







26 April 2024





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Thank you for your understanding.



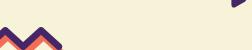




 To see how Mathematics is connected to everyday life.



 To introduce strategies used to solve word problems.









Introduction to Mathematics
Curriculum
Framework



CONTENTS OF WORKSHOP





Introduction to Heuristics Word Problems

- Guess and Check
- Restate the Problem

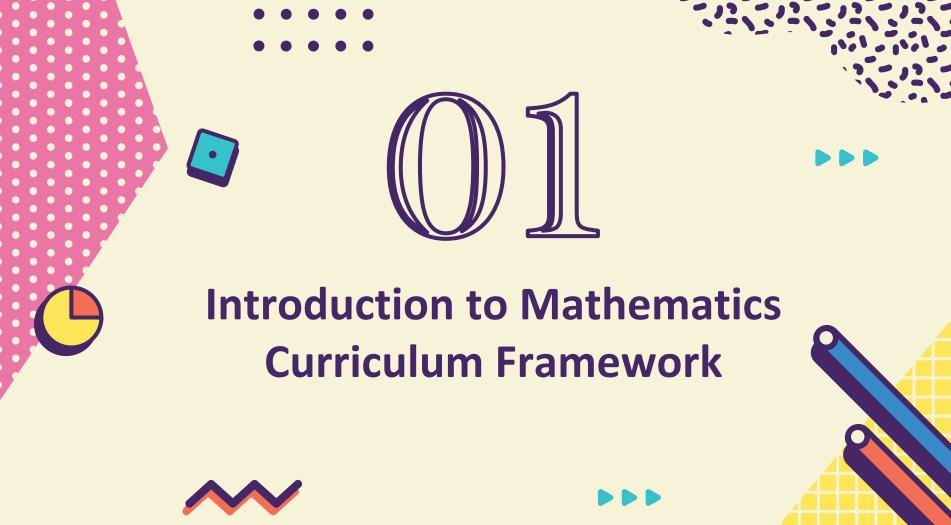


Problems connected to everyday life

- Rate of Charges
- Shortage and Excess
 - Ratio
- 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

Concepts

Understanding of the properties and relationships, operations and algorithms

Competencies in abstracting and reasoning, representing and communicating, applying and modelling









Mathematics

connected to

develops

Everyday Life

Acquire mathematical concepts and skills for everyday use

Logical Reasoning

Develops thinking, reasoning and communication skills





Syllabus Organisation

3 Content Strands		
Number and Algebra	Measurement and Geometry	Statistics





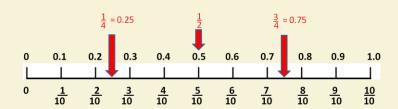


NUMBER AND ALGEBRA



 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









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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.

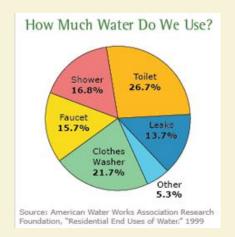


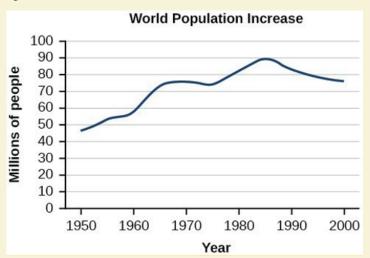




STATISTICS

 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









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STRATEGY

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





JUNYUAN PRIMARY SCHOOL MATHEMATICS
STAR SEE ~ THINK ~ ACT ~ RELOOK
P5
NAME: () CLASS: P5



STRATEGY



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



Key Questions to ask when solving a problem

See (What is given?)	Think (What is my plan?)
1. Can I retell the problem in my own words? 2. What am I asked to find? 3. What are the key words? 4. 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?)	Relook (Reflect and Check)
1. Can I carry out my plan?	
Can I show the steps correctly?	1. Does my method make sense?
Can I show the steps clearly?	2. 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?
	6. Can I ask another question?
	7. Can I write a similar problem?



