Maths Alive! Workshop for Parents 25 April 2025





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Thank you for your understanding.









To introduce strategies used to solve word problems.









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02

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 Problem

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 - Shortage and
 Excess
 - Ratio

Problems with statements that are "True", "False" or "Not Possible to Tell" Mixed Topics

Koobits







Aims and Framework of Mathematics

Mathematics Curriculum Framework

Belief, appreciation, confidence, motivation, interest and perseverance

Proficiency in carrying out operations and algorithms, visualising space, handling data and using mathematical tools



Awareness, monitoring and Metacognition regulation of thought processes Attitudes Mathematical Processes Problem Solving Skills and communicating, applying and modelling Concepts Understanding of the properties and relationships, operations and algorithms

Competencies in abstracting and reasoning, representing







3 Content Strands		
Number and Algebra	Measurement and Geometry	Statistics



NUMBER AND ALGEBRA

 Students learning about whole numbers, fractions and decimals and use their knowledge in everyday situations.
 Word problems provide students with opportunity to apply mathematics concepts and skills in everyday situations





MEASUREMENT AND GEOMETRY

• Students learn about length, mass, area, volume, time. This helps them develop skills of measuring and see the relevance in everyday situations.

Area: real life uses

•Deciding how much carpet you need for a room

•Determining how much paint you need for the walls in a room









STATISTICS

 Students learn the methods and tools to analyse and interpret data in graphs and pie charts so that the useful information can be used for decision making and understanding a situation. This is a practical aspect of mathematics that is relevant to everyday life and situations





- STAR approach
 - See what is given
 - Think of a plan
 - A ct on my plan
 - R elook and check





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STRATEGY

Key Questions to ask when solving a problem

See (What is given?)	Think (What is my plan?)
 Can I retell the problem in my own words? What am I asked to find? What are the key words? What are/are not given? 	 Have I solved the same type of problem before? What methods can I use? Can I solve a part of the problem first?
Act (What do I need to do?) Can I carry out my plan? Can I show the steps correctly? Can I show the steps clearly? 	 Relook (Reflect and Check) Does my method make sense? How do I know? Do I have another way to solve this problem? Is my working/diagram/model accurate? Have I checked my solution thoroughly? Can I ask another question? Can I write a similar problem?

- STAR approach
 - S ee what is given
 - Think of a plan
 - A ct on my plan
 - R elook and check





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STRATEGY

- STAR approach
 - See what is given
 - Think of a plan
 - A ct on my plan
 - R elook and check

*1.4 Whole Numbers (Stacking Model) Mrs Tan paid \$297 for 3 long-sleeved shirts and 2 pairs of jeans. Each pair of jeans costs 3 times as much as a long-sleeved shirt. Find the difference in price between a pair of jeans and a long-sleeved shirt			
See (What is given?)	Think (What is my plan?) Can I use Part-Whole Model drawing? Can I use Comparison Model? Can I use Stacking method? Can I use Guess and Check? Can I use Guess and Check? Can I use Working Backwards? Can I make a list or draw a table? Other heuristic(s) I can use:		
Act (What do I need to do?)	Relook (Reflect and Check)		





GUESS AND CHECK





QUESTION 1:

John bought a total of 20 oranges and apples for \$9.40. Each orange cost 40 cents and each apple cost 60 cents. How many oranges did he buy?

Question 1: Guess & Check

John bought a total of 20 oranges and apples for \$9.40 Each orange cost 40 cents and each apple cost 60 cents. How many oranges did he buy?

No. of oranges	Cost of oranges (40 cents)	No. of apples	Cost of apples (60 cents)	Total Cost	Check (\$9.40)
	0				
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GUESS AND CHECK

QUESTION 2: In a test, there were a total of 40 questions. For every question answered correctly, a student was awarded 4 points. For each question answered wrongly, 1 point was deducted. If Anna scored 130 points, how many questions did she answer wrongly?

