Term 2 2012
Gloucester Public School

Parent Information Session Agenda
Strategies for Building Strong Numeracy Skills - Activities

Speaker: Alison Clifton (Assistant Principal)
- The Numeracy Continuum – reminder what it is and how we use it.

Speaker: Susie McLeod (Community Liaison Officer)
- Quick smart – how you can use it at home.

Speaker: Alison Clifton (Assistant Principal)
- Numeracy Strategies – activities and games
  - Early Stage 1
    - Emergent
      - Mother and Babies
      - Egg Game
    - Perceptual Strategies
      - Diffry Towers (subtraction)
      - Rabbits Ears
  - Stage 1
    - Figurative Strategies
      - Friends of Ten
      - Add Two Dice
      - How Many Eggs
    - Counting on and Back
      - The Beanstalk
      - Three-Dice Game
      - Doubles Plus One
    - Facile Strategies
      - Addition Wheel Pairs (doubles)
      - Building Numbers with ten frames (ten as a composite unit)
  - Stage 2 and 3
    - Facile Strategies (mental strategies)
      - I have, I want, I need
      - Addition Challenge

- Mathematics Websites to use at home
  - Count Me In Too:
  - Counting On:
  - ICT Games
    http://www.ictgames.co.uk/
  - Mathwire
    http://www.mathwire.com/
  - Rainforest Maths
    http://www.rainforestmaths.com.au
  - Count Us In
    http://www.abc.net.au/countusin/default.htm
  - Copacabana Public School
  - Cookie
    http://www.cookie.com/

- Question Time
Duplicate and cut out cards displaying a set of bear cubs in the range one to ten. Construct a second set of mother bear cards displaying the numerals in the range 1 – 10. Students select a cub card, count the cubs and match the card to the corresponding mother bear card. Students continue until all cards have been matched. See BLM 1 and 2 for resources.

Provide each student with a baseboard displaying the outline of an egg. Cut a second outline to create a jigsaw. The first student rolls a die with a standard dot pattern and selects the piece of egg jigsaw displaying the corresponding dot pattern. This piece is placed on top of the game board. Continue the game until all children have completed their egg. See BLM 3 for resources.
To make this game harder, students roll a numeral die and have to find the corresponding dot pattern.
Organise students into pairs and provide each pair with a die and a supply of Unifix blocks. The first student rolls a die, takes a corresponding number of Unifix blocks from a central pile and builds a tower with them. The second student rolls the die and repeats the process. They then compare the two towers to see who has the most blocks and determine the difference between the two towers. The player with the larger number of blocks keeps the difference and all the other blocks are returned to the central pile. The activity continues until one student has a total of ten blocks.

Ask students to put their hands above their head. Then ask them to show you 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, three...two...one.” 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 fingers.
Figurative Activities  Stage 1

Activity 1 – Friends of Ten

Where are they now?

Students demonstrate their understanding of the process of addition by joining two groups. They are able to find the total of the two groups by counting all of the items starting from one.

Where to next?

Students automatically recall number facts to 10.

Shuffle the pack of cards.

Set up the pyramid by flipping over cards from the pack. Start with one card. Overlay this card with two cards making each of these two cards overlap on the bottom corner of the first card. Keep flipping cards to build a pyramid. When you have 7 cards on the bottom row, stop.

To play, pick out any two cards that add to 10 on the bottom row. As cards in other rows become exposed, that is, when there is no card is overlapping on them, then this card can be used to make friends of 10. If you can’t make any more friends of 10 then flip a card off the left-over deck into a pile. This card can be used to make friends of 10 with only the exposed cards on the pyramid. Any picture card or 10 card is considered a fact of 10 already and can be instantly removed from the pyramid (once exposed) or pile (once flipped). The flipped cards have to sit on top of each other and once a card is flipped it blocks the use of the card underneath it. However, when the flipped card is used to make friends of 10 then the card underneath automatically becomes available to use to make a different friends of 10. Two flipped card that are directly on top of one another can be discarded from the flipped pile if they make 10. Once all the flipped cards are used the game ends. Now, all you have to do is count the remaining cards and that is your score. Play a friend or play another game to see if you can beat your previous score!
Construct a set of numeral cards in the range of two to twelve. Place them face up on a table, or on the floor. Taking turns, the students are to roll two dice and find the total. Encourage the students to count on from the larger number rolled. After adding the two dice the student takes a numeral card corresponding to the total. The game continues until all the cards have been taken. If a player rolls a number that has already been taken, the player’s turn is forfeited.

