

## Learn and Discover

After dropping you off at school this morning, 40 parents went to Starbuck's Coffee shop.

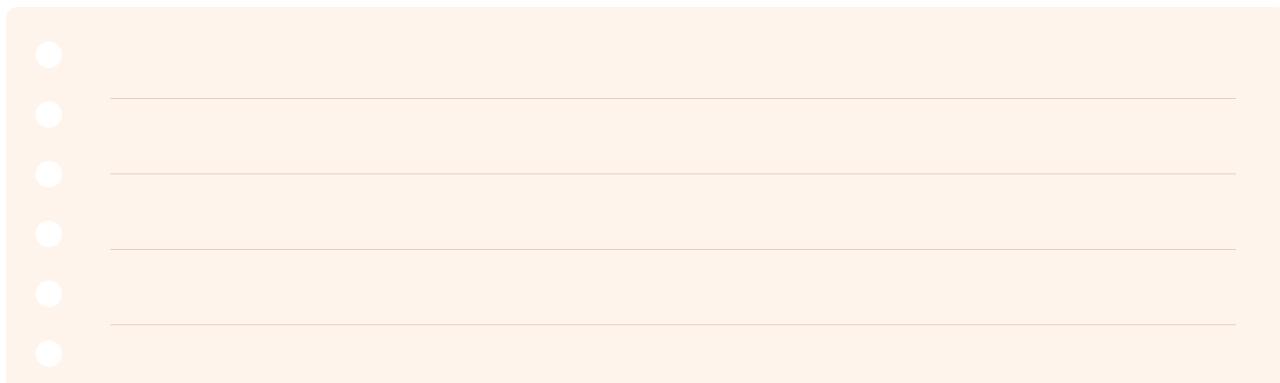
Here is a summary of their orders:

	Chocolate Brownie	Granola bar	Total
Cappuccino	14	16	30
Tea	2	8	10
Total	16	24	40

(1) How many parents ordered cappuccino and a granola bar?

(2) How many parents ordered tea?

(3) How many parents ordered a granola bar?



A light orange rectangular area with a vertical stack of six white circles on its left edge, resembling a spiral notebook page. The main body of the page is blank for writing.

## Exploration 2

The 57 pupils in Years 5 and 6 were asked about their favourite crisps.  
The table below shows the results.

	salt and vinegar	cheese and onion	Total
Year 5		12	25
Year 6	14		
Total			57

- (1) Some of the numbers are missing, fill in the missing numbers.  
(2) How many pupil's favorite crisps are cheese and onion crisps?

- A. 18      B. 28      C. 30      D. 32      E. 35

## Exploration 3

Mongle birds can be either pink or green. Some of them eat insects, but the rest prefer seeds. In a particular flock of Mongle birds, there are 17 green birds in total and 12 birds which eat seeds. 9 of the pink birds eat insects and 2 of the green ones eat seeds. How many birds are there in the flock?

(You can use the table to help you)

	Pink	Green	Total
Seeds			
Insects			
Total			

- A. 17      B. 19      C. 25      D. 36      E. 42

### Practice

30 students were asked if they liked coffee.

20 of the student were girls.

6 boys liked coffee.

12 girls did not like coffee.

	Boys	Girls	Total
Like coffee			
Did not like coffee			
Total			

(1) Use this information to complete the following table.

(2) How many students like coffee?

- A. 16      B. 14      C. 12      D. 10      E. 8

### Exploration 4

23 pupils are attending a survey on whether pupils walk to school or not. 11 pupils are girls and 6 of them walks to school. 8 boys don't walk to school.

(a) Draw a Carroll diagram of the survey results based on the information.

(b) How many pupils walk to school?