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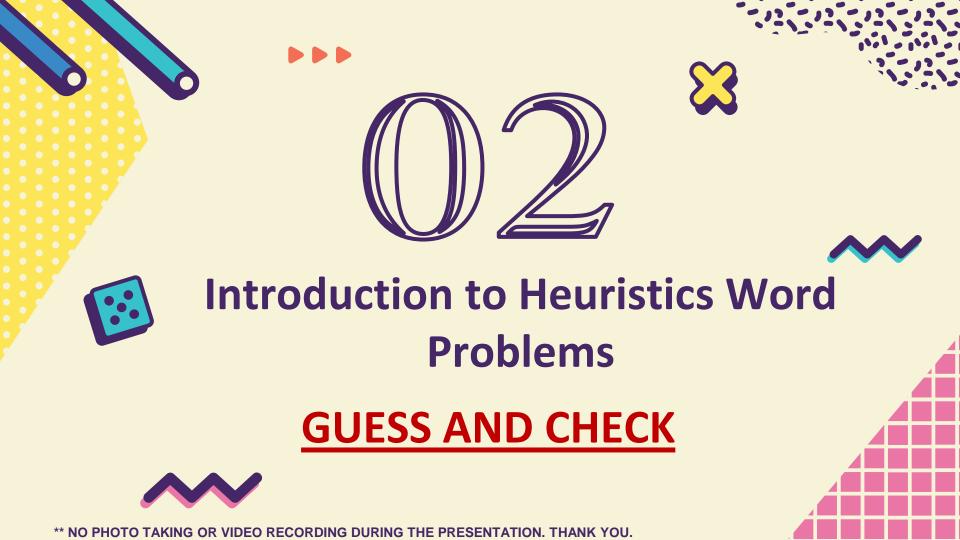
STRATEGY

- STAR approach
 - S ee 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 act it out? 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) C O U R T			



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?

^{**} NO PHOTO TAKING OR VIDEO RECORDING DURING THE PRESENTATION. THANK YOU.

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)
10	10 x \$0.40 = \$4	10	10 x \$0.60 = \$6	\$4 + \$6 = \$10	×
11	11 x \$0.40 = \$4.40	9	9 x \$0.60 = \$5.40	\$4.40 + \$5.40 = \$9.80	×
13	13 x \$0.40 = \$5.20	7	7 x \$0.60 = \$4.20	\$5.20 + \$4.20 = \$9.40	✓

Answer: 13 oranges

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?

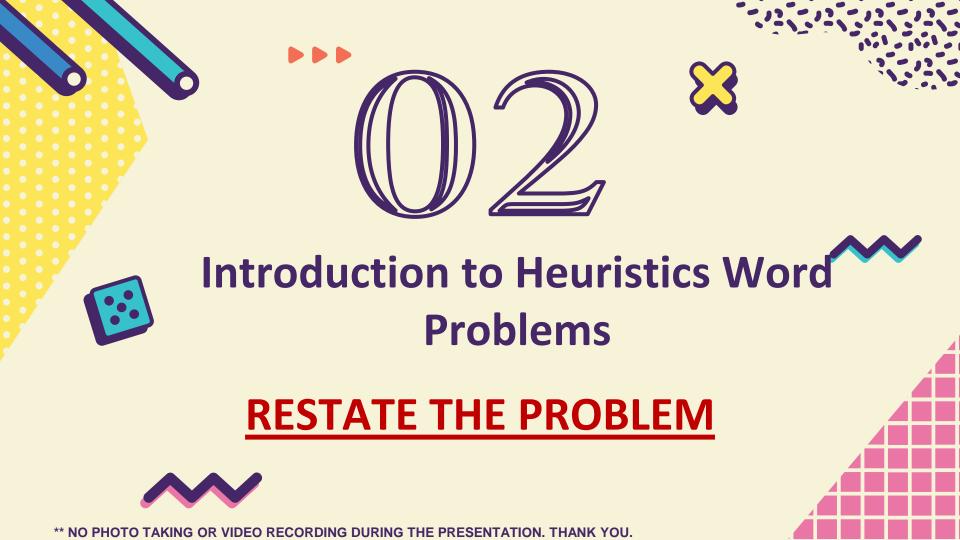
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Question 2: Guess & Check

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)
20	20 x 4 = 80	20	20 x 1= 20	80 – 20 = 60	×
30	30 x 4 = 120	10	10 x 1= 10	120 – 10 = 110	×
34	34 x 4 = 136	6	6 x 1= 6	136 – 6 = 130	√

Answer: 6 wrong answers



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?