Construct a grid using BLM 4 as well as one set of rule cards and a set of numeral cards for each group of students. Rule cards need to display either an addition or subtraction sign, followed by the numeral 1, 2 or 3. For example, a rule card might display: “+ 3”. Instruct the students to place the correct number of counters on each column according to the numeral written at the top of the column. Students then take turns to turn over a rule card from the pile. Students follow the rule, to add or subtract counters from each column and determine the new total. As the students determine each total, they place a corresponding numeral card at the bottom of each column.
This activity is best completed with a maximum of five students. Prepare Beanstalk base board using the BLM 5 and a pack of instruction cards. The instruction cards should state the direction in which the student moves along the beanstalk, either up or down, and the number of spaces to move, for example, “go up three spaces.” Commence the activity by instructing each student to place a marker at position 10 on the beanstalk. In turns students take an instruction card, follow the directions and move their marker accordingly along the beanstalk. The winner is the first person to reach the castle at the top of the beanstalk. An option is to have the students record the number sentences.

Prepare a set of numeral cards for the numbers three to eighteen. Lay the cards face up in a line on the desk or floor. Have the students take turns to roll three dice and add together the numbers rolled, then take a corresponding numeral card. The game continues until all cards have been taken. If the numeral card has already been taken, the player’s turn is forfeited.

**Variations**

- Use a variety of dice, such as dot and numeral dice.
- Provide each student with a set of numeral cards for the numbers three to eighteen. Have the students take turns to roll three dice and find the total. Each time a student states the total of the three dice, all students place a counter on the corresponding numeral card in their set. The game continues until all numerals have been covered.
Demonstrate the following procedure to the students. Join two equal groups of Unifix blocks to show a double fact, such as 5 + 5. Display a number sentence to the students to describe the action of joining the two groups. Add one block to the second group of blocks. Ask the students to state the total and record the new number sentence. In the above example the new number sentence would be: 5 + 5 + 1 = 11. Separate the two groups again and remove the block just joined. Place it above the second group. Discuss the number combination now formed and its link to the previous combination of numbers, for example: 5 + 5 + 1 = 5 + 6. Explore other doubles plus one combinations.
Provide the students with a copy of the addition wheel worksheet BLM 6. Ask the students to nominate a “double” fact they know where the answer is bigger than ten. The students then write the total for the double fact on the centre of the wheel and the “doubles” combination on one of the spokes. Have the students add “one” to one of the numbers and take away “one” from the other number so that the total remains the same. The students then record the new number sentence on the next spoke of the wheel. Continue adding and subtracting “one” from the number sentence until all the spokes are filled. On the second wheel ask the students to add “ten” to the centre number and determine the addition combinations using the first wheel to help them. Discuss the similarities between the two wheels.
Present the students with two piles of numeral cards displaying numerals 0–9 and a supply of ten-frame cards. The students will require nine “full” ten-frame cards and one of each ten-frames showing 1–9 dots. Have the students draw a numeral card from each pile and construct a two-digit number. The students then represent the numeral using the ten-frame cards. Ask the students to indicate how many more are needed to reach the next decade.
**Facile Activities  Stage 2 and 3**

**Activity 1 – I have, I want, I need**

**Where are they now?**  
Students are able to find the total of a pair of two-digit numbers by counting by tens and ones, with the use of materials.

**Where to next?**  
Students use a range of counting strategies to find the total of two, two-digit numbers mentally.

Provide each student with a worksheet and a set of numeral cards in the range 0–9. Have the students draw two cards from the pile and construct the lowest two-digit number possible from the combination. Record the numeral under the “I have” box. The student then reverses the numerals and records the new number under the “I want” box. Have the students determine the difference between the two numbers and use the empty number line to record their problem solving strategy. Record the difference in the “I need” box. Have the students share their strategies with the class. If the same number is drawn for both cards, have the students return one to the pile and redraw another card.

**Facile Activities  Stage 2 and 3**

**Activity 2 – Addition Challenge**

**Where are they now?**  
Students are able to find the total of a pair of two-digit numbers by counting by tens and ones, with the use of materials.

**Where to next?**  
Students use a range of counting strategies to find the total of two, two-digit numbers mentally.

Organise the students into small groups and provide each group with a set of playing cards, using the “ace” (to represent number one) through to the “nine”, and paper for recording. Divide the cards into two piles. Students take turns to draw two cards to make a two-digit number. Each student then draws another two cards to form a second two-digit number, adds the two numbers together and records the total. The aim is to be the player with a total of 100 or to have the largest total less than 100. A player with a total greater than 100 automatically loses. Instruct the students to keep a tally of their wins and the first to score ten wins and is the “grand champion”.  

**Variation**  
Use a hundred chart to assist mental calculations.
How Many Eggs BLM

How many eggs?

1

2

3

4

5

6
I Have, I Want, I Need BLM
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**Building Numbers with Ten Frames BLM**

**Teeny tiny ten-frames**
### Hundreds Chart

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