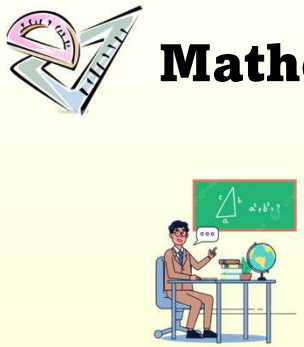
Primary 3 & Primary 4
Assessment and Curriculum Sharing

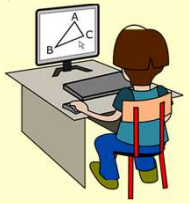
Mathematics



Mathematics Curriculum Framework

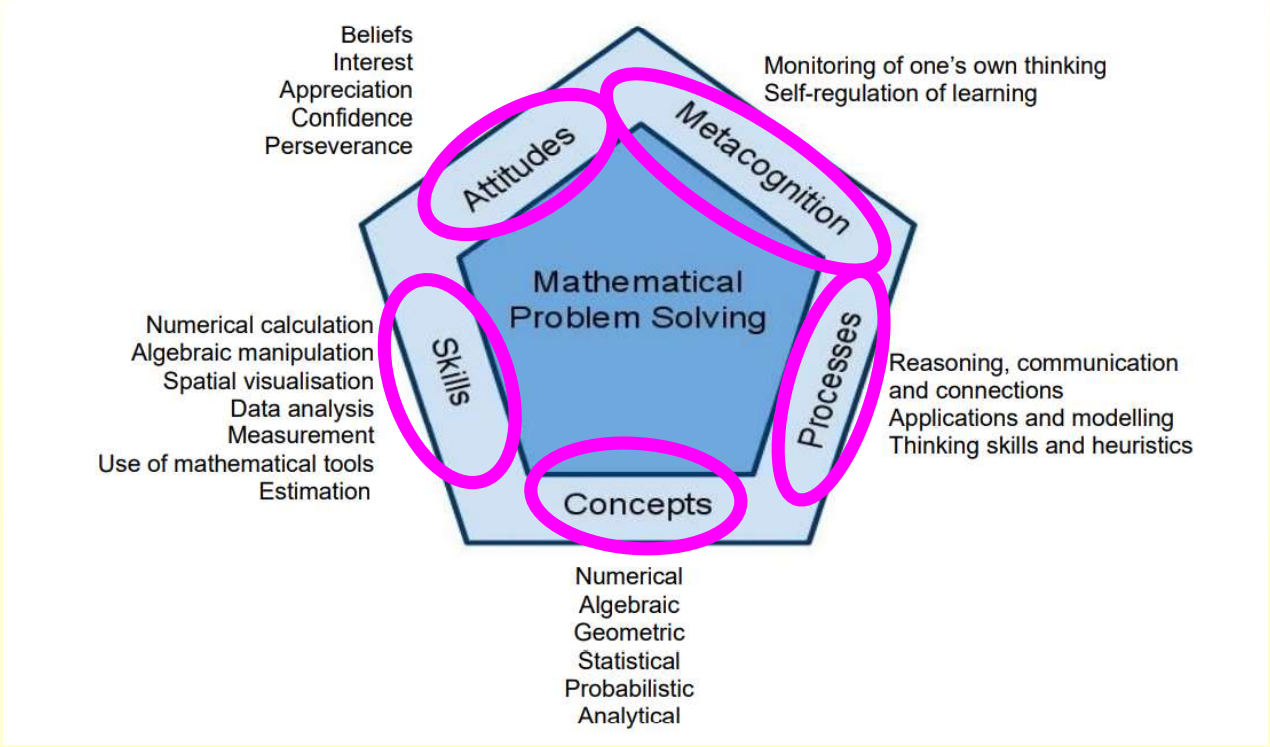
Learning Mathematics at Rivervale

Strategies to support students in learning Mathematics



Assessment Matters for Primary 3 & 4 Mathematics

Mathematics Curriculum Framework



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2013 Math Syllabus For Primary 4