Question 2: Guess & Check In a test, there were a total of 40 questions. For every question answered correctly, a student was awarded 4 points. For each question answered wrongly 1 point was deducted. If Anna scored 130 points, how many questions did she answer wrongly?

Correct answers	Marks awarded	Wrong answers	Marks deducted	Total marks	Check (130 points)
		\bigcirc			

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Answer : <u>6</u> wrong answers



Introduction to Heuristics Word Problems

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RESTATE THE PROBLEM



RESTATE THE PROBLEM

QUESTION 1:

The total cost of 2 tables and 5 chairs is \$2110.50. The total cost of 3 tables and 6 chairs is \$2814. What is the cost of 1 chair?

QUESTION 1: Restate the Problem

The total cost of 2 tables and 5 chairs is \$2110.50. The total cost of 3 tables and 6 chairs is \$2814. What is the cost of 1 chair?

2T + 5C → \$2110.50

 $3T + 6C \rightarrow 2814

1T + 1C → \$2814 - \$2110.50 = \$703.50

 $3T + 3C \rightarrow $703.50 \times 3 = 2110.50

3C → \$2814 - \$2110.50 = \$703.50

1 C → \$703.50 ÷ 3 = \$234.50

The cost of 1 chair is **<u>\$234.50</u>**.



RESTATE THE PROBLEM

QUESTION 2:

4 pens and 7 exercise books cost \$43. 4 pens and 3 exercise books cost \$23. Find the cost of 1 pen.

QUESTION 2: Restate the Problem

4 pens and 7 exercise books cost \$43. 4 pens and 3 exercise books cost \$23. Find the cost of 1 pen.

 $4P + 7E \rightarrow 43 $4P + 3E \rightarrow 23 $4E \rightarrow $43 - $23 = 20 $1E \rightarrow $20 \div 4 = 5 $3E \rightarrow $5 \times 3 = 15 4P → \$23 - \$15 = \$8 1P → \$8 ÷ 4 = \$2 The cost of 1 pen is **\$2**.

$$7E \rightarrow $5 \times 7 = $35$$

OR 4P → \$43 - \$35 = \$8
1P → \$8 ÷ 4 = \$2



RATE OF CHARGES





RATE OF CHARGES

Question 1:

The table shows the parking charges at a carpark.

Car Park Charges	
For the first hour	\$2.50
For every additional $\frac{1}{2}$ hour	\$0.80

Mr Tan parks his car from 11.30 a.m. to 2.00 p.m. How much will he have to pay?

QUESTION 1: Rate of Charges

The table shows the parking charges at a carpark. Mr Tan parks his car from 11.30 a.m. to 2.00 p.m. How much will he have to pay?

Car Park Charges		
For the first hour \$2.50		
For every additional $\frac{1}{2}$ hour	\$0.80	

11.30 a.m. to 12.30 p.m. → First h - \$2.50

12.30 p.m. – 1.30 p.m. \rightarrow 2 x \$0.80 = \$1.60

1.30 p.m. – 2p.m. → \$0.80

Total → \$2.50 + \$1.60 + \$0.80 = **\$4.90**

He has to pay \$4.90

RATE OF CHARGES

QUESTION 2:

PSLE Question

Shanti took a taxi from home to her office. Her taxi fare was based on the charges shown.

First 1 km\$3.20Every additional 400 m or less\$0.22Every 45 seconds of waiting or less\$0.22

The taxi stopped once at a traffic light for 1 min and travelled a total distance of 5.8 km to reach Shanti's office. How much was her taxi fare?

QUESTION 2: Rate of Charges Shanti took a taxi from home to her office. Her taxi fare was based on the charges shown.

First 1 km	\$3.20
Every additional 400 m or less	\$0.22
Every 45 seconds of waiting or less	\$0.22

The taxi stopped once at a traffic light for 1 min and travelled a total distance of 5.8 km to reach Shanti's office. How much was her taxi fare?

