

#### 4. Basic Strategies (doubles, commutativity, adding 10, tens facts, other known facts)

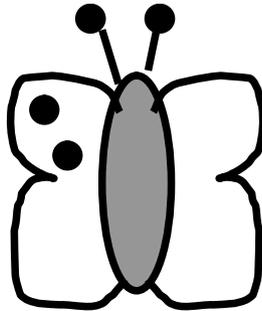
Given an addition or subtraction problem, strategies such as doubles, commutativity, adding 10, tens facts and other known facts are evident.

##### a. Butterflies (Worksheet 36)

*Materials:* templates of butterflies for each student

*Group size:* Small group

Explain to the students that these are the lay out for a new type of chocolate biscuit. There has, however, been a fault at the factory and they have not been properly completed. The biscuits are supposed to have the same number of smarties on both wings of the butterflies, but they have been produced with smarties only on one wing.



Model the above diagram for students. Ask students, how many smarties are there on this biscuit? How many smarties should there be on this biscuit? Have students use the template and counters or pencil to make their own biscuits to determine the correct answer.

Discuss the concept of doubling with the students. Model with other numbers between 1 and 10.

##### b. Tens Frame Match Up (Worksheet 37)

*Materials:* templates of tens frames

*Group size:* Individual or Pairs

The aim of this activity is to reinforce the concept of commutativity. Cut the worksheet into each separate tens frame. Students must match the pairs which show this rule. i.e.  $6 + 4$  and  $4 + 6$ . NB. Match only frames with the same symbols.

*Extension:* Use the blank tens frames to have students develop their own pairs to show commutativity.

# Sine

## c. Draw a Game Card (Worksheet 38)

*Materials:* game cards, calculator, three sets of cards numbered 1 -10

*Group size:* Pairs or small group

Shuffle the number cards and place face down. Students take turns to draw one number card from the pile. They then also draw one of the game cards. They must then give the correct answer to the game card question for their selected number.

eg. draw number 3 and game card “make to 10”. The answer required is “7”.

Partner checks correct response, with calculator if necessary. For each correct response the student scores one point. The first student to score ten points is the winner.

Variation: Use number cards 10 – 20, with second set of game cards.

(i.e. “half”, “subtract 10”, “add to 20” and “subtract to 10”)

## d. Add Them up

*Materials:* none

*Group size:* Whole Class

The aim of this activity is to give students strategies to use when adding together groups of numbers. (Telephone High could be revisited after having completed this activity in order to provide students with further opportunities to add strings of numbers). Give students strings of numbers to add (See below) and encourage them to visit a range of strategies before they begin, to find the most appropriate. i.e. look for tens facts first, then doubles, use the commutativity rule etc.

**Add 4, 3, 6, 5, 8, 7, 2, 9.** Pair up 4 and 6, 3 and 7, 8 and 2. Three pairs of tens facts equals 30. Then use the plus 5 + 10 = 15, but only have 5 + 9 therefore = 14.

$30 + 14 = 44$ .

Use sets of numbers below as practice:

5, 3, 6, 4, 5, 8, 2, 1

4, 7, 6, 9, 2, 5, 7, 1

5, 8, 4, 2, 5, 9, 5, 3

8, 6, 3, 9, 4, 0, 2, 6

7, 1, 5, 3, 7, 8, 4, 6

S i n e

### e. Connect Four Again (Worksheet 39)

*Materials:* activity card, cards numbered 41 – 90, coin

*Group size:* Pairs or small group

Students take turns to draw a card. They then roll the dice, if

Heads – add ten

Tails – subtract ten

Students colour the appropriate square on the grid, the first to colour four squares in a row, vertically, horizontally or diagonally is the winner.