Primary 3	Primary 4
Whole Numbers To 10 000	Whole Numbers To 100 000
Addition & Subtraction Within 10 000	Factors & Multiples
Multiplication Tables of 6, 7, 8 & 9	Four Operations of Whole Numbers
Multiplication & Division	Fractions
Money	Angles
Length, Mass & Volume	Squares & Rectangles
Time	Decimals
Fractions	Four Operations of Decimals
Angles	Symmetry
Perpendicular & Parallel Lines	Area & Perimeter
Area & Perimeter	Tables & Line Graphs
Bar Graphs	Time

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2021 Math Syllabus For Primary 3

Whole Numbers To 10 000

Addition & Subtraction Within 10 000

Money

Multiplication Tables of 6, 7, 8 & 9

Multiplication & Division

More Word Problems

Bar Graphs

Angles

Perpendicular & Parallel Lines

Fractions

Length

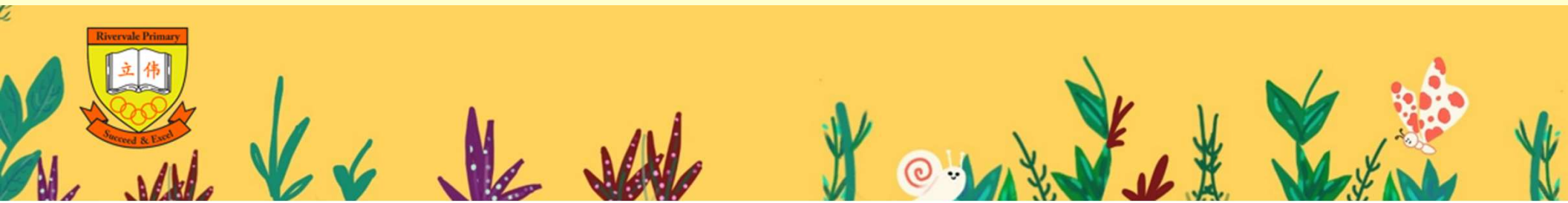
Mass

Volume

Area & Perimeter

More Word Problems

Time



MATHEMATICS SYLLABUS

Primary One to Six

Implementation starting with
2013 Primary One Cohort

PRIMARY THREE	
NUMBER AND ALGEBRA	
SUB-STRAND: WHOLE NUMBERS	
1. Numbers up to 10 000	**Students should have opportunities to:**
1.1 counting in hundreds/th 1.2 number notation, repres values (thousands, hun 1.3 reading and writing num words 1.4 comparing and ordering 1.5 patterns in number sequ	

PRIMARY FOUR	
NUMBER AND ALGEBRA	
SUB-STRAND: WHOLE NUMBERS	
1. Numbers up to 100 000	**Students should have opportunities to:**
1.1 number notation, representations and place values (ten thousands, thousands, hundreds, tens, ones) 1.2 reading and writing numbers in numerals and in	(a) work in groups to - look for examples of big numbers up to 100 000 from newspapers and magazines. - estimate a big number (e.g. the seating capacity of the Singapore Indoor Stadium) and discuss how the estimation is done. ng number discs/number line to represent and compare numbers. rds to illustrate and explain place values e.g. the digit 3 stands for 30 000, depending on where it appears in a number. place-value cards to compare numbers digit by digit from left to right, and use 'greater than', 'greatest', 'smaller than', 'smallest' and 'the same as' to arison. or digital manipulatives to represent a number that is 10, 100 or 1000 more digit number.

Mathematics

- 2021 Mathematics Syllabus (Primary 1 to 3) (886KB)
- 2013 Mathematics Syllabus (Primary 1 to 6) (777KB)

