Year 4

Problem Solving Challenge 1

Name of Challenge: Connect Three
Materials Needed: **Game boards (Dice Dilemas Book pgs 6,7,8), dice, counters, instructions**
Extension Prompt: **3 six-sided dice and gameboards**
Enabling Prompt: **2 six-sided dice and gameboard**
Challenge: (using the 4 operations to make numbers) Players try to complete a row of 3 numbers on the gameboard in any direction - horizontally, vertically or diagonally. Main game - 2 ten-sided dice gameboard. Rules: ● Players take it in turns to roles their dice and uses addition, subtraction, multiplication or division of the 2 numbers to make a total shown on the gameboard. ● Players must explain how they have made their total. ● Eg, a throw of 3 and 6 could cover 18 (6x3), 9 (6+3), 3 (6-3) or 2 (6÷3) ● The total is covered with their colour counter. ● A number already covered cannot be used again. ● If they cannot make an available number, they miss their turn. ● The winner is the first player to connect 3 numbers in a row in any direction.

Year 4

Problem Solving Challenge 2

Name of Challenge: Aim High

Materials Needed: Playing Cards (remove face cards) - a 10 card = 0 & aces = 1, Place value charts.

Extension Prompt: Make a 7 digit number with 2 decimal places - explain place value chosen (6 in the tenths column is 6 tenths)

Enabling Prompt: Make a 5 digit number

Challenge: Make the largest number.

In pairs, players choose to make either a 6-digit number (Hundred thousands) or a 6-digit number with 2 decimal places. (see right)
They place the cards face down and take it in turns to turn over a card from the pack.
They then choose the position they wish to place the card in and say the place value of the digit as they place it in the column.

Thousands	Hundreds	Tens	Ones	•	Tenths	Hundredths
				•		
				•		

Eg. a four in the tenths column - say 4 tenths.
Once a card has been placed, it cannot be moved.
The next player takes a card, chooses the position to place it in and gives the value of the digit.
Players continue until all columns have been filled.
They read out their numbers and the player with the highest number wins a point for that round.
Make a new number.
Encourage players to think about where they should place numbers to try to make the highest number.

Year 4

Problem Solving Challenge 3

Name of Challenge: It All Adds Up!

Materials Needed: Game board, pencil, paper for jottings.

Extension Prompt: Where would it be logical to start?

Enabling Prompt: Which column, row or diagonal has only one number missing?

Challenge:

- Identify the missing numbers from the grids.
- The numbers in each row add up to the number at the right of the row.
- The numbers in the columns add up to the number at the bottom of the column.
- The numbers in each diagonal line add up the number to the right and above or below the diagonal.

				20
		3	8	23
5			6	18
		2		21
9		3	9	22
25	20	8	31	21

				15
4	9			19
	6	6		22
	1		7	15
		5	3	20
13	24	19	20	19