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

Whole Number

Outcomes		Language
Early Stage 1		count forwards, count backwards, number before, number after, more than, less than, zero, ones, groups of ten, tens, is the same as, coins, notes, cents, dollars.
› describes mathematical situations using everyday language, actions, materials and informal recordings MAe-1WM Communicating		
› uses objects, actions, technology and/or trial and error to explore mathematical problems MAe-2WM Problem-Solving		
› uses concrete materials and/or pictorial representations to support conclusions MAe-3WM Reasoning		
› counts to 30, and orders, reads and represents numbers in the range 0 to 20 MAe-4NA p45-47		
• read and use the ordinal names to at least 'tenth'		
• use the language of money in everyday contexts, eg coins, notes, cents, dollars		
• recognise that there are different coins and notes in our monetary system		

NUMERACY CONTINUUM Forward number word sequence	• Cannot count to 10.	• Counts to 10. • Cannot say the number word just after a given number word in the range 1-10. • Dropping back to one does not appear at this level.	• Counts to 10. • Says the number word after a given number word but drops back to one when doing so.	• Counts to 10. • Says the number word just after a given number word in the range 1-10 without dropping back.	• Counts to 30. • Says the number word just after a given number word in the range 1-30 without dropping back.	• Counts to 100. • Says the number word just after a given number word in the range 1-100 without dropping back.

NUMERACY CONTINUUM Backward number word sequence	• Cannot count backwards from 10-1.	• Counts backwards from 10-1. • Cannot say the number word just before a given number word in the range 1-10. • Dropping back to one does not appear at this level.	• Counts backwards from 10-1. • Says the number word just before a given number word in the range 1-10, but drops back to one when doing so.	• Counts backwards from 10-1. • Says the number word just before a given number word in the range 1-10 without dropping back.	• Counts backwards from 30-1. • Says the number word just before a given number word in the range 1-30 without dropping back.	• Counts backwards from 100-1. • Says the number word just before a given number word in the range 1-100 without dropping back.
NUMERACY CONTINUUM Numeral identification *The term 'identify' refers to stating the name of a displayed numeral.*	• May identify some, but not all numerals in the range 1-10.		• Identifies all numerals in the range 1-10.		• Identifies all numerals in the range 1-20.	• Identifies numerals in the range 1-100.

| SYLLABUS: pp 45-47

In Early Stage 1, students are expected to be able to count to 30. Many classes have between 20 and 30 students, and counting the number of students is a common activity.

Students will also encounter numbers up to 31 in calendars. Counting is an important component of number and the early learning of operations. There is a distinction between counting by rote and counting with understanding. Regularly counting forwards and backwards from a given number will familiarise students with the sequence.

Counting with understanding involves counting with one-to-one correspondence, recognising that the last number name represents the total number in the collection, and developing a sense of the size of | **ELP – FNWS**
Syllabus, NES1.1
Sample units of work, pp. 13-15
Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 22-31
Feather drop, (DENS 1), pp. 22-23
Handful of teddies, (DENS 1), p. 24
Coat hangers, (DENS 1), p. 28
Learning object - Penguin count
Learning object - Number grid
Learning object - Washing line | **ELP – FNWS**
Syllabus, NES1.1
Sample Units of Work, pp. 13-15
Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 22-31
Musical cushions,(DENS 1), p. 31
Physical activities, (DENS 1), p. 30
Learning object - Penguin count
Learning object - Number grid
Learning object - Washing line
SMART notebook - Number before, number after | **ELP – FNWS**
Syllabus, NES1.1
Sample Units of Work, pp. 13-15
Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 78-81
Zap, (DENS 1), pp. 78-79
Learning object - Penguin count
Learning object - Number grid
Learning object - Washing line
SMART notebook – Forward number word sequences | **ELP – FNWS**
Syllabus, NES1.1
Sample Units of Work, pp. 13-15
Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 78-81
Maths tipping, (DENS 1), pp. 80-81
Learning object - Penguin count
Learning object - Number grid
Learning object - Washing line
SMART notebook - Number before, number after | **ELP – FNWS**
Syllabus, NS1.1
Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 148-157
Bucket count on, (DENS 1), pp. 156-157
Collections, (DENS 1), pp. 148-149
Learning object - Penguin count
Learning object - Number grid
Learning object - Hundred chart windows
SMART notebook - Number before, number after | **ELP – FNWS**
Syllabus, NS1.1
Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 220-231
Celebrity head, (DENS 1), pp. 220- 221
Guess my number, (DENS 1), pp. 222-223
Learning object - Number grid
SMART notebook - Number before, number after |
|---|---|---|---|---|---|---|
| | **ELP – BNWS**
Syllabus, NES1.1
Sample units of work, pp. 12-15
Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 22-49
Fences, (DENS 1), p.36
Hang it on the line, (DENS 1), p. 37
Learning object - Penguin count | **ELP – BNWS**
Syllabus, NES1.1
Sample Units of Work, pp. 12-15
Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 22-49
Sandwich boards, (DENS 1), p. 37
Guess the number, (DENS 1), p. 37
Learning object - Penguin count | **ELP – BNWS**
Syllabus, NES1.1
Sample Units of Work, pp. 12-15
Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 22-49
The price is right, (DENS 1), pp. 37
Numeral flip strip, (DENS 1), pp. 39
Learning object - | **ELP – BNWS**
Syllabus, NES1.1
Sample Units of Work, pp. 12-15
Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 78-133
Maths tipping, (DENS 1), pp. 81
Before and after, (DENS 1), pp. 87
Bingo: The number after, (DENS | **ELP – BNWS**
Syllabus, NS1.1
Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 148-157
Bucket count on, (DENS 1), pp. 156-157
Hundred chart, (DENS 1), pp. 160- 161
Learning object - Penguin count
Learning object - Number grid | **ELP – BNWS**
Syllabus, NS1.1 - Unit 1 (two-digit numbers)
Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 220-277
Celebrity head, (DENS 1), pp. 220- 221
Price is right, (DENS 1), pp. 222- 223
Learning object - Number grid
SMART notebook - |