https://www.moe.gov.sg/primary/curriculum/syllabus

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Learning

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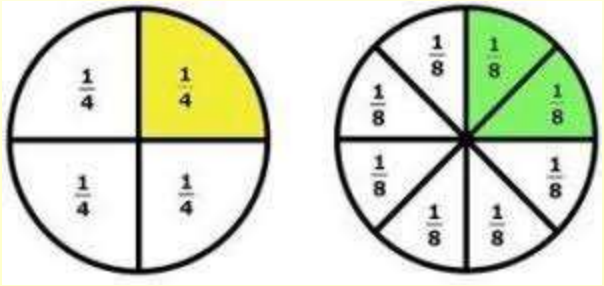
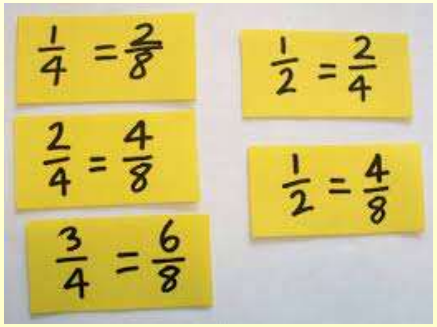
Learning Experiences

How students learn mathematics really matter.

Concrete-Pictorial-Abstract (C-P-A) Approach

Concrete → **Pictorial** → **Abstract**





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S

Study the problem (CUB)

- **Circle** the numbers
- **Underline** the keywords
- **Box up** the question

T

Think of a strategy

- Draw models
- Draw diagrams
- Draw a table
- Listing
- Guess and Check
- Act it out
- Work backwards
- Simplify the problem