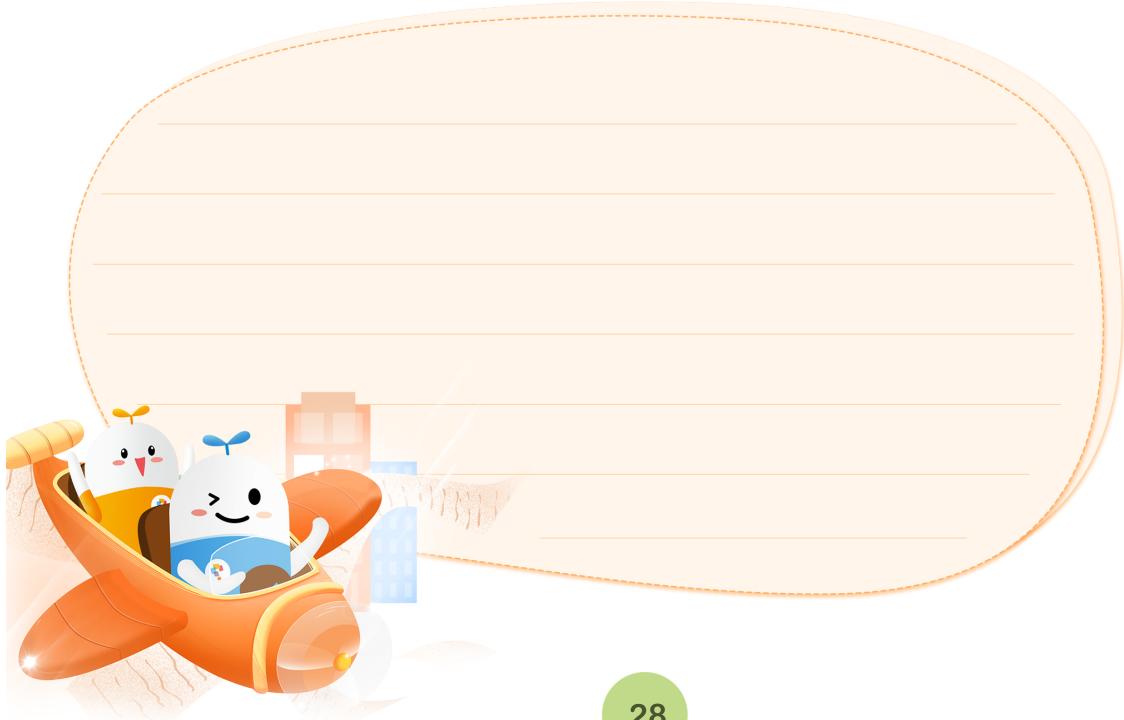
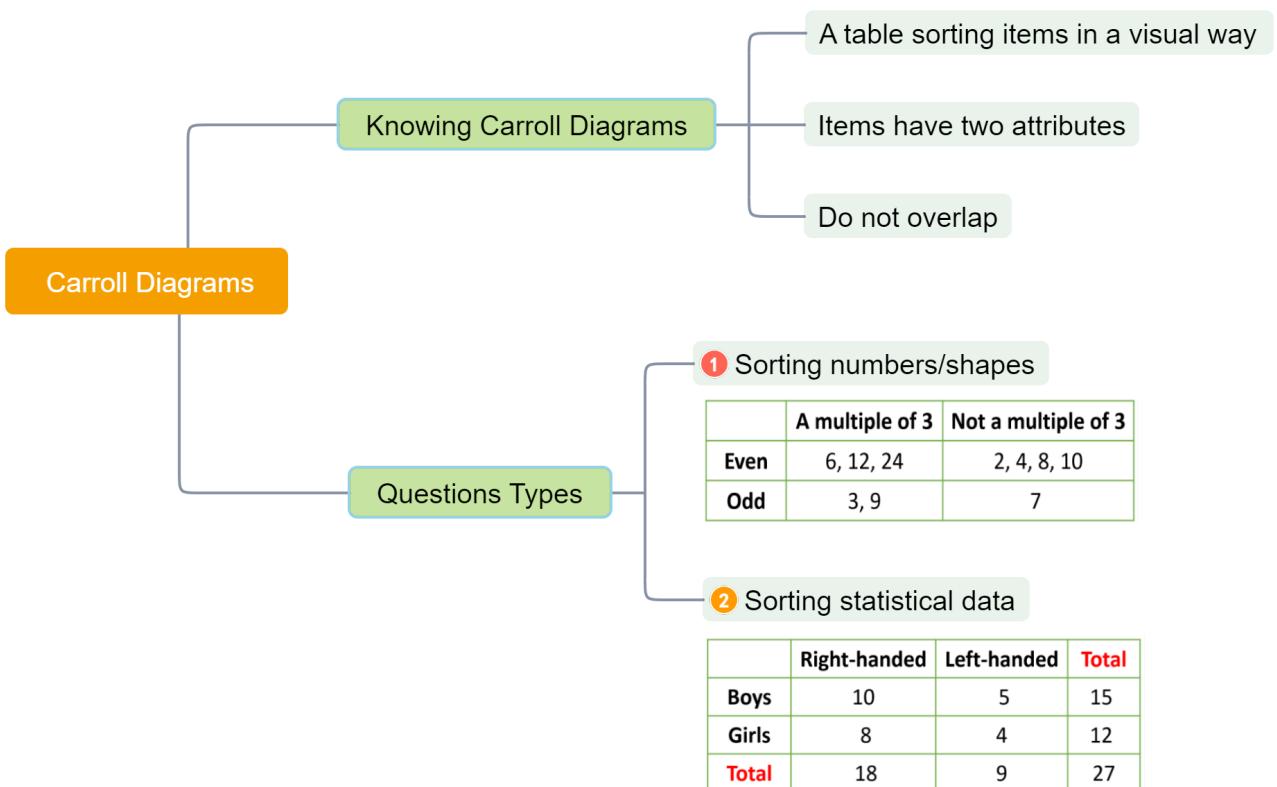
### Challenge

The chart below shows the subjects studied by a group of students.