numbers, their order and their relationships. Representing numbers in a variety of ways is essential for developing number sense. Subitising involves immediately recognising the number of objects in a small collection without having to count the objects. The word 'subitise' is derived from Latin and means 'to arrive suddenly'. In Early Stage 1, forming groups of objects that have the same number of elements helps to develop the concept of equality.	Learning object - Number grid Learning object - Washing line	Learning object - Number grid Learning object - Washing line SMART notebook - Number before, number after	Penguin count Learning object - Number grid Learning object - Washing line SMART notebook – Forward number word sequences	1), pp. 99 Learning object - Penguin count Learning object - Number grid Learning object - Washing line SMART notebook – Forward number word sequences	Learning object - Hundred chart windows SMART notebook - Number before, number after	Number before, number after
	ELP – Numeral Recognition (Emergent) Syllabus, NES1.1 Sample Units of Work, pp. 13-15 Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 32-72 Hang it on the line, (DENS 1), pp. 37 Learning object - Penguin count Learning object - Number grid Learning object - Washing line		**ELP – Numeral Recognition 1-10** Syllabus, NES1.1 Sample Units of Work, pp. 13-15 Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 82-115 Teen bingo, Before and after: (DENS 1), pp. 86-87 Learning object - Penguin count Learning object - Number grid Learning object - Washing line		**ELP – Numeral Recognition 1-20** Syllabus, NES1.1 Sample Units of Work, pp. 13-15 Developing Efficient Numeracy Strategies Stage 1 (DENS 1), pp. 116-133 pp. 154-203 Hundred chart, (DENS 1), pp. 160- 161 Learning object - Penguin count Learning object - Number grid Learning object - Washing line	**ELP – Numeral Recognition 1-30** Syllabus: NES1.1, NS1.1 Developing Efficient Numeracy Strategies Stage 1 (DENS 1): pp. 154-203 pp. 220-231 The price is right, (DENS 1): pp. 222-223 Learning object - Penguin count Learning object - Number grid

Teaching and Learning Activities	Notes/ Future Directions/Evaluation	Date/LAC icons
Explicit teaching of Whole Number Students will need daily opportunities to establish their understanding of the language and process of counting by naming numbers in sequences, initially to and from 20, moving from any starting point. Daily counting will ensure students can; • Count forwards to 30 from a given number • Count backwards from a given number in the range 0-20		

- Identify the number before and after a given number using the language 'one more than' or 'one less than'
- Read and use ordinal numbers to at least 10th

Students will need daily opportunities to connect number names, numerals and quantities, including zero, initially up to 10 and then beyond. Teachers will need to provide feedback to students daily to correct any anomalies.

Teachers will need to provide multiple opportunities for students to estimate the number of objects in a group of up to 20 objects, and count to check.
Students will need to be explicitly taught how to use 5 as a reference in forming numbers from 6 to 10 eg, six is one more than 5. They will then need to be explicitly taught how to use 10 as a reference in forming numbers from 11 to 20.
Teachers will explain why it is important to subitise small collections of objects or dots instantly (otherwise it takes a long time to work out how many!) Ask students to think of times when its important to 'just know' how many.

Students will need to compare, order and make correspondences between collections, initially to 20 and explain reasoning. Students will be shown how to;
- Count with one to one correspondence. Students will need to recognise that the last number name represents the total number in the collection when counting
- Make comparisons between collections "I have four counters, you have seven counters. You have more than me"
- Compare and order numbers and groups of objects by applying counting strategies to solve simple everyday problems and justify answers
- Use the term 'is the same as' to express equality of groups.

Teachers will need to explicitly teach the language of money. Discuss cents and dollars, coins and notes. Students may be able to recognise that there are different notes and coins in our monetary system.

Work and enterprise
Literacy
Information and communication technology capability
Critical and creative thinking

EMERGENT Activities		
Beehive Construct base boards displaying beehives with numerals written on them (see DENS pp.64,65). Create a supply of cut-out bees. Students state the numeral written on the hive and collect the correct corresponding number of bees. They then attach the bees to the hive, using paperclips or fold back clips. Other students in the group should count the bees to confirm that the number of bees matches the numeral on the hive.		
Candle Holders Place candle holders upright in six containers. Each container should hold a different number of candle holders within the range of one to six. Students take turns to roll a standard die. After counting the dots on the uppermost face, students count out a corresponding number of candles. Students then find a container with the same number of candle holders and place the correct number of candles in the candle holders. Students continue until candles have been placed in all the holders.		
Coat Hangers Provide each student with a coat hanger and twenty clothes pegs. The students put the twenty pegs on the hanger counting as they put them on. They then take turns to roll a die displaying dot patterns and take off the corresponding number of pegs from the coat hanger. They continue until all twenty pegs have been removed from the hanger. The exact number needed to form zero must be rolled to finish.		
Counting into Cups In small groups, students are given containers such as paper cups, each labelled with a number 0 to 10 then later 0-20. Students are asked to identify the number on the cup and count the corresponding number of paddle pop sticks in the cup, and place them in order.		