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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?

$$2T + 5C \rightarrow $2110.50$$

$$3T + 6C \rightarrow $2814$$

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

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

$$3C \rightarrow $2814 - $2110.50 = $703.50$$

$$1 \text{ C} \rightarrow \$703.50 \div 3 = \$234.50$$

The cost of 1 chair is **\$234.50**.







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.

$$4P + 7E \rightarrow $43$$

$$4P + 3E \rightarrow $23$$

$$4E \rightarrow $43 - $23 = $20$$

$$1E \rightarrow $20 \div 4 = $5$$

$$3E \rightarrow $5 \times 3 = $15$$

$$4P \rightarrow $23 - $15 = $8$$

$$1P \to \$8 \div 4 = \$2$$

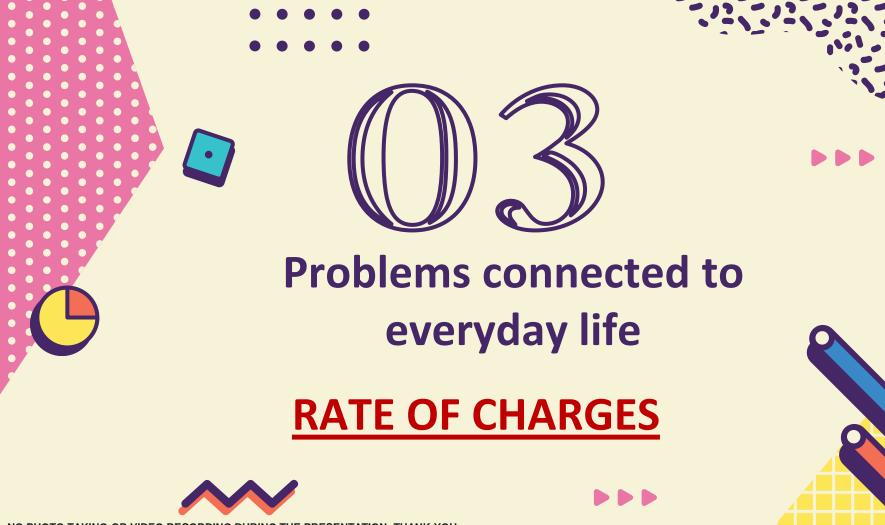
The cost of 1 pen is **\$2**.



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

$$PR ext{ } 4P ext{ } \Rightarrow $43 - $35 = $8$$

$$1P \to \$8 \div 4 = \$2$$







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 ¹ / ₂ hour	\$0.80	

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

$$12.30 \text{ p.m.} - 1.30 \text{ p.m.} \rightarrow 2 \text{ x } \$0.80 = \$1.60$$

1.30 p.m. – 2p.m.
$$\rightarrow$$
 \$0.80

Total
$$\rightarrow$$
 \$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	\$3.20
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?

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
$$\rightarrow$$
 \$3.20

4.8 km = 4800 m

 $4800 \text{ m} \div 400 \text{ m} = 12 \text{ (12 additional } 400 \text{ m in } 4800 \text{ m)}$

For this 4800 m \rightarrow \$0.22 x 12 = \$2.64

1 min = 60 s

 $60 \text{ s} - 45 \text{ s} = 15 \text{ s} \rightarrow \0.22

15 s + \$0.22

\$3.20 + \$2.64 + \$0.22 + \$0.22 = **\$6.28**

Her 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 = \$54 (total cost of 4 groups of 5 adults with 2 adults remaining)

The total cost is \$54.