5.8 km – 1 km = 4.8 km First 1 km → \$3.20

4.8 km = 4800 m 4800 m ÷ 400 m = 12 (12 additional 400 m in 4800m) For this 4800 m → $0.22 \times 12 = 2.64$ 1 min = 60 s 60 s - 45 s = 15 s → 0.2215 s → 0.22 3.20 + 2.64 + 0.22 + 0.22 = 6.28Her taxi fare was \$6.28.

RATE OF CHARGES

Question 3:

An adult entry ticket to a travel fair costs \$3. For every 4 paying adults, the 5th adult receives a free entry ticket. What is the total cost of the entry tickets for 22 adults?

Question 3: Rate of Charges

An adult entry ticket to a travel fair costs \$3. For every 4 paying adults, the 5th adult receives a free entry ticket. What is the total cost of the entry tickets for 22 adults?

22 ÷ 5 = 4R2 (4 groups of 5 adults with 2 adults remaining) 1 adult \rightarrow \$3

4 adults \rightarrow \$3 x 4 = \$12

(Cost of 1 group of 5 adults will just pay for the cost of 4 adults)

1 group of 5 adults \rightarrow \$12 4 groups of 5 adults \rightarrow \$12 x 4 = \$48 \$48 + \$3 + \$3 = <u>\$54</u> (total cost of 4 groups of 5 adults with 2 adults remaining)

The total cost is <u>\$54</u>.



Problems connected to everyday life

Shortage and Excess



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SHORTAGE AND EXCESS

Question 1:

Raymond wanted to buy 8 T-shirts but he was

short of \$8.10. Instead he bought 5 T-shirts and

had \$12.60 left. How much would he need to pay

for 20 T-shirts?

Question 1 : Shortage & Excess

Raymond wanted to buy 8 T-shirts but he was short of \$8.10. Instead he bought 5 T-shirts and had \$12.60 left. How much would he need to pay for 20 T-shirts?



SHORTAGE AND EXCESS

Question 2:

Ben had a sum of money. He wanted to buy

12 pairs of socks but was short of \$16.

Instead he bought 7 pairs of socks and was

left with \$22.50. What was the cost of 1 pair of

socks?

Question 2 : Shortage & Excess

Ben had a sum of money. He wanted to buy 12 pairs of socks but was short of \$16. Instead he bought 7 pairs of socks and was left with \$22.50. What was the cost of 1 pair of socks?





SHORTAGE AND EXCESS

Question 3:

Mr Lee gives a bag of sweets to each of his students. If he gives 13 sweets to each student, he is short of 39 sweets. If he gives 9 sweets to each student, he is short of 3 sweets.

- (a) How many students does he have?
- (b) How many sweets does he have altogether?

Question 3 : Shortage & Excess

Mr Lee gives a bag of sweets to his students. If he gives 13 sweets to each student, he is short of 39 sweets. If he gives 9 sweets to each student, he is short of 3 sweets.

- (a) How many students does he have?
- (b) How many sweets does he have altogether?

39 - 3 = 36 (The difference in the number of sweets that are short of for both scenarios)

13 - 9 = 4 (The difference in the number of sweets given to each student) $36 \div 4 = \mathbf{9}$

(a) He has <u>9</u> students.

13 x 9 = 117 117 - 39 = **78** (b) He has <u>**78**</u> sweets altogether.



Problems connected to everyday life

RATIO



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RATIO – ONE UNCHANGED QUANTITY

Question 1:

The number of black marbles to the number of white marbles was in the ratio 7 : 5. Mrs Tan gave away 39 black marbles and the ratio of the number of black marbles to the number of white marbles became 3 : 4. How many marbles did she have altogether at first?

Question 1 : Ratio (One Unchanged Quantity)

The number of black marbles to the number of white marbles was in the ratio 7 : 5. Mrs Tan gave away 39 black marbles and the ratio of the number of black marbles to the number of white marbles became 3 : 4. How many marbles did she have altogether at first?