Colourful clowns Construct base boards with an outline of a clown wearing oversized trousers (see DENS p.72). Ten circles are drawn on the trousers. Students roll a die and collect a corresponding number of counters. The counters should all be of the same colour. Instruct the students to place the counters onto the circles on the clown's trousers. On the next roll the student repeats the process, using counters of a different colour. The process continues until all circles are covered. To finish, students must roll the exact number needed to cover all the circles. When all circles are covered, students make statements about their clown's trousers. For example, "My clown has three red circles, five green circles and two yellow circles on his trousers."		
Concentration Make two sets of cards containing the numbers one to five. One set of cards should display dot patterns for each numeral and the other set display the numerals. Place the two sets of cards face down on a table forming two rows. Students take turns to turn over two cards. If the cards match, that is a dot pattern and a numeral card for the same number, the student keeps the pair. If the cards do not match, the student turns the cards back over. The game continues until all cards have been matched. It is easier if the dot cards are on cardboard of a different colour from the numeral cards.		
Count and Classify Construct numeral base cards and collections of objects for each number indicated on the numeral card. For example, for the numeral cards one to five collect one toy boat, two plastic cars, three rocks, four lids and five buttons. Students classify the objects. Ask the students to match the correct numeral card to the set.		
Counting Patterns Lead the students in oral counting to ten. Coordinate body actions, such as clapping, clicking or stamping, with each number as it is counted. Alternatively, instruct the students to perform various body actions on alternate numbers, for example touching their shoulders on odd numbers and clapping on even numbers. Vary the activity to using voice patterns, such as counting softly on odd numbers and loudly on even numbers.		

Egg Carton Drop This activity is similar to Feather drop. For this activity replace the feathers with counters and ask students to drop them into an egg carton, matching one counter to each cup. Cut the egg carton into parts, one part containing three cups, one containing four cups and one with five cups. These activities are used to develop one-to-one correspondence. As this skill develops, introduce the sequence of number words when completing the activity.		
Egg Carton Shake Egg cartons with the numerals pasted on the bottom,1-12.Children choose a number and place a counter in the egg carton. Close the carton and shake it see if the counter lands on your magic number.		
Egg Game Provide each student with a base board (see DENS pp.58 and 59) displaying an outline of an egg. Cut a second egg outline into pieces to create a jigsaw. The first student rolls a die with a standard dot pattern and selects a piece of the "egg" jigsaw displaying a corresponding dot pattern. This piece is placed on top of the game board. Continue the game until all children have completed their egg.		
Fences Construct sets of fence base boards using DENS p.56 and paddle pop sticks displaying numerals in the range 1 to 10, 10-20 and 20-30 for each student or pair of students. Students match the numerals on the paddle pop sticks with the numerals written on the base boards. Extend this activity by constructing base boards displaying blank fences. The students sequence the numbered paddle pop sticks along the fence.		
Flowers in the vase Label small plastic orange-juice containers with numerals. Ask the students to place a corresponding number of plastic flowers into each vase. Students should count the flowers in each vase to verify the count.		

Grab The Puppet Race Children have 10 numeral sticks in a bundle (mixed up) eg 1-10, 10-20,20-30.One person says "Go" and children race to be the first child to order their numbers either forwards or backwards correctly and grab the puppet. Other children check to see if the winner has the correct sequence.		
Hidden Treasure Collect boxes to represent treasure chests and label them with numerals. Randomly place the "treasure chests" on the floor. Ask students to close their eyes while a "secret treasure" is hidden under one of the boxes. Students ask questions to determine which "chest" contains the treasure. For example, "Is the treasure under chest number four?" As a student nominates a chest, another student locates the chest displaying the nominated numeral and looks to see if the secret treasure is under the box		
I Feel This activity is designed for a pair of students. Instruct one partner to sit opposite a row of numeral cards. The other student stands behind the partner and taps him or her on the shoulder a certain number of times. The student who is sitting counts the number of taps and picks up the numeral card which corresponds to the number of taps.		
King of the Circle – Number After Ask the student to sit in a circle. Select one student to stand behind a second student in the circle. Roll one large dice in the middle of the circle. Ask the two students to call out the number that comes after/before the number rolled. The first student to call out the number successfully moves on to stand behind the next student in the circle. Repeat the activity for all students. *Variation* – number before.		
King or Queen For a Day Construct a crown for a student who will be the class Queen or King. Attach a numeral card to the crown. Other students present a collection of items to the Queen or King, corresponding to the numeral card.		

Load the Trucks The same instructions apply as those used with Robot race. The truck base board is used instead of the robot base board (see DENS pp.70 and 71.)		
Lily Pads Use numeral cards lined up in order to create lily pads. The students act as frogs and jump forwards and backwards as the teacher or a child calls out the progression. Could also jump on specific numbers, sequences of numbers, or the number just after or just before a given number as the teacher calls each number.		
Look and snap Place numeral cards in front of the group of students about to play this game. Briefly flash a dot pattern card to the students in the group. The aim of the game is for the students to recognise the dot pattern, say the number of dots they see and locate the corresponding numeral card. Students "snap" the correct card by quickly placing their hand on the card. The first student to snap the correct card keeps it. The student with the most cards at the end of the game wins.		
Make a zoo Construct clear plastic containers, such as strawberry punnets, displaying numerals in the range one to five and collections of zoo animals for each number indicated on the containers. For example, one elephant, two camels, three tigers, four zebras and five monkeys. Direct students to sort the animals and place each group into a plastic container, ensuring that the number of animals matches the numeral card on the container.		
Mothers and Babies Duplicate and cut out cards displaying a set of bear cubs in the range one to ten (see DENS 1 BLM pp.62,63). Construct a second set of mother bear cards displaying numerals in the range 1-10. Students select a "cub card", count the cubs and match the card to a corresponding mother bear card. Students continue until all cards have been matched.		