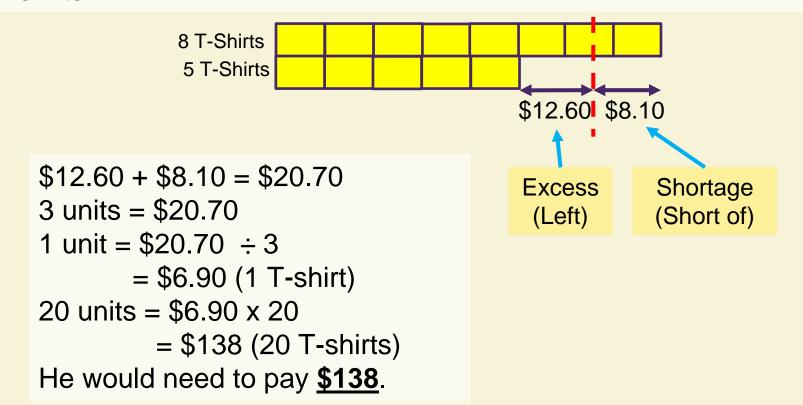


SHORTAGE AND EXCESS

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.

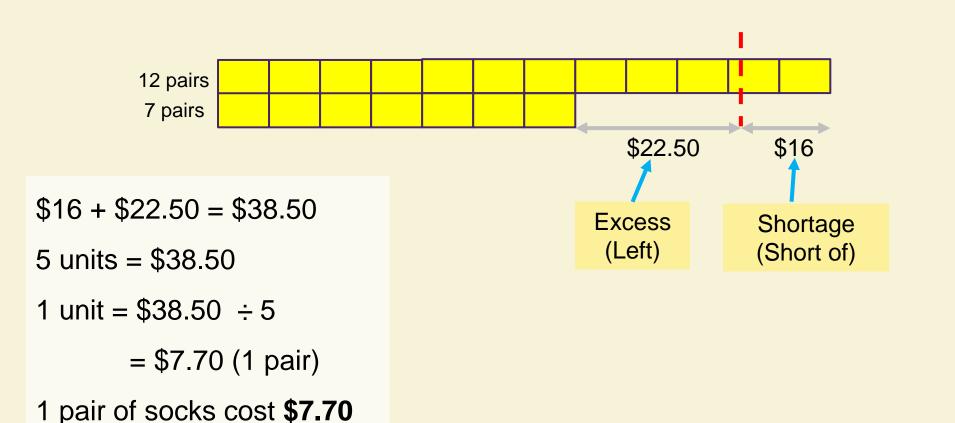
Instead he bought 7 pairs of socks and was

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)

$$36 \div 4 = 9$$

(a) He has **9** students.

$$13 \times 9 = 117$$

$$117 - 39 = 78$$

(b) He has **78** sweets altogether.







RATIO – ONE UNCHANGED QUANTITY

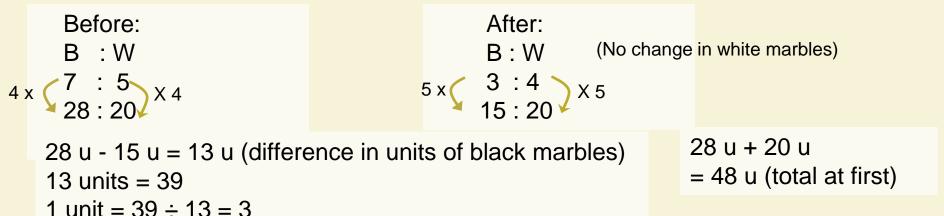
Question 1:

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)

48 units = $48 \times 3 = 144$ (Altogether at first)

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?



She had 144 marbles altogether at first.



E

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?

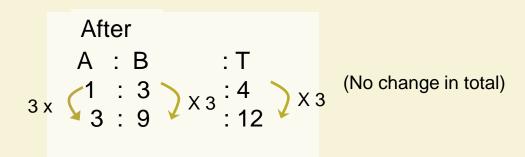
Before

A : B : T

5:7:12

$$9u - 7u = 2 u$$

 $2u = 36$
 $3 u = \frac{36}{2} \times 3$
 $= 54$



There were <u>54</u> 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)

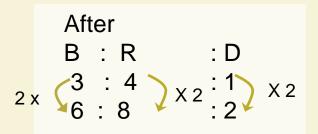
John had some blue paper clips and red paper clips in the ratio of 5:7. He then bought 15 blue and 15 red paper clips. The ratio of the number of blue paper clips to the number of red paper clips became 3:4. How many paper clips did he have in all at first?