	History	Geography	Classics	Total
Boys	28		8	50
Girls		19		
Total	35		29	

Complete the chart above.

# Knowledge Map



# Homework

## Teaching Time

Have you learnt everything from the class? Share your thoughts with your family on how to solve the question below.

	Parallel lines	No parallel lines
Perpendicular lines	A	B
No perpendicular lines	C	D

(1) Which section should the capital letter "L" be in?

- A. A      B. B      C. C      D. D

(2) Which section should the capital letter "E" be in?

- A. A      B. B      C. C      D. D



## Day 1

1 The numbers from 1 to 20 are placed in a Carroll diagram as shown.

	Multiple of 5	Not a multiple of 5
Even	10, 20	2, 4, 6, 8, 12, 14, 16, 18
Odd	5, 15	1, 3, 7, 9, 11, 13, 17, 19

(1) How many odd numbers are not multiples of 5? \_\_\_\_\_

(2) How many numbers are not only even numbers but also multiples of 5 ? \_\_\_\_\_

2 Write the circled numbers in the correct place on the Carroll diagram.

4, 11, 14, 21, 24

	Even number	Not an even number
Multiple of 7		
Not a multiple of 7		

3 Sort the following numbers in the given Carroll Diagram:

1, 2, 3, 4, 5, 6, 10, 14, 15, 20, 21, 27, 28, 35, 47, 55

	1-digit Numbers	2-digit Numbers
Even Numbers		
Odd Numbers		

- 4 Place these numbers into the Carroll diagram.

2, 3, 7, 9, 11, 13, 17, 19, 21, 24, 29

	Multiples of 3	Not multiples of 3
An even number		
Not an even number		

- 5 Put the shapes in the correct positions in the Carroll Diagram:

isosceles triangle    equilateral triangle    square    rhombus

	Regular Polygon	Irregular Polygon
Quadrilateral		
Not Quadrilateral		



## Day 2

- 1 The diagram below shows information about the girls in Year 6 who play in the hockey team and/or the netball team.

	hockey	not hockey
netball	9	6
not netball	7	3

(a) How many girls are in Year 6? \_\_\_\_\_

(b) How many of the girls play in both teams? \_\_\_\_\_

- 2 Mrs Walters asked all the children in Year 6 if they play tennis. The table below shows some of the results.

	Play tennis	Do not play tennis	Total
Class 6A	14		20
Class 6B		8	
Total		14	44

(1) How many children are there in class 6A? \_\_\_\_\_

(2) Complete the table.

- 3 The table below shows the stamps Elly and Sam had. Complete the table.

	UK	France	Total
Elly	17	19	
Sam	13		24

How many stamps do they have in total? \_\_\_\_\_

- 4 Complete the following table about a group of children to work out the total number of girls in the group:

	Right-handed	Left-handed	Total
Boys	19		
Girls		7	
Total		16	60

- 5 There are two maths classes in Year 6, called 6A and 6B.

	boys	girls	Total
6A	14		
6B		6	18
Total			48

(a) How many girls are there in 6A? \_\_\_\_\_

(b) Some boys leave Year 6 to go to another school.

Half the total number of pupils in Year 6 are now boys.

How many boys have left the school? \_\_\_\_\_



## Day 3

- 1 In a survey of 40 people, 23 were males.  
Of the females, 11 were born in the UK.  
Altogether, 28 people were born in the UK.  
Some of this information has been put into the table below.  
Complete the table.

	male	female	total
born in the UK		11	
not born in the UK			
total	23		40

- 2 In a survey of 120 people, 12 more than half of the people are females.  
Of the males, 30 can drive.  
In total 40 people cannot drive.

Fill in the table below to show this information.

	males	females	total
can drive	30		
cannot drive			
total			120

- 3 The table below shows the number of teachers and pupils who went to Disneyland. A total of 220 teachers and pupils went to Disneyland. 198 of them are pupils.  
Complete the following table.

