how many popsticks are in each cup? ❚ how many popsticks did you use altogether? How did you work it out? ❚ can you estimate the answer to the multiplication or division problem? ❚ is it reasonable? ❚ how can you check your estimation? Students share and discuss their strategies for determining the total number of popsticks eg students may use rhythmic or skip counting strategies. Students are asked to record their strategies using drawings, numerals, symbols and/or words. The teacher will need to model some methods of recording to		Sample Units of Work pg 51

students. *Variation:* Students are given a different number of cups and repeat the activity. (Adapted from CMIT) – Popsticks in cups example 		
Whisper and Skip Counting T.W.W.L.T… * use whisper and skip counting to add up objects. Divide the students into groups of four and make four work station; 1. Beads- whisper counting Make a 2 colour bead pattern and use your pattern to whisper count and record the total 2. Five cent coins- skip counting Skip count to add five cent coins together 3. Unifix blocks- whisper counting Make a 5 colour block pattern and use your pattern to whisper count and record the total 4. Two dollar coins – skip counting Skip count to add two dollar coins together Show student how at each table they use the objects to complete their worksheet (model a work sheet as you explain each activity). Use a point system to encourage good behaviour and on task work. • T.W.W.L.T… * make groups and arrays. Put students in groups of 3. Give students approximately 30 counters per group. Ask students to make particular groups divisible by 2 and 5 e.g. "3 groups of 5". Students then put up their hand to give their total and show their groups. Demonstrate how to record groups on the board e.g. 3 x 5 =15 therefore introducing the multiplication symbol (only briefly as		**Coloured beads and strings** **Bags of fake 5 cent coins (5-12) in each bag)** **Unifix blocks** **Bags of fake \$2 coins (5-12) in each bag)** • **Worksheet Whisper and Skip Counting**

this will be explicitly taught in T2 U5). Provide students opportunities to make both groups and arrays. • T.W.W.L.T… * discover what equal groups can be made from certain numbers. Put students in groups of 3. Give students approximately 30 counters per group. Choose a particular number e.g. 10. Ask students what equal groups they can make with that number. Demonstrate how to record groups on the board e.g. 10 ÷ 2 = 5 therefore introducing the division symbol		
Multiplication Monsters Draw a large double headed, three fingered, five toed, triple footed monster on the board or use the one provided. Ask the children how the monster is different to us and to work out how many eyes, fingers, toes,etc it has. Ask if two monsters arrived how we could work out the total number of eyes, fingers, etc. Draw a chart and give the children copies. Ask them to record the totals for the monsters and to look for patterns:- 	Mon sters	Head s	Eyes	Hands	Fingers	Feet	Toes
---	---	---	---	---	---	---
1	2					
2						| **Questions** What patterns can you see? How can you use doubling to help work out the totals?		
Counter Grab: Multiplication Provide students with a small container of counters and a copy of Counter Grab BLM(pg 158 of DENS 2). Instruct the students to take turns to grab a handful of counters, or other suitable material, and place them on the floor or table. Have the students firstly estimate how many counters there are and then organise the counters into groups of a nominated number, for example, groups of three. Encourage the students to determine the total by using rhythmic or skip counting, Discuss what happens when there are counters left over. On the worksheet, students record their estimate, the number of groups, the number of counters in each group,		**Developing Efficient Numeracy Strategies 2 pg 96-97 Counters BLM of Counter Grab pg 158 of**

any remainders and the total. Model stress and skip counting to find the total. Variation Have the students make different equal groups from the one handful of counters and record the combinations.		**DENS 2**