Number Lines: Students write a numeral in a given range on a small square of paper. The teacher selects a student randomly to peg their number on a string hung across the room. Students discuss the placement. A second student is selected to peg their number on the string considering its placement in relation to the first number. This is repeated for all students, discussing where each number would go, before placement. Use five as a reference for numbers between 5 and 10. Questioning How do you know where the numbers go? What number comes before/after number 6? What numbers go between 5 and 7? Where do you think number 4 will go?		
Numeral Chairs Attach numeral cards to the seats of chairs. Give each student in the group a card illustrating a group of objects. Students count the objects and, on a given signal, sit on the chair displaying a corresponding numeral card.		
Numeral Recognition Students sit in a circle. A nominated student draws a numeral on another student's back. The second student must recognise this and draw it on the back of the next child and so on. The last student must write the numeral on the board.		
Object Hunt Construct picture cards showing different objects found in the classroom. The teacher should display the picture card and direct nominated students to move from the point where they are standing in the classroom to the actual object. The class counts the number of steps it takes the student to reach the object.		
Paperclip Cards Ask students to slide the correct number of paperclips onto numeral cards. Place the numeral cards in either a forward or backward counting sequence. Vary this activity by asking students to form a chain of safety pins and attach it to the fabric strip with the corresponding numeral. This activity will need to be completed under teacher supervision and attention paid to safety aspects.		

Paper Cup Drop Place a row of paper cups on the floor or on a table. Encourage the students to count the empty cups. Ask the students to drop one counter into each cup and to count the counters as they are dropped into the cups. Direct the students to empty the counters from the cups and count the group of counters. You may extend the activity by asking students to match numeral cards with the total number of counters.		
Pass The Basket Put a pile of acorns/pine cones/blocks/counters/animals etc in the middle of the circle. Pass a basket around the circle and each child in turn adds one to the basket. Everybody counts together as another item is added to the basket. Stop at a suitable number and start to take the items out of the basket one by one, counting down as it happens. Suggested Questions: • How many are in the basket now? • How many will there be when Tracey has added one? • How many have we put in altogether? • How many will we have to take out to make the basket empty? • How many do you think it would take to fill the basket?		
Patty Papers Present a collection of patty papers to the students. Write a numeral in the range one to ten on the inside of each patty paper. Instruct the students to place the correct number of items, such as counters, shells, beans or rocks, into each patty paper according to the numeral that is written on the bottom.		
Peg Boards Construct ten frames from cardboard and punch a hole in the centre of each square large enough for golf tees to pass through without the head of the tee falling through the hole. Provide ten golf tees with each ten frame for the student. Students select a numeral card and place a corresponding number of tees into the ten frame. *Variation* - Students roll a die, collect the correct number of tees and place them into the ten frame. Attach numeral tags to the end of each ten frame card. Students read the numeral tag, then place the correct number of tees into the ten frame		

Pendulum Swing Construct a pendulum from plasticine and string. The teacher, or a nominated student, holds the pendulum, and the class joins in counting each swing. *Variation* - A metronome, if available, could be used to count along with each beat		
Physical Activities Ask individual students to complete such actions as skipping with a rope, bouncing a ball, star jumps or hopping, while the rest of the class counts each action in unison		
Pick Up Chips Construct a deck of dot pattern cards for numbers one to six with four of each pattern. Distribute five counters to each player and place 100 counters in a central pile. Shuffle the cards and place them face down in the centre of the table. Students take turns to take a card from the pile and pick up a corresponding number of counters from the central pile to add to their collection. That is, a student who draws a "three card" collects three counters from the central pile. The activity continues until all cards have been drawn. The student with the most counters wins. Vary the game by adding "magic numbers". For example, if a "magic two" is drawn, the child takes two counters from all other players. If a "crazy five" is drawn, the player puts five counters back into the central pile. A player who runs out of counters is out of the game.		
Paddle pop stick Patterns Distribute a pile of paddle pop sticks to the students. Each student is asked to count out five paddle pop sticks and use them to make a pattern. Students continue by making different patterns with five paddle pop sticks. The students then count the paddle pop sticks used for each pattern.		
Posting Blocks Label containers with numerals 1 to 5, one numeral for each container. Instruct students to drop the correct number of blocks into each container as indicated by the label on the outside. As the students become proficient in the range 1-5, extend the activity to numerals 1-10.		

Rhymes, Songs and Stories Students could listen to stories and sing songs and nursery rhymes to develop number concepts eg Alison's Camel, This Old Man, 1,2,3,4,5 Once I Caught A Fish Alive, Five Little Ducks, Ten Little Indians, Ten Fat Sausages, Ten Green Bottles, Ten In The Bed. It is important to use rhymes that involve counting backwards as well as rhymes that involve counting forwards, and to use ordinal numbers. Teachers could also use stories to teach ordinal names by asking questions such as 'What happened second in the story of the Three Little Pigs?'		
Robot Race Provide each student with a set of ten dot pattern cards for numbers one to ten and a playing base board (see DENS pp. 68 and 69). A nominated person shuffles the cards and places them face down on the "YOU WIN" robot. Students then take turns to draw dot pattern cards from the pack and place them on a robot outline displaying a corresponding numeral. The first student to correctly place all cards and reveal the "YOU WIN"		
Take a Numeral Provide the students with a set of numeral cards for the numbers one to six (see DENS p.57). Arrange the numeral cards face up on the floor in front of the students. The students take turns to roll a standard die and select a corresponding numeral card. If the card has already been taken the student forfeits a turn. Play continues until all cards have been taken.		
Teddy Bear Race Construct playing boards for each pair of students using the DENS p.66. Line up plastic teddies at the start of the playing board, so that one teddy is on each numeral. Students take turns to roll a die and move a teddy one space each time its corresponding numeral is rolled. Play continues until all teddies reach "home" on their playing board		

Ten Frames Provide each student with a ten frame (see BLM p.55) and ten counters. Students take turns to roll a die displaying dot patterns, count the dots and place the corresponding number of counters onto the ten frame. The exact number needed to complete the ten frame must be rolled to finish. *Variation* - Substitute paperclips for counters. Students roll a die and collect the corresponding number of paperclips. They then slide them onto the ten frame squares (see DENS p.55).		
Ten Pegs Provide each student with ten clothes pegs and a length of cardboard displaying ten dots. Students take turns to roll a die and count the dots on the die. After counting the die pattern the student then takes a corresponding number of pegs and attaches them to the cardboard strip, matching each peg to a dot. Play continues until the students have attached pegs to all the dots on their strip of cardboard. They need to roll the exact number needed to finish.		
Ten Teddies This activity is similar to "Ten pegs". Change the cardboard strip to show ten teddies in a line (see BLM pp.60 and 61). The student rolls the die, counts the dots and collects the correct number of plastic teddies to place onto the cardboard strip of teddies.		
The Number Dance Allow students to dance freely around the room to music. By using a prearranged signal, such as tapping a tambourine, indicate to the students that you are holding up a numeral card. The students then form groups with the number of people indicated by the numeral card and continue to dance in the group.		
The Number Train Construct a train from Lego® blocks or cut-off milk cartons. Display a numeral on each carriage of the train. Students place the correct number of items, such as Lego® people, counters or blocks, into each carriage. Instruct partners to count the items in each carriage to confirm that the collection of items corresponds with the numeral.		