	Male	Female
Number of Teachers	10	_____
Number of Pupils	_____	84
Total	_____	_____

- 4 There are 80 members in the school orchestra.  
35 of the members are boys.  
30 of the girls in the orchestra play a stringed instrument.  
In total, 38 of the members do not play a stringed instrument.  
Use this information to complete the table below.

	boy	girl	total
plays a stringed instrument			
does not play a stringed instrument			
total			

- 5 There were 500 cats in a survey about two new cat foods, Moggy Nosh and Feline Fodder.  
220 were Persian and the rest were Siamese.  
80 cats preferred Moggy Nosh.  
Of these, 42 were Persian.

Use this information to complete this table.

	Persian	Siamese	Total
Prefer Feline Fodder			
Prefer Moggy Nosh			
Total			



## Day 4

- 1 Place these numbers into the Carroll diagram.

3, 4, 6, 8, 10, 12, 15, 16, 18, 24

	Multiples of 6	Not multiples of 6
Multiples of 4		
Not multiples of 4		

- 2 There are two Maths classes in Year 6, one is called 6A and the other 6B.

There are 50 pupils in the two classes, 22 of them are in 6B. There are 15 girls in 6A and 8 boys in 6B. How many boys are there in the two classes?

	boys	girls	total
6A			
6B			
total			

- 3 50 children belong to an art club which meets each week, 24 of them are boys. They can choose to do drawing or pottery. There are 9 boys and 14 girls choose to do drawing. How many girls choose to do pottery?

	drawing	pottery	total
boys			
girls			
total			

- 4 A box of chocolates contains 24 chocolates. Each chocolate is either milk chocolate or dark chocolate. All the chocolates have centres, which are either toffee or nut (not both).

There are 5 milk chocolates with a nut centre. There are 10 dark chocolates altogether, and 15 toffees altogether.

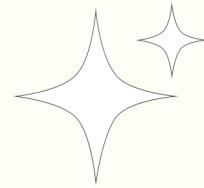
How many dark chocolate toffees are there? \_\_\_\_\_

You can use a carroll diagram to solve the problem.



- 5 In a group of 50 girls each one is either blonde or brunette and is either blue-eyed or brown-eyed. 14 are blue-eyed blondes, 31 are brunettes, and 18 are brown-eyed. How many are brown-eyed brunettes?

You can use a carroll diagram to solve the problem.



## Lesson 3

# Addition and Subtraction Puzzles (2)



Let's Look Back

Column Addition and Subtraction

About this Lesson

Addition and Subtraction Puzzles

Let's Look Ahead

Multiplication and Division Puzzles

### Objectives

- Learn to analyse puzzles from the last digit and the first digit.
- Learn the 'golden triangle' method and use it in puzzles.

## Let's Get Ready

1 Solve the following questions by column addition or subtraction.

(1)  $25 + 243 =$       (2)  $238 + 345 =$

(3)  $198 - 63 =$       (4)  $507 - 234 =$

2 Fill in the blanks.

(1)  $5 + \underline{\quad} = 13$       (2)  $\underline{\quad} + 6 = 11$

(3)  $\underline{\quad} - 8 = 7$       (4)  $16 - \underline{\quad} = 9$

3 Fill in the blanks.

(1)

$$\begin{array}{r} 1 \ \square \\ + 1 \ 5 \\ \hline 2 \ 7 \end{array} \qquad \qquad \begin{array}{r} 1 \ \square \\ + 1 \ 8 \\ \hline 3 \ 2 \end{array}$$

(2)

$$\begin{array}{r} 3 \ 5 \\ - 1 \ \square \\ \hline 2 \ 3 \end{array} \qquad \qquad \begin{array}{r} 3 \ 5 \\ - 1 \ \square \\ \hline 1 \ 7 \end{array}$$

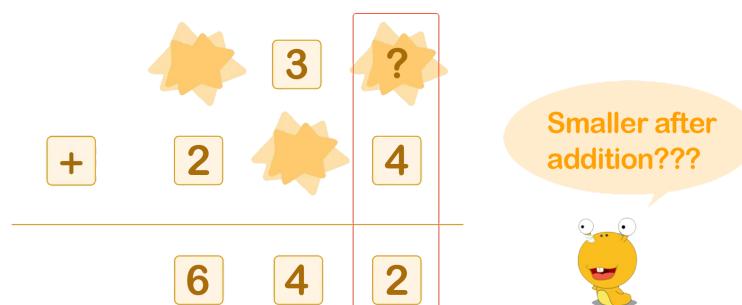
## In Class

### Learn and Discover

- 1 Oh no! Some pesky bugs have eaten some of the numbers in this calculation! Can you figure out the missing numbers? Where should we start to complete it?