Before

B:R:D 5:7:2

$$8u - 7u = 1u$$

 $1u = 15$
 $5u + 7u = 12u$
 $12u = 15 \times 12$
 $= 180$



(No change in difference)

John had 180 paper clips at first.



CHANGING RATIO

Question 4:

The ratio of the number of green apples to the number of red apples in a basket was 2:3.

48 new red apples were put into the basket and the ratio of the number of green apples to the number of red apples became 4:9.

How many apples were in the basket at first?

Question 4 : Ratio (One Unchanged Quantity)

The ratio of the number of green apples to the number of red apples in a basket was 2:3. 48 new red apples were put into the basket and the ratio of the number of green apples to the number of red apples became 4:9. How many apples were in the basket at first?

Before: G:R 2 x 2 : 3 X 2

After: G: R 4: 9

(No change in number of green apples)

```
9u - 6u = 3u

3u = 48

1u = 16

4u + 6u = 10u (units for apples at first)

10 \times 16 = \underline{160}
```

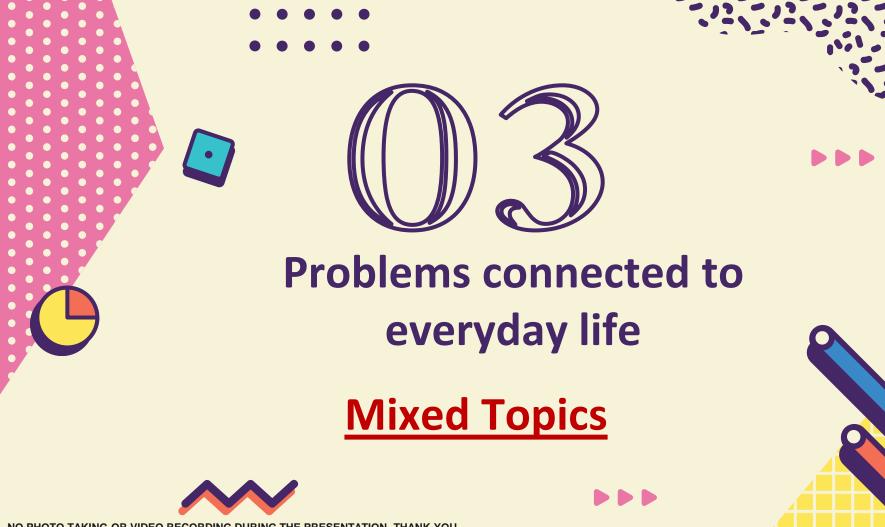
There were <u>160</u> apples in the basket at first.





The word problems involve the following types:

- One Unchanged Quantity
- Unchanged Total
- Unchanged Difference





3

MIXED TOPICS- RATIO & PERCENTAGE

Question 1:

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 1: 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 left left left left sold
S left Sold
$$6u = 263 - 41$$

$$= 222$$

$$5u = \frac{5}{6}x \ 222$$

$$= 185$$

(b) The number was 185.





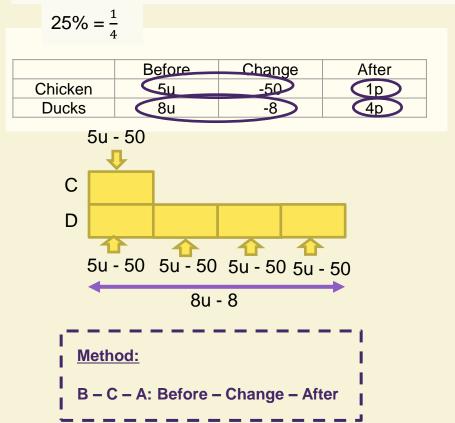
MIXED TOPICS- FRACTIONS & PERCENTAGE

Question 2:

A farmer had $\frac{5}{8}$ as many chickens as ducks at first. After selling 50 chickens and 8 ducks, he had 25% as many chickens as ducks. How many ducks did the farmer have at first?