Tick Tock Attach a weighted object to the end of a piece of string. Allow the object to swing like a pendulum in a clock. The children count along with the object as it swings from side to side. Set challenges eg how many pendulum swings will it take John to do 10 star jumps. Encourage children to predict how many pendulum swings for each challenge.		
Using 5 as a Reference Students are given a koala train (or egg carton cut to form two rows of five). Five objects e.g koalas are placed in the top row and the students use this as a reference for counting numbers up to 10. Students are asked to count numbers up to 10 by placing some koalas in the bottom row of the egg carton. Students compare their arrangements of chicks. Possible questions include: • What is the number you have now? • What is the next number? • How did you count it?		
What's in the square? On a large sheet of cardboard construct a 5 x 6 grid. Along the top row of the grid write the numerals one to five, starting from the second column. Down the first column, starting from the second square, draw a different symbol in each square. Students complete the grid by drawing the correct number of shapes onto each blank square. Alternatively, provide the students with cut-out shapes corresponding to those drawn in the first column. The students count out the correct number of shapes and place them appropriately on the grid.		

PERCEPTUAL Activities		
Before and After Prepare "before and after" charts for each pair of students as shown in the diagram. Numerals are written down the centre column of the chart. These numerals should be within an appropriate range for the students. Students are given numeral cards to sort and place on the chart in either the "number-before" or "number-after" spaces to form number sequences.		
Bingo: The number after Construct bingo cards for each student using the BLM on p.140. Hold up a numeral card so that all students can see it. Begin with numerals in the range of two to eleven and then progress to numerals in the range of two to twenty-one. Have students check their bingo card, and if it contains a numeral which is one after the number displayed, they cover the numeral with a counter. The winner is the first student to cover all the numerals on the bingo card. *Variations* • Identify the numeral before the one shown, two after or two before. • Extend the range of numbers.		
Body Maths Give each child a card with a numeral card (in range 0-20).Together count and the child with that number comes and stands in the line until all the children are standing and the numbers are in order. Count backwards for them to sit down again.		

Caterpillars Construct a chart depicting a caterpillar. Use one circle to represent the head and ten circles to represent the body. Construct a set of ten cardboard circles, the same size as the segments of the caterpillar's body. On each cardboard circle write a numeral from one to ten. Attach one side of a velcro dot to the circles and the other side to each segment of the caterpillar's body. Students sequence the numerals by attaching the numbered circles to the caterpillar. Alternatively students locate numbers before or after a nominated number. As the students become proficient with the numerals one to ten, vary the range to include numerals from eleven to twenty.		
Class Counting Each child is given a numeral card in the range 0-20 at random. Child with number 1 says their number out loud followed by child with numeral card 2 and so on. Children count out their numbers in correct order. Children use their numeral cards to count backwards. Children use their cards to go and stand in the right order forwards or backwards.		
Concentration Students are given a set of cards with numbers represented by numerals, pictures, dots, or words eg Cards should be provided within an appropriate range eg 0 to 10, 10 to 20,20 to 30. In pairs or individually, students match the cards.		

Egg Flip Number sections of an egg carton using any numerals in the range of one to twenty. Place a counter inside the carton, close the lid and shake the carton. Instruct the students to open the lid and find which cup the counter has landed in. Provide students with a number chart to match the numerals written inside the egg cartons. Students mark off a numeral on the chart, corresponding to the numeral the counter lands on. Students continue until all numerals have been marked off on the chart. *Variation* - Provide the students with a pile of counters. After shaking and opening the egg carton, the students take a corresponding number of counters from the central pile to the number the counter lands on. The winner is the student with the largest total of counters after a specified number of plays.		
Fish chart Construct a chart in the shape of a fish. Draw large scales on the body of the fish and in each scale draw or paste pictures of collections of items. Construct a matching set of scale-cards which will fit exactly on top of the scales on the chart. Write a numeral on each card to correspond with the collection of items in each "scale". Students match a numeral card to the correct collection of items. Construct fish charts for numbers one to five, one to ten or ten to twenty.		
Floor walking - Variations Students walk, and count backwards, from a nominated number along the number line. • Display the number line as footprints on the floor. Students count as they step on each footprint. • Place numbered footprints in random order on the floor. Students find the correct path to step along to form a forward counting sequence. • The numeral line can be replicated on the playground by tracing around students' footprints using chalk on the asphalt. Write a numeral on each foot outline. • Display a washing line made from nylon rope across the chalkboard or between two chairs. Collect old socks. Write numerals on the socks in the range of one to twenty. Students take turns to sequence the socks in correct numerical order along the washing line.		

