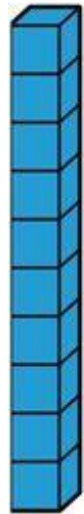


# Year 2 Mathematics Strategies

Addition and Subtraction

# Dienes

- \* Children are taught to partition a number into tens and ones. In order to visualise this, children use dienes where a unit/one is represented by one cube and ten is represented by a ten stick (made up of ten ones).



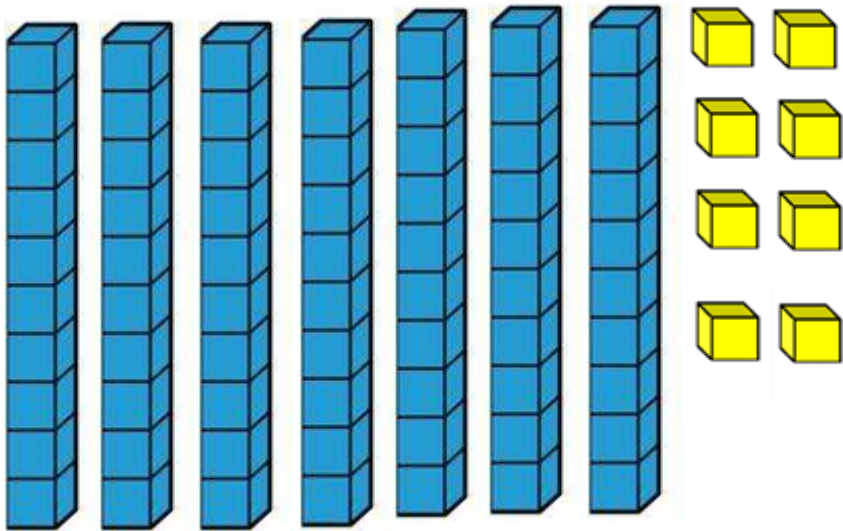
Ten Stick



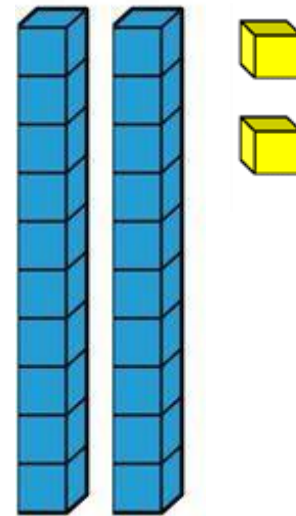
One

# Partitioning with Dienes

78



22



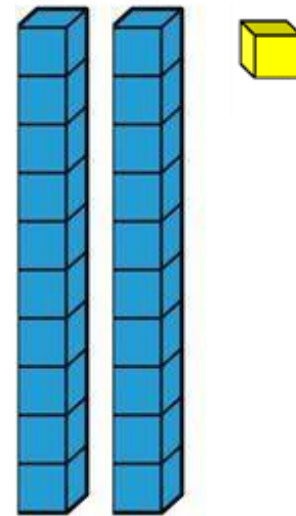
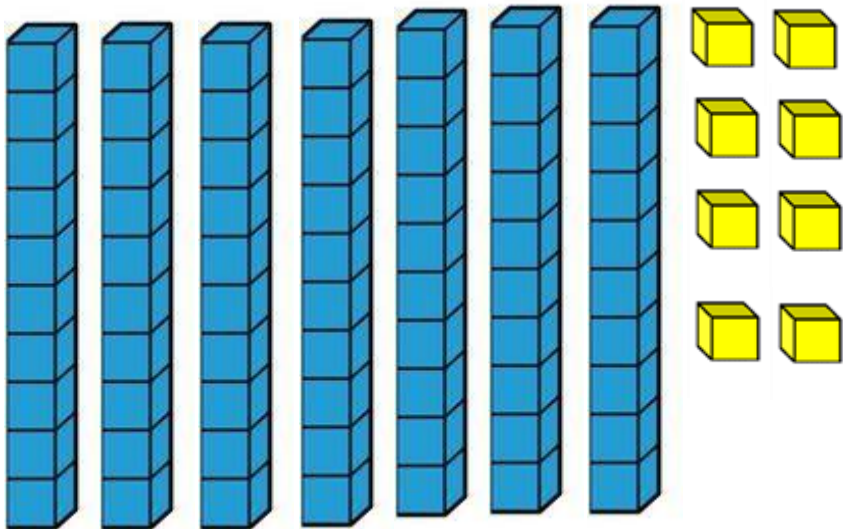
# Addition with Dienes