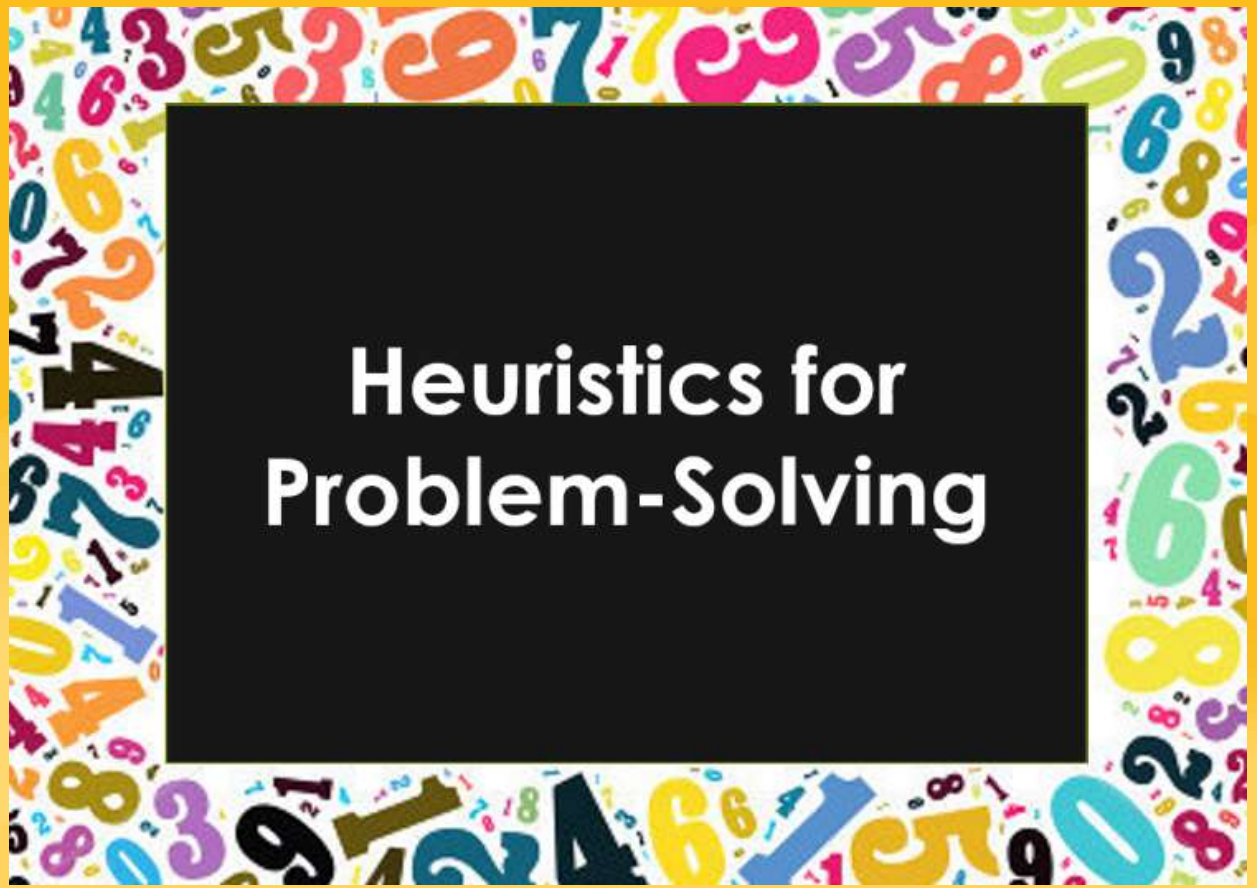
A

Act out the strategy

R

Review the solution (CURT)

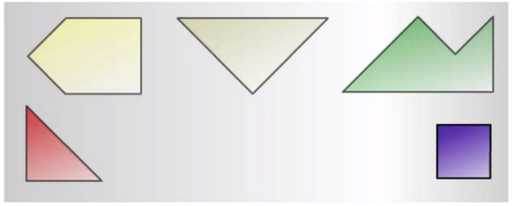
- **C**alculations
- **U**nits
- **R**easonable
- **T**ransference



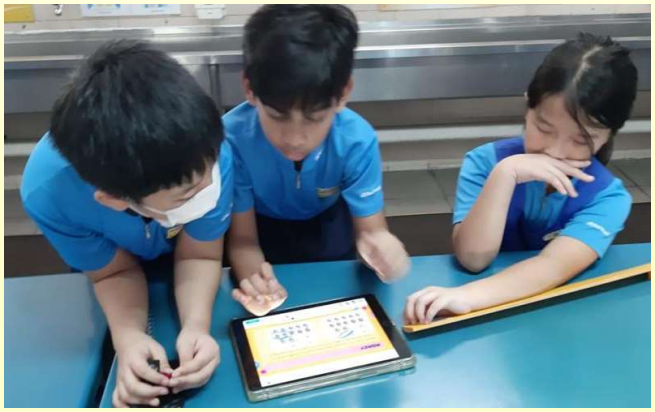
Solve challenging and non-routine problems

Maths Trail

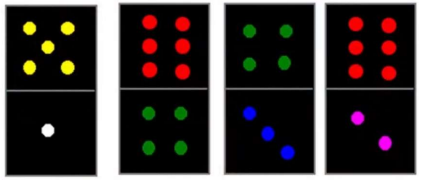
Tangram challenge



Make a square using all 5 pieces of this tangram



Dominoes Challenge



Use these dominoes to create a square with the same number of dots on each side!

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How to support your child in learning

What Can I Do As A Parent?

- **Active involvement in child's school work**

Ask your child to talk about and teach you math.

Use math with your child in daily life.

Communicate with your child's teacher.

Promote a positive attitude to math. Develop a growth mindset.

Ensure that homework is completed neatly and all doubts clarified.

Mathematics Matters In Everyday Life

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5GB	
100 mins Talktime & 100 SMS Free Weekend Local Data	
Plan $48.00/mth	Phone $748.00

30GB	
300 mins Talktime & 300 SMS Free Weekend Local Data	
Plan $78.00/mth	Phone $478.00

- **Which mobile phone best suits our needs?**
- **Which mobile plan to subscribe to?**
- **To purchase a mobile phone with a plan or without?**

Involve your child in supermarket math

Estimate mass of fruits and vegetables before weighing.

Compare different sizes. Discuss best value for money or even why people may buy the more expensive option.

Compare different brands, find the best value for money!

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How to study Mathematics?