Maths Tipping Children stand in a place around the floor, ask for first hand up with an answer, e.g. what ordinal number comes after fourth, child with the correct answer moves one step closer to another child. When they are close enough, child touches the closest person, who sits and is out of the game. Last child standing is the winner.		
Number flowers Construct cardboard or paper cut-outs of flowers consisting of a stem and the flower centre. Write a numeral on the centre of each flower. Provide students with a supply of cut-out petal shapes. Students place a number of petals around a flower centre, corresponding to the displayed numeral.		
Pairs Construct pairs of shoe-shaped cards. On one card, write a numeral in the range eleven to twenty. On a matching card, draw a corresponding dot pattern to match each numeral. Display dot patterns as two rows of five to represent ten, and a common dot pattern for the remaining units. Place cards face up and have students match each dot pattern card with the correct numeral card.		
Rabbits' ears Ask students to put their hands above their head. Then ask them to show various numbers by raising the correct number of fingers. This is best done in random order, first in the range one to five and then six to ten. For example, "Show me the number four,… two,…five,…three." The aim is for the students to raise their fingers simultaneously rather than sequentially. Students may verify their count by bringing their hands down and counting their fingers.		
Race Against Time Place the numerals 0-20 in a container (the range can be changed). The children sit in a circle. Choose one child to select a numeral from the container. That child then has to complete a physical challenge in that amount of seconds. For example, one child might pick the number 8 out of the container. You might get that child to complete 8 star jumps and get back to their place in the circle while the rest of the class counts back from 10 to 1.		

Teen Bingo Construct bingo cards using numerals in the range eleven to twenty. (The cards may contain a numeral more than once.) Place a set of numeral cards, which correspond to the numerals on the bingo cards, into a container. The teacher, or a nominated student, draws out the numeral cards one at a time and calls out the drawn number. Students cover the corresponding numerals on their bingo cards with counters as the numbers are called. The winner is the first to cover all the numerals on his or her card		
Teen memory Construct two sets of numeral cards for the numbers eleven to twenty. Place the cards face down in rows between two students. Have the students take turns to flip over two cards and say the numbers as they are revealed. If a pair of cards showing the same number is revealed, the student keeps the cards. If the cards do not match, the student places the cards face down again. Continue until all cards have been matched.		
Where's the Number? Each student is provided with a strip of cardboard that represents a number line, with zero written at one end and ten written at the other (or 11-20,21-30)Using a peg as a marker, the students are asked to locate a particular number on the number lines and discuss its placement in relation to 0 and 10, 11-20,21-30 `0                                          10` The activity is repeated for other numbers between 0 and 10 eg move the peg to where the number 9 would be. *Extension:* The activity could be extended using a 0 to 20 number line.		

Zap Arrange students so that they are standing in a circle. Instruct students to count backwards from twenty down to zero. Each student calls out one number in the sequence. When the number sequence reaches zero, the student who should say "zero" calls out "zap!" and sits down. Continue the activity with the students commencing the backward count from twenty again. This process continues until one student remains standing. *Variations* • The students count from one in a forward number word sequence to twenty. When the number sequence reaches twenty, the student who should say "twenty" calls out "zap!" • Students who are out remain in the circle and continue to say "zap!" whenever it is their turn. The following student continues the count from the number after the number that would have been said instead of "zap"		
# FIGURATIVE Activities		
Counting on Prepare numeral cards in the range eleven to nineteen and place them face down on the floor. Provide the students with two collections of counters. One collection should consist of bundles of ten counters, all of the same colour. The second collection should consist of single counters of assorted colours. Students take turns to select a card. They then collect a corresponding number of counters, using the bundles of ten and single counters. Encourage students to count on from the bundle of ten. This activity may be varied by extending the range of numbers or by using ten strips (made of ten dots on strips of card) instead of counters.		
Flip and see Provide each student with a large collection of paddle pop sticks and a base board divided into a "tens" and a "ones" column. Place numeral cards in the range zero to nine face down on the floor. The students take turns to flip over two numeral cards and place one card in the tens column and one card in the ones column on their base board. Students then bundle paddle pop sticks into tens and place the correct number of bundles and units onto their base board to match the numeral cards.		

Discuss how many tens and ones were made. *Variations* • Students complete the above activity and then swap the numeral cards from the tens column to the units column and vice-versa. They then repeat the activity. • Construct two sets of numeral cards in the range zero to nine. Flip over two numeral cards and ask the students to select identical numeral cards from the second set of cards. Ask students to place their cards in the tens and ones column so that they form the largest and the smallest number possible. • Organise students into pairs and provide each pair of students with a set of numeral cards in the range zero to nine. The students shuffle the cards and place them face down on the floor. They then take turns to select two numeral cards. Using the two cards selected, each student forms the largest two-digit number possible. The two students then compare their numbers and the player with the larger number scores ten points. Continue playing until one player gains a score of one hundred.		
Bucket count on Drop a small collection of blocks one by one, into a bucket. Ask students to count aloud as each block is added to the container. After dropping the blocks, show the students the contents of the bucket. Then hold the bucket above the eye level of the students. Ask the students to state how many blocks would be in the bucket if one more block was added. Repeat the question, changing the number of blocks to be added to two and three blocks. Encourage the students to count on from the number of blocks already in the bucket to find the total.		
Hundreds Chart Count forwards and backwards by ones on a hundred chart e.g. start at different numbers rather than at 1 all the time.		
Number Line | 0 30 | Have a container with numeral cards 0 to 30.Teacher selects a child to pick a numeral card and place it on the number line in the correct sequence. Discuss with each		