78

+

21 =

99



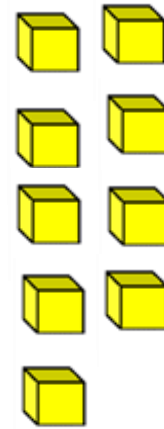
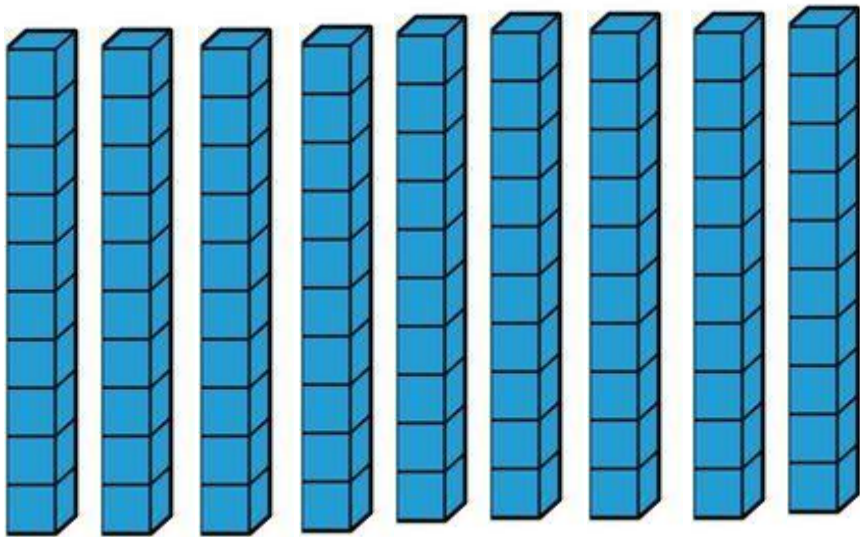
# Addition with Dienes

78

+

21 =

99



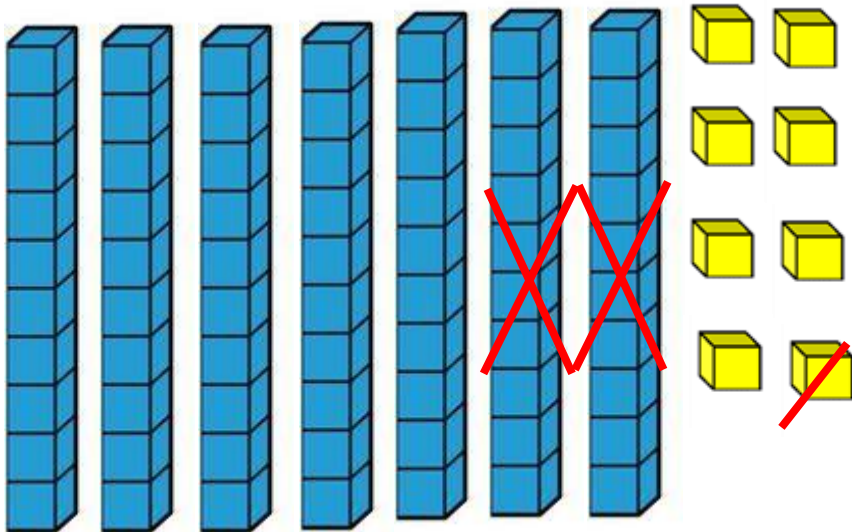
# Subtraction with Dienes

78

-

21 =

57



Have a go!

$$*25 + 32 =$$

$$*47 - 22 =$$

# Bubble Strategy

- \* This is another method in which children need to apply their knowledge of partitioning numbers. They partition the tens above the number sentence and work that out. They also partition the ones underneath and work this out.