- 2 Which number should replace the question mark?



- A. 2      B. 4      C. 6      D. 8

## Exploration 1

Write a digit in each box to make the calculations correct.

$$\begin{array}{r} 3 \quad \square \quad 8 \\ + \quad \square \quad 2 \quad \square \\ \hline 8 \quad 7 \quad 5 \end{array}$$
$$\begin{array}{r} \square \quad 6 \quad \square \\ + \quad 3 \quad \square \quad 4 \\ \hline 5 \quad 4 \quad 2 \end{array}$$

## Practice

Fill in the blanks. What is the value of A?

$$\begin{array}{r} 2 \quad \square \quad 8 \\ + \quad A \quad 6 \quad \square \\ \hline 6 \quad 2 \quad 5 \end{array}$$

A. 2

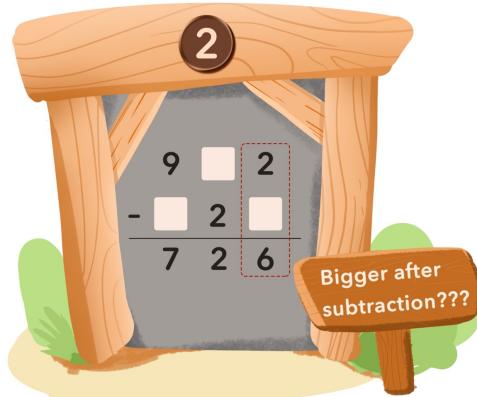
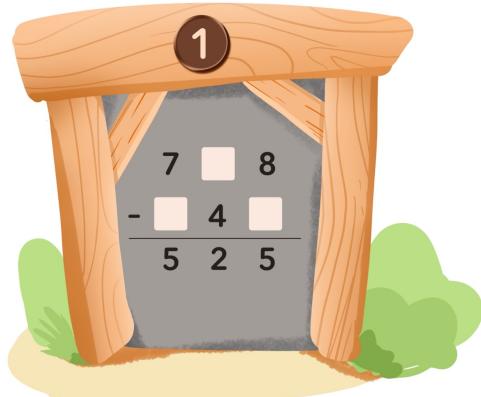
B. 3

C. 4

D. 5

## Learn and Discover

The password is hidden in the column. Can you solve it?



A large rectangular area with horizontal lines for writing, featuring a vertical margin line on the left side.

## Exploration 2

Write a digit in each box to make the calculations correct.

(1)

$$\begin{array}{r} \boxed{\phantom{0}} \quad 8 \quad \boxed{\phantom{0}} \\ - \quad 2 \quad \boxed{\phantom{0}} \quad 9 \\ \hline 3 \quad 4 \quad 5 \end{array}$$

(2)

$$\begin{array}{r} 7 \quad \boxed{\phantom{0}} \quad 1 \\ - \quad \boxed{\phantom{0}} \quad 9 \quad \boxed{\phantom{0}} \\ \hline 2 \quad 7 \quad 7 \end{array}$$

## Practice

Fill in the blanks. What is the value of H?

$$\begin{array}{r} 6 \quad H \quad 2 \\ - \quad \boxed{\phantom{0}} \quad 6 \quad \boxed{\phantom{0}} \\ \hline 4 \quad 7 \quad 4 \end{array}$$

A. 2

B. 3

C. 4

D. 5

## Learn and Discover

1 What is the value of A?

$$\begin{array}{r} \boxed{\phantom{0}} & 2 & 3 \\ + & \boxed{\phantom{0}} & 7 & 4 \\ \hline A & \boxed{\phantom{0}} & 9 & 7 \end{array}$$

A. 0

B. 1

C. 2

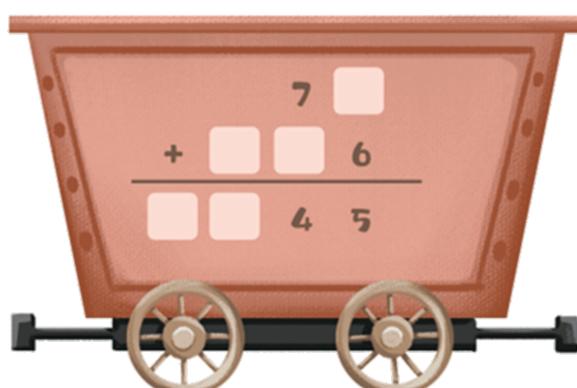
2 Fill in the blanks.

$$\begin{array}{r} 7 \\ + \quad \boxed{\phantom{0}} \quad \boxed{\phantom{0}} \\ \hline \boxed{\phantom{0}} \quad \boxed{\phantom{0}} \quad 2 \end{array}$$



## Exploration 3

Fill in the blanks to start the tramcar.