student how they knew where to put the number. Did they have to count from the beginning or could they work it out another way. When all numbers are placed on the number line check that the sequence is in the right order again discussing what that order represents. Using the above number line as a reference play **Celebrity heads.** Display a number line showing numbers from 1 to 30 so that all the students in the class can see it. Place movable marker tabs at either end of the strip. One student wears a headpiece to which a numeral card is attached. Ensure that the student does not see the number on the numeral card. Ask the student to have the class help to identify the "secret number". The class, however, can respond only with a yes or no reply to each question. In response to the answers, the selected student then moves the tabs along the number line to indicate the range within which the "secret number" lies. Continue the process until the student is able to identify the number. Model and encourage students to use questions such as: Is it larger than 5? Does it have a 1 in it? Is it between 5 and 10? Is it smaller than 7? Record questions that the students ask so that you can discuss redundant questions with the students – eg Q1 is the number bigger than 6? Answer: Yes Q2 Is the number smaller than 3? This is redundant because of question 1 – discuss and model on the number line with the children.		
Numeral Cards Construct large numeral cards suitable for students to wear around their necks. The cards should display numerals in the range of eleven to twenty. Call out a number within the range. The students then line up in sequence behind the student wearing the numeral card which matches the number called. For example, if "twelve" is called, students with numeral cards thirteen to twenty line up. Count the number sequence aloud from the nominated number. *Variations -* • Students step forward, bow, sit or perform an alternative action when their number is called. • As a number is called all students line up, in random order, behind the student		

wearing the nominated number.
• Distribute to the students numeral cards which can be worn around the neck. Have the students form a circle. Stand in the centre of the circle, hold a bean bag and call out a number corresponding to one of the numeral cards. As the number is called, throw the bean bag into the air. The student wearing the nominated numeral card runs into the centre of the circle and attempts to catch the beanbag. If successful he or she moves to the centre to become the next caller. This activity may be incorporated into daily fitness or physical education lessons.

Order Me
Place the numerals 1-30 in a "feely bag". The children take it in turns to draw a number card from the bag and write it on the number line in sequence so that numbers are going up from 0-30.Return numbers to the bag after each turn. If a card cannot be placed in the correct position then the number card is returned to the bag. The winner is the child who fills their line in order first.

Peg Cards
In pairs, students are given a set of large numeral cards (eg 0 to 30). The cards are not in order. Students take turns to read the numeral on each card to their partner and attach the corresponding number of pegs. The cards are then ordered from 0 to 30 across the floor.
Extension: Students are asked to select two of the numbers from the floor and count from the smallest to the largest, or the largest to the smallest.

Posting counters
Provide the students with a container similar to a money box. Instruct the students to "post" a nominated number of counters through the slot in the container. Encourage the students to count each counter as it is dropped through the slot. Students then pause and state the total number of counters that are now hidden in the container. Instruct the students to post an additional number of counters into the container, counting on from the original number. Alternatively, ask students to pretend there are a specified number of counters in the container. Students count on as additional counters are posted through the slot.

Squeeze
Display number line 0-30 in front of class. Place a peg on each end on 0 and 30. A

child comes up the front and picks a number from 0-30 card pile and keeps it hidden. Other children ask questions about the mystery number, eg is it lower than 10? Is it odd? The card holder answers only yes or no and moves the pegs to squeeze the range of numbers to where children guess the correct number.		
COUNTING ON AND BACK Activities		
Celebrity Head Display a number line showing numbers from 1 to 100 so that all the students in the class can see it. Place movable marker tabs at either end of the strip. One student wears a headpiece to which a numeral card is attached. Ensure that the student does not see the number on the numeral card. Ask the student to have the class help to identify the "secret number". The class, however, can respond only with a yes or no reply to each question. In response to the answers, the selected student then moves the tabs along the number line to indicate the range within which the "secret number" lies. Continue the process until the student is able to identify the number.		
Grocery grab Display a collection of grocery packages of varying weight up to 1 kilogram. Allow the students to compare the weight of each item according to the number of grams indicated on each package. Have the students record the weight of each item in grams. Instruct the students to then sequence the items from lightest to heaviest.		
Guess My Number Provide a calculator for each pair of students. Ask one student to enter a number into the calculator and hide the screen. Instruct the partner to ask questions which will enable him or her to guess the hidden number on the calculator.		
Skip Counting Lead the students in oral counting in unison by tens, up to 100, and then backwards from 100. Support the oral counting by pointing to the location of these numbers on the one hundred chart. Cover the multiples of ten on the hundred chart and have a student point to the position of each number as the class counts forwards or backwards by ten. Vary the activity by using other counting patterns, such as counting by twos or counting by fives.		

Straw Javelin Place masking tape on the floor to indicate a starting point. Organise the students into a line behind the starting point. Have the students take turns to throw a straw as far as they can. Provide the students with Unifix blocks which have been assembled into towers of ten, as well as single blocks. The students then measure the distance the straw travelled by placing the Unifix blocks along the floor from the starting point to the straw.		
The Price Is Right Display a vertical numeral strip to the students. Ask one student to think of a number on the numeral strip. The remainder of the class take turns to guess the number. After each guess, allow the student to point to the nominated number on the number line. The student then states if the guess is higher or lower than the number being thought of. Encourage the students to use the responses from previous guesses when making the next guess.		
Wipe Out Provide each student with a calculator. Ask the students to enter a specific three-digit number into their calculators. Choose one of the digits from the number entered and ask the students to use an arithmetical method to change the nominated digit to zero. For example, have the students enter the numeral 268 in their calculator. Follow this by asking, "How can you change the 6 to 0?"		
# Ordinal Numbers		
Numbers in Real Life Students should be made aware that telephone numbers and street numbers are said differently from ordinal numbers. Place ten objects in a straight line; show students ordinal cards labelled "1st" to "10th". Place ordinal cards in a sequential line under row of toys. Get students to repeat this (shuffle cards).		
First In Line Ask the children to get into lines of five or six. Run through their order, so they know which number they are. Next, throw the dice. Children who match the number thrown, collect a counter/cube, eg if a 2 is thrown, each second child in a line collects		

a counter/cube. Continue say until a number's come up 10 times. Ask the children then in each line, to order themselves so that the one with the most counters is in front.

Questions:
- Who's first in line?
- Who's sixth in line?
- If a 5's been thrown which children will collect a counter/cube?
- How do you know?
- If we had 10 children in a line what other numbers would we have to be able to throw to make it fair?
- How do you know you're standing in the right place?
- If you've got fewer cubes than Joshua , where will you stand, behind or in front?
- Which number do you think will be thrown most often? Why?