# Addition with Bubble Strategy

$$\begin{array}{ccccccc} 50 & + & 20 & = & 70 & & \\ \textcircled{54} & + & \textcircled{21} & = & \textcircled{75} & & \\ 4 & + & 1 & = & 5 & & \end{array}$$

# Subtraction with Bubble Strategy

$$\begin{array}{r} 50 \\ 54 \\ 4 \end{array} - \begin{array}{r} 20 \\ 21 \\ 1 \end{array} = \begin{array}{r} 30 \\ 33 \\ 3 \end{array}$$

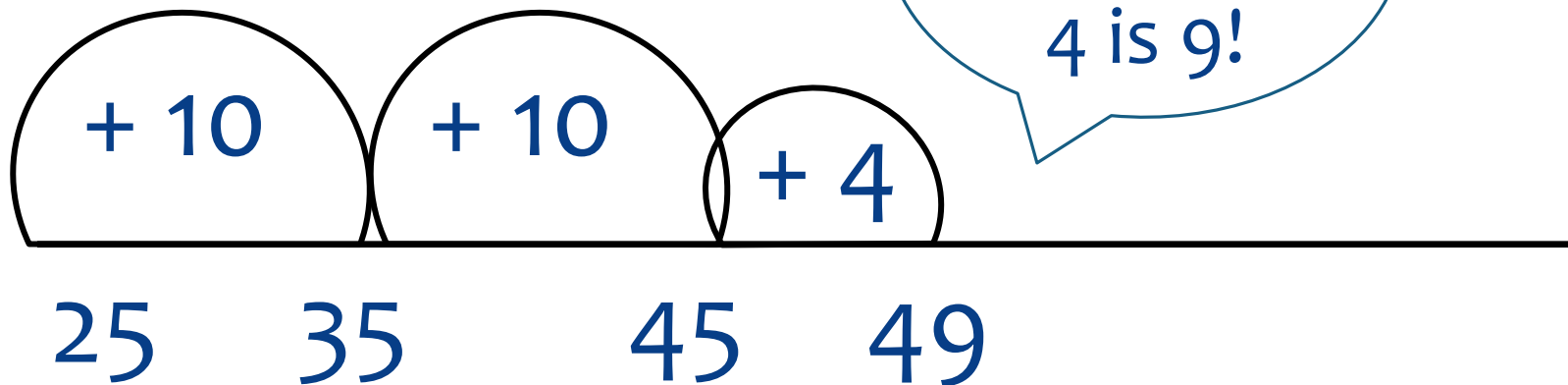
The diagram illustrates the bubble strategy for subtraction. It shows three rows of numbers. The top row is  $50 - 20 = 30$ . The middle row is  $54 - 21 = 33$ , with the numbers 54, 21, and 33 circled. The bottom row is  $4 - 1 = 3$ . This represents the decomposition of the minuend (54) into a multiple of ten (50) and a single-digit number (4), and the subtrahend (21) into a multiple of ten (20) and a single-digit number (1). The result (33) is also decomposed into 30 and 3.

# Empty Number Line

- \* This one is a little bit more complicated. Children use their knowledge of partitioning for this one but they may also use their known number facts to choose their jumps. Children draw a blank line to start with. They are then asked to write their first number on the number line (different for addition and subtraction). Children then need to jump forwards/backwards in tens and then the ones.

# Addition with Empty Number Line

$$25 + 24 = 49$$



I know  
that  $5 + 4$   
is 9!

# Subtraction with Empty Number Line

$$35 + 14 = 21$$

I know  
that  $5 - 4$   
is 1!

$$- 4$$

$$- 10$$

21

25

35

# Bar Model

- \* The Bar Model can be used to help children to add/subtraction numbers and to use the inverse relationship of addition and subtraction. There are plenty of other ways that the Bar Model can be used but today we are focusing on addition and subtraction.

# Bar Model

This bar represents the whole

This bar represents part

This bar represents part

$$25 + 24 =$$

?

25

24

# Bar Model

$$25 + 24 = 49$$

49

25

24

$$24 + 25 = 49$$

$$49 - 25 = 24$$

$$49 - 24 = 25$$



# Bar Model

$$25 + ? = 49$$

49

25

?

To work this out:

$$49 - 25 = ?$$