Before: B : W $4 \times 7 : 5 \times 4$ $28 : 20 \times 4$ 28 u - 15 u = 13 u (difference in units of black marbles) 13 units = 39 $1 unit = 39 \div 13 = 3$ $48 units = 48 \times 3 = 144$ (Altogether at first) After: B : W (No change in white marbles) $5 \times 7 \cdot 3 : 4 \times 5$ $15 : 20 \times 5$ 28 u + 20 u = 48 u (total at first) She had 144 marbles altogether at first.

RATIO – UNCHANGED TOTAL

Question 2:

The ratio of the number of pupils in Room A to the number of pupils in Room B was 5 : 7. Then 36 pupils from Room A moved to Room B. The ratio of the number of pupils in Room A to the number of pupils in Room B became 1 : 3. How many pupils were there in Room A in the end?

Question 2 : Ratio (Unchanged Total)

The ratio of the number of pupils in Room A to the number of pupils in Room B was 5 : 7. Then 36 pupils from Room A moved to Room B. The ratio of the number of pupils in Room A to the number of pupils in Room B became 1 : 3. How many pupils were there in Room A in the end?

Before A : B : T 5:7:12 9u - 7u = 2u2u = 36 $3 \text{ u} = \frac{36}{2} \text{ x} 3$ = 54

After
A : B : T

$$3 \times \begin{array}{c} 1 & : & 3 \\ 3 & : & 9 \end{array} \begin{array}{c} : & 7 \\ & & 3 \\ : & 1 \end{array} \begin{array}{c} (No \ change \ in \ total) \\ & & : 12 \end{array}$$

There were 54 pupils in Room A in the end.

RATIO – UNCHANGED DIFFERENCE

Question 3:

John had some blue paper clips and red paper clips in the ratio of 5 : 7. He then bought 15 blue and 15 red paper clips. The ratio of the number of blue paper clips to the number of red paper clips became 3:4. How many paper clips did he have in all at first?

Question 3 : Ratio (Unchanged Difference)

John had some blue paper clips and red paper clips in the ratio of 5 : 7. He then bought 15 blue and 15 red paper clips. The ratio of the number of blue paper clips to the number of red paper clips became 3:4. How many paper clips did he have in all at first?

Before B : R : D5:7:2 8u - 7u = 1u1u = 155u + 7u = 12u12 u = 15 x 12= 180

After
B : R : D

$$^{2 \times}$$
 3 : 4 $^{2 \times 2}$: 1 $^{2 \times 2}$: 2 $^{2 \times 2}$

(No change in difference)

John had <u>180</u> paper clips at first.



The word problems involve the following types:

- **One Unchanged Quantity**
- Unchanged Total
- **& Unchanged Difference**





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A group of 40 students were asked to choose their favourite colour. The data was tallied in the table below.

Red	Blue	Yellow	Green	Orange
10	6	4	8	12

	Statement			True	False	Not Possible to Tell
а	10 students chose orange as their favorite colour.				\checkmark	
b	The fraction of the system yellow is $\frac{1}{2}$	students who chos 10 + 6 + 4 = 20 20 is half of 40	e red, blue and	~		

50 students participated in an origami paper folding competition. The table shows the number of students with the timings they clocked.



Andy and Betty were given some coins each. Andy was given 5 more coins than Betty. Andy was given twenty-cent coins and Betty was given fifty-cent coins.

	Statement	True	False	Not Possible to Tell
a)	Betty gets fewer number of coins than Andy	\checkmark		
b)	The amount of money given to Andy was more than the amount of money given to Betty			\checkmark





Problems connected to everyday life

Mixed Topics



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MIXED TOPICS- FRACTIONS & PERCENTAGE

Question 1:

At a carnival, $\frac{1}{10}$ of the balloons burst and 35% of the balloons were given to some children. There were 220 balloons left. How many balloons were were there at first?

Question 1 : Mixed Topics – Fractions & Percentage

At a carnival, $\frac{1}{10}$ of the balloons burst and 35% of the balloons were given to some children. There were 220 balloons left. How many balloons were were there at first?

$\frac{1}{10} \rightarrow 10\%$	55 % → 220
100% - 10% - 35%	1% → 220 ÷ 55 = 4
= 55% (left)	$100\% \rightarrow 100 \times 4 = 400$

There were **<u>400</u>** balloons at first.