## Learn and Discover

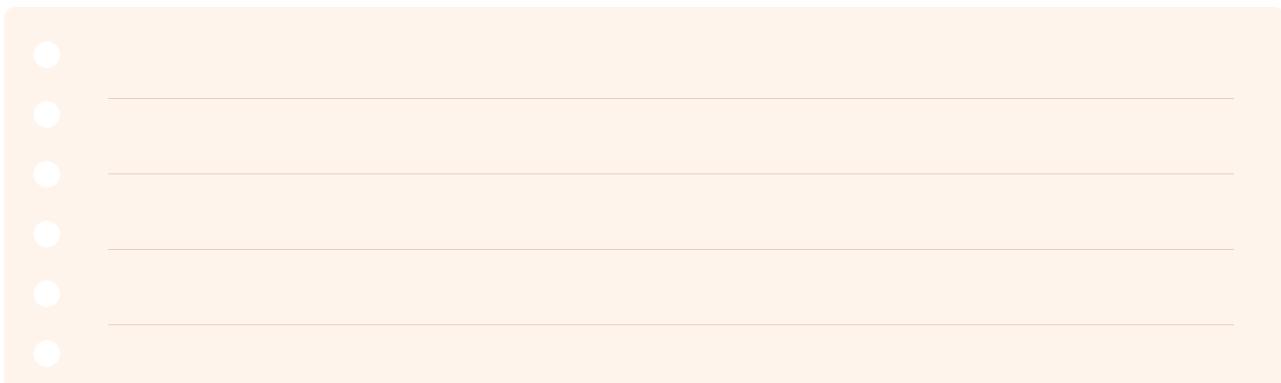
1 What is the value of A?

$$\begin{array}{r} A \quad \boxed{\phantom{0}} \quad 8 \\ - \quad \boxed{\phantom{0}} \quad 2 \\ \hline \quad \boxed{\phantom{0}} \quad 6 \end{array}$$

- A. 0      B. 1      C. 2

2 Fill in the blanks.

$$\begin{array}{r} \boxed{\phantom{0}} \quad \boxed{\phantom{0}} \quad 3 \\ - \quad \boxed{\phantom{0}} \quad \boxed{\phantom{0}} \\ \hline \quad \quad \quad 6 \end{array}$$



### Exploration 4

Fill in the blanks.

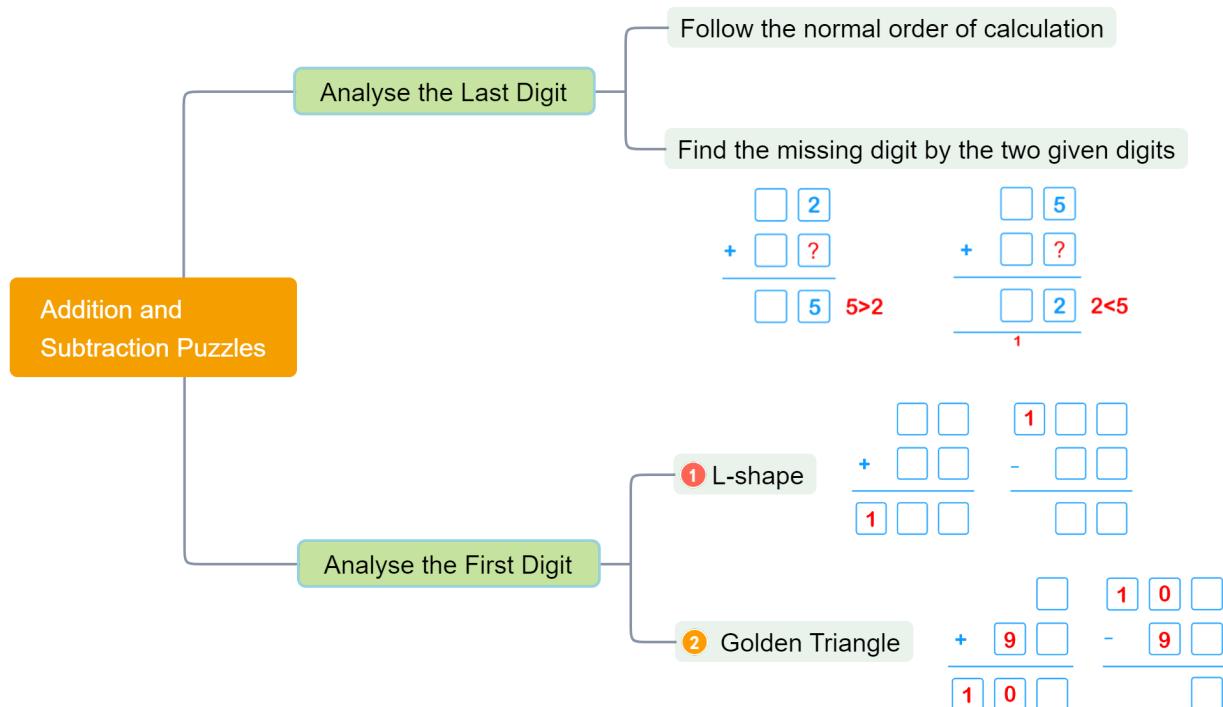
$$\begin{array}{r} \square \quad \square \quad 6 \quad \square \\ - \quad \square \quad \square \quad 5 \\ \hline 9 \quad 8 \end{array}$$