Variations
Use a set of digit cards 1-10 to generate the number and extend the lines to 10 children. Use a dice marked in 2's (ie with 2, 4, 6, 8, 10 and 12 marked on faces) and allocate an even number from 2-12 to each child.

In a Row
Stand ten students in a row and get students to sequence the ordinal cards
Place ten chairs in a row and give the following instructions " ….. sit on the fourth chair" etc. Place ten toys in a row; teacher points to a toy and students verbalise the ordinal name.

Ordering Train Carriages
Collect duplo train carriages and connect carriages. Children put ordinal labels on them with bluetac ,discuss the order of each carriage. Make up stories about carriages e.g. the first two carriages are full, which carriage can you get on.

More Than The 3 Billy Goats Gruff
Extend the story of 'The 3 Billy Goats Gruff' to include 10 goats using 10 children of different sizes as the goats. Give each one a numeral card to hold and mark areas at the front of the class as the fields and the bridge. As you re-tell the story ask the children to respond to questions you ask them using their fingers.
Questions:

- Which goat is second in line?
- Show me which goat is sixth in line?
- Which goats are between the seventh and tenth goats?
- How do you know?
- If the third goat has gone across the bridge how many are on the other side now?
- Which goat is before the tallest goat?
- Which goat is behind the tallest goat?
- Which goat is behind the second smallest?
- Which goat will be the last to cross the bridge?
- How many will have crossed then?
- If the fourth goat has crossed over, who will be next?

Variations
Ask the children to order themselves in terms of size and distribute the numeral cards among the others who then have to come out and find the right 'goat' to give their numeral card to. Get them to imagine being in a queue. Ask how many people there are, who's in front, who's behind, etc

Teddy Bear Race
In pairs, students are given six teddy bear counters, a die and a playing board (as shown).

Students line up the plastic teddies at the start of the playing board, so that one teddy is on each numeral. Students take turns to roll a die and move a teddy one space each time its corresponding numeral is rolled. Play continues until all teddies reach 'home' on their playing board.
Extension: As each bear reaches home, students label each bear with its position in the race.

| 1st | 2nd | 3rd | 4th | 5th | 6th |

Possible questions include:
▌ which bear will win the race most of the time? Why?
▌ where did your teddy number one come in the race?

Toy Car Race
Teacher sets up some toy car races in groups of ten. Students race the cars and order them from first to tenth. Then children label them with ordinal cards.
Discuss orders.

Money

Coin Rubbings
Children are given a number of coins to rub and see the animal appear.

Class Shop
*The teacher sets up play situations to allow students to explore coins and notes, and use them in shopping contexts. A selection of items could be available with marked prices.
Students group the items they could buy with a given note or coin
*Students order the items for sale from least expensive to most expensive.
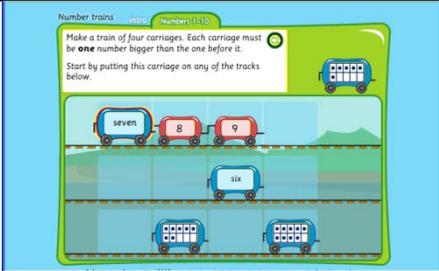*Students role-play buying items at the shop using coins and notes for whole amounts.
*Students group the items they could buy with a given coin or note.
The class shop can vary to include businesses such as hairdresser, butcher, baker, trash and treasure, office, restaurant, or bookshop.

Lolly Shop Concentration Game
All lolly cards are placed face down to the left and money in the purse cards are placed face down to the right. Each child takes a turn to turn over a lolly card and money in the purse card and try to match them. If they match they keep them and if

they don't they turn the cards face down again. The winner is the child who gets the most matching pairs		
Money Reward Week During this week children are given play money for a job well done, e.g. listening carefully, collect money and at the end of the week they count their coins and buy that toy to play with.		
Money Bingo Teacher makes a bingo game with notes and coins and students play as a small group to see who wins.		
<u>**Story Books:**</u> • 'Ten In The Bed' by Penny Dale • 'Five Little Monkeys: Over 50 action and counting rhymes' by Zita Newcome • 'Ten In The Bed and other counting rhymes' by Zita Newcome • 'Number Rhymes to say and play' by Dunn, Opal and Gon, Adriano		
# Using Technology to Teach Mathematics *Please refer to the TEN folder in the Teacher folder on the school's T:drive for IWB resources.*		
Number Trains: Numbers 1-10 Arrange train carriages according to numbers on their sides. The numbers are represented in a range of formats such as words, numerals, base-10 blocks or counting frames. Identify the numbers that come before and after starting numbers. Work with whole numbers up to 10. For example, arrange four carriages into the order 7, 8, 9, 10. This learning object is the first in a series of five objects that progressively increase in difficulty. The series is also packaged as a combined learning object.		

Number Trains: Numbers 1-20 Arrange train carriages according to numbers on their sides. The numbers are represented in a range of formats such as words, numerals, base-10 blocks or counting frames. Identify the numbers that come before and after starting numbers. Work with whole numbers up to 20.		
Numeral Track Identifying the number before and after a given number. The game includes 11 number sets: 1-10, 4-13, 15-24, 26-35, 30-39, 37-46, 43-52, 51-60, 58-67, 72-81, 89-98. 		
Washing Line Placing number cards on a washing line in numerical order. The game includes three washing lines: 1-10, 7– 16 and 15-24.		

Mathletics:
- Everyday Money
- Reading Numbers to 30
- Counting Forwards
- Order Numbers to 20
- Counting Backwards
- Ordinal Numbers
- 1 to 30

Ideal Resources:
- Give the Dog a Bone
- Ghostblasters
- Eggs to Order (KS1)
- Nearest Number
- Teacher Snap
- One Player Snap
- Two Player Snap

Other Activities		