MIXED TOPICS- RATIO & PERCENTAGE

Question 2:

PSLE Question

- There were a total of 263 strawberry buns and blueberry buns in Uncle Lim's bakery. For the whole day, 41 strawberry buns and 20% of the blueberry buns were sold. At the end of the day, the ratio of the number of strawberry buns to blueberry buns he had was 1:4.
- (a) Express the number of blueberry buns sold as a fraction. (Give your answer in the simplest form.)
- (b) What was the number of buns Uncle Lim had at the end of the day?

Question 2 : Mixed Topics – Ratio & Percentage

There were a total of 263 strawberry buns and blueberry buns in Uncle Lim's bakery. For the whole day, 41 strawberry buns and 20% of the blueberry buns were sold. At the end of the day, the ratio of the number of strawberry buns to blueberry buns he had was 1:4.

- (a) Express the number of blueberry buns sold as a fraction. (Give your answer in the simplest form.)
- (b) What was the number of buns Uncle Lim had at the end of the day?

$$20\% \rightarrow \frac{20}{100}$$

$$= \frac{1}{5}$$
(a) The fraction was $\frac{1}{5}$.

$$B = eft = ef$$

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was **185**.

MIXED TOPICS- PERCENTAGE & AVERAGE

Question 3:

PSLE Question

The bar graph shows the number of books read by Class 6A from January to April. The number of books read is not shown on the scale.



(a) What was the percentage increase in the number of books read from January to February?

(b) The average number of books read in a month from January to April was 75. How many books did Class 6A read in April?

Question 3 : Mixed Topics – Percentage & Average

The bar graph shows the number of books read by Class 6A from January to April. The number of books read is not shown on the scale



PSLE Question

- (a) What was the percentage increase in the number of books read from January to February?
- (b) The average number of books read in a month from January to April was 75. How many books did Class 6A read in April?

(a) $\frac{10}{10}$ x 100% = 100%

The percentage increase was 100%

(b) $75 \times 4 = 300$ (total books) 10 + 20 + 8 + 22 = 60 $300 \div 60 = 5$ $22 \times 5 = 110$

Class 6A read 110 books in April.



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Latest CP Submitted School Latest CP Submission Time Name Basco, ***** 10:07, 2023-Mar-29 UST Angelicum College 3 Papa, L***** R Cembo Elementary School 10:07, 2023-Mar-29 1 Ahmed U***** Madrasah Wak Tanjong Al-Islamiah 10:07, 2023-Mar-29 2 Berbano***** West Rembo Elementary School 10:07, 2023-Mar-29 \Leftrightarrow 0 0 °lo 0 ZIF















Primary 2 Change Level	🔶 0 / 54		Numbers to 1000		ProficiencyHigh Score%★ ★ ★
		High Score	Skill Name	Difficulty	Tutorial
Numbers to 1000	1		Use base ten blocks to read and write numbers to 1000	1 1111	Practice
Numbers to 1000 (High Ability)					
Addition & Subtraction within 1000	2		Count on by 1s to 1000	1	Practice
Addition & Subtraction within 1000 (High Ability)	3		Count on by 10s to 1000	<u>ۆ</u> ۈۈۈ ر	Practice
Length					
Multiplication and Division	4		Count on by 100s to 1000	,,,,,,	Practice
Multiplication Tables of 2, 5 and 10	5		Compare numbers to 1000	, ,,,,,	Practice
Mass Time	6		Identify the greatest or the smallest number from a given number list	,)))))	Practice
Measurement (High Ability)	7		Idenffy odd and even numbers	j	Practice
Models					
Models (High Ability)	8		Write numbers to 1000 in numerals	11	Practice
Multiplication Tables of 3 and 4					
Multiplication & Division (High Ability)	9		Write numbers to 1000 in words	<i>ۇۋۇلۇر</i>	Practice
Money	10		Use place value charts to show numbers to 1000		Dractice