### Challenge

Different figures represent different digits.  $\star = \underline{\hspace{2cm}}$ .



# Knowledge Map



# Homework

## Teaching Time

Have you learnt everything from the class? Share your thoughts with your family on how to solve the question below.

In the column addition below, some of the numbers are missing. Find out all the numbers.

$$\begin{array}{r} 7 \\ + \blacksquare 5 3 \\ \hline \blacksquare \blacksquare \blacksquare 9 \end{array}$$




Day 1

- 1 Find the missing numbers.

$$\begin{array}{r} \square & 5 \\ + & \square & 7 & \square \\ \hline 6 & 6 & 1 \end{array}$$

2 Find the values of the letters.

( 1 )

$$\begin{array}{r} 2 \quad 5 \quad A \\ + \quad 3 \quad B \quad 6 \\ \hline 5 \quad 9 \quad 4 \end{array}$$

A= \_\_\_\_\_ , B= \_\_\_\_\_ .

( 2 )

$$\begin{array}{r} 4 \quad 7 \quad 2 \\ + \quad 4 \quad C \quad 5 \\ \hline D \quad 4 \quad 7 \end{array}$$

C= \_\_\_\_\_ , D= \_\_\_\_\_ .

3 Fill in the blanks.

$$\begin{array}{r} 3 \quad \square \quad 4 \\ + \quad \square \quad 5 \quad \square \\ \hline 9 \quad 8 \quad 1 \end{array}$$

4 Fill in the missing numbers.

(1)

$$\begin{array}{r} \boxed{\phantom{0}} & 6 & 8 \\ + & 3 & \boxed{\phantom{0}} & \boxed{\phantom{0}} \\ \hline 6 & 8 & 9 \end{array}$$

(2)

$$\begin{array}{r} \boxed{\phantom{0}} & 6 & \boxed{\phantom{0}} \\ + & 3 & \boxed{\phantom{0}} & 7 \\ \hline 8 & 2 & 5 \end{array}$$

5 In this addition column, A and B stand for digits.

$$\begin{array}{r} 8 & 3 & 5 & A \\ + & A & B & 2 \\ \hline B & 1 & 4 & B \end{array}$$

What is the value of B?

A. 7

B. 8

C. 9



## Day 2

- 1 Find the number for each shape to make the following column puzzle correct. The star represents \_\_\_\_\_, and the circle represents \_\_\_\_\_.

$$\begin{array}{r} & 1 & 0 \\ - & \star & 3 \\ \hline & 6 & 8 \end{array}$$

- 2 Fill in the blanks.

(1)

$$\begin{array}{r} 6 \ \square \ 5 \\ - \ \square \ 3 \ \square \\ \hline 2 \ 4 \ 3 \end{array}$$

(2)

$$\begin{array}{r} 2 \ 5 \ \square \\ - \ \square \ 1 \\ \hline \square \ 2 \ 5 \end{array}$$

- 3 The digits in the 3 boxes are the same.