Question 2: Mixed Topics - Fractions & Percentage

A farmer had $\frac{5}{8}$ as many chickens as ducks at first. After selling 50 chickens and 8 ducks, he had 25% as many chickens as ducks. How many ducks did the farmer have at first?



$$20u - 200 = 8u - 8$$

$$20u - 8u = 200 - 8$$

$$1u = \frac{192}{12}$$

The farmer had 128 ducks at first.



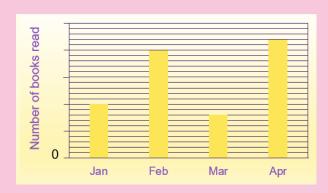


MIXED TOPICS- PERCENTAGE & AVERAGE

Question 3:

PSLE Question

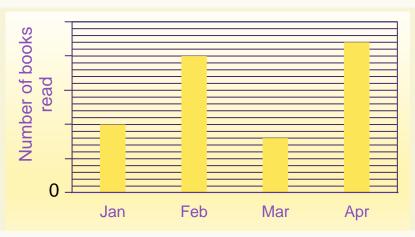
The bar graph shows the number of books read by Class 6A from January to April. The number of books read is not shown on the scale.



- (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.





Name	School	Latest CP	Submission Time
Basco, *****	UST Angelicum College	3	10:07, 2023-Mar-29
Papa, L****		1	10:07, 2023-Mar-29
Ahmed U****	Madrasah Wak Tanjong Al-Islamiah	2	10:07, 2023-Mar-29
Berbano****	West Rembo Elementary School	1	10:07, 2023-Mar-29
Melcome co			







Daily Challe nge



Daily Challenge - Math

10 personalized questions per day

Opening Hours:

6am to 10pm, Monday to Saturday

Total Qns

Rewards

17 CPs (Full Score)

Start Challenge



Super Vision Challenge

Opening Hours:

6am to 10pm, Monday to Saturday

Score of the Week

5

Start Challenge



Super Speed Challenge

Opening Hours:

6am to 10pm, Monday to Saturday

Score of the Week

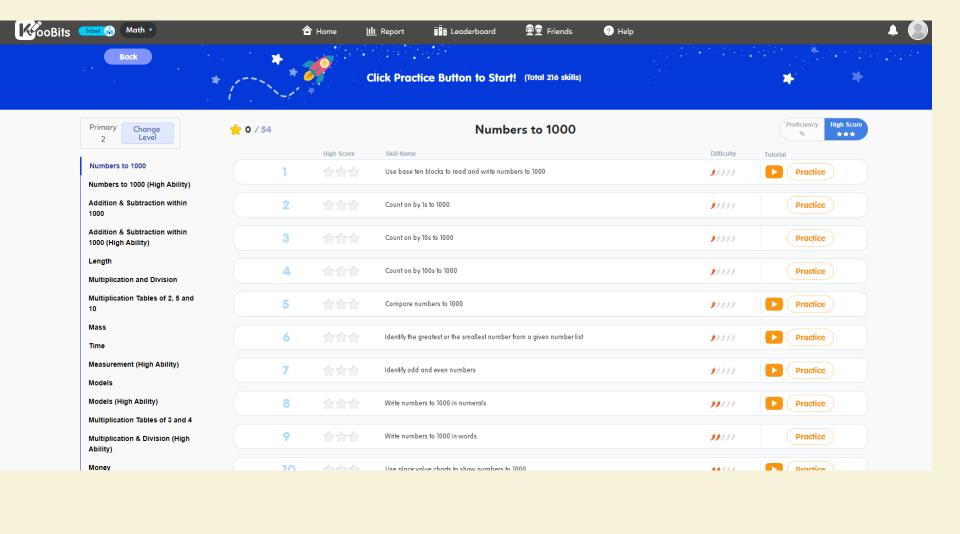
S

Start Challenge













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