What is the missing digit in each box? \_\_\_\_\_

$$\begin{array}{r} 5 \ 2 \ 8 \\ - \ 2 \ \square \ \square \\ \hline 2 \ \square \ 2 \end{array}$$

4 What are the two missing numbers?

$$\begin{array}{r} 8 & 1 & X \\ - & 6 & Y & 5 \\ \hline 1 & 7 & 4 \end{array}$$

Ans:  $X =$  \_\_\_\_\_

Ans:  $Y =$  \_\_\_\_\_

5 Fill in the missing numbers.

(1)

$$\begin{array}{r} 5 & 6 & \square \\ - & \square & \square & 8 \\ \hline 3 & 2 & 5 \end{array}$$

(2)

$$\begin{array}{r} \square & 1 & \square \\ - & 6 & \square & 6 \\ \hline 1 & 3 & 9 \end{array}$$



## Day 3

1 Find the missing numbers.

$$\begin{array}{r} \boxed{\phantom{0}} \quad 6 \\ + \quad 9 \quad \boxed{\phantom{0}} \\ \hline \boxed{\phantom{0}} \quad 5 \quad 3 \end{array}$$

2 Find the missing numbers.

$$\begin{array}{r} 6 \quad 4 \quad \boxed{\phantom{0}} \\ + \quad \boxed{\phantom{0}} \quad 9 \quad 2 \\ \hline \boxed{\phantom{0}} \quad 4 \quad \boxed{\phantom{0}} \quad 8 \end{array}$$

3 Find the missing numbers.

$$\begin{array}{r} 5 \quad \boxed{\phantom{0}} \quad 9 \\ + \quad \boxed{\phantom{0}} \quad 7 \quad \boxed{\phantom{0}} \\ \hline \boxed{\phantom{0}} \quad 3 \quad 3 \quad 2 \end{array}$$

4 Find the missing numbers.

$$\begin{array}{r} \square & 4 & \square & 1 \\ - & \square & 4 & \square \\ \hline 5 & 7 & 8 \end{array}$$

5 Find the missing numbers.

$$\begin{array}{r} \square & 2 & 0 & 3 \\ - & \square & 7 & \square \\ \hline 6 & \square & 1 \end{array}$$



## Day 4

- 1 Fill in the blanks.

$$\begin{array}{r} \boxed{\phantom{0}} \quad 7 \\ + \quad \boxed{\phantom{0}} \quad 8 \quad \boxed{\phantom{0}} \\ \hline \boxed{\phantom{0}} \quad \boxed{\phantom{0}} \quad 5 \quad 6 \end{array}$$

- 2 Find the value of A, B, C.

$$A = \underline{\hspace{2cm}}, B = \underline{\hspace{2cm}}, C = \underline{\hspace{2cm}}.$$

$$\begin{array}{r} 8 \quad \boxed{\phantom{0}} \\ + \quad C \quad \boxed{\phantom{0}} \quad 8 \\ \hline A \quad B \quad 2 \quad 2 \end{array}$$

- 3 Find the value of A, B, C.

$$A = \underline{\hspace{2cm}}, B = \underline{\hspace{2cm}}, C = \underline{\hspace{2cm}}.$$

$$\begin{array}{r} A \quad B \quad 2 \quad 7 \\ - \quad C \quad 5 \quad 4 \\ \hline 7 \quad 3 \end{array}$$

4 Find the missing numbers.

$$\begin{array}{r} \square \quad \square \quad \square \quad 5 \\ - \quad \square \quad 8 \quad \square \\ \hline 8 \quad 3 \end{array}$$

5 In the column additions below, some of the numbers are replaced by shapes. Different shapes represent different numbers. Find the value of each shape.

(1)

$$\begin{array}{r} \star \quad \star \\ + \quad \star \\ \hline 6 \quad 0 \end{array}$$

$$\star = ( \quad )$$

(2)

$$\begin{array}{r} \diamond \quad \triangle \\ + \quad \triangle \quad \triangle \\ \hline 1 \quad 7 \quad 8 \end{array}$$

$$\diamond = ( \quad )$$

$$\triangle = ( \quad )$$

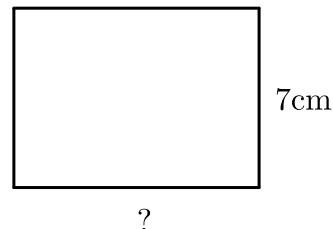


## Stage Test (L1-L3)

1 The length of a rectangle is 12 cm and the width is 5 cm. What is the area of the rectangle? \_\_\_\_\_ cm<sup>2</sup>.

2 If the area of a square is 49 cm<sup>2</sup>, then the side length of this square is \_\_\_\_\_ cm.

3 The area of this rectangle is 84cm<sup>2</sup>. Find its length. \_\_\_\_\_ cm



4 The perimeter of a rectangle is 20 cm and the length of it is 6 cm. What is the area of this rectangle? \_\_\_\_\_ cm<sup>2</sup>