1. **Master basic arithmetic skills – Mathematical Fluency**

2. **Practise, practise and practise (and check): Set time limit**

3. **Review mistakes and LEARN from mistakes:**

   misread, transfer error,

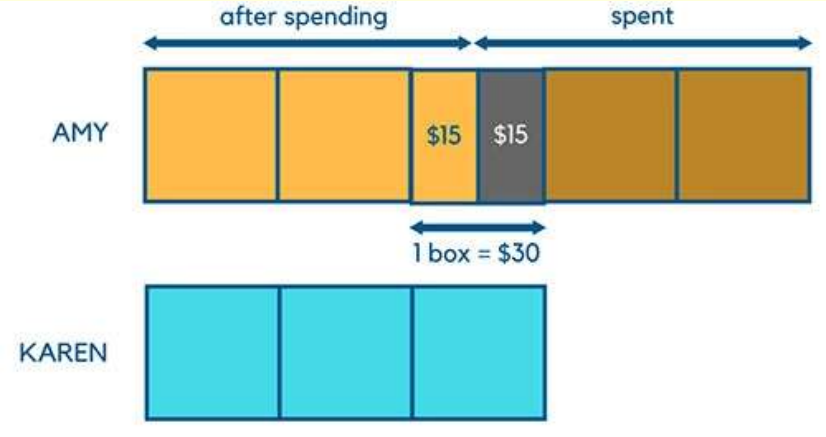
   computational/precision errors,

   conceptual understanding

   - E.g.: look through Topical Review worksheets, workbook

How to study Mathematics?

4 Allow students to struggle in problem solving, focusing on model drawing as one of the key tools.



KooBits®

- **Encourage self-directed learning**

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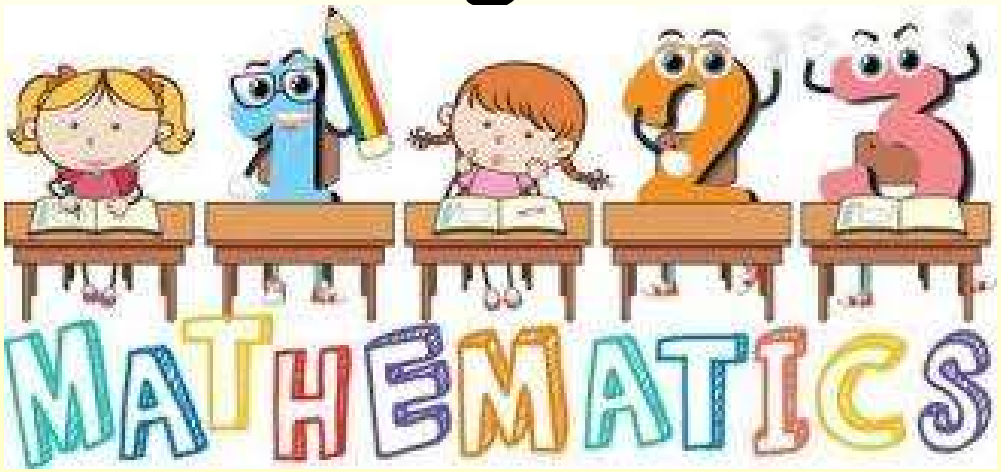
Communicating effectively in



Concerns on Primary 3 & 4 Whole Numbers

Fluency & Mastery in Multiplication Tables

2 3 4 5 **6 7 8 9** 10

1 x 6 = 6	1 x 7 = 7	1 x 8 = 8	1 x 9 = 9
2 x 6 = 12	2 x 7 = 14	2 x 8 = 16	2 x 9 = 18
3 x 6 = 18	3 x 7 = 21	3 x 8 = 24	3 x 9 = 27
4 x 6 = 24	4 x 7 = 28	4 x 8 = 32	4 x 9 = 36
5 x 6 = 30	5 x 7 = 35	5 x 8 = 40	5 x 9 = 45
6 x 6 = 36	6 x 7 = 42	6 x 8 = 48	6 x 9 = 54
7 x 6 = 42	7 x 7 = 49	7 x 8 = 56	7 x 9 = 63
8 x 6 = 48	8 x 7 = 56	8 x 8 = 64	8 x 9 = 72
9 x 6 = 54	9 x 7 = 63	9 x 8 = 72	9 x 9 = 81
10 x 6 = 60	10 x 7 = 70	10 x 8 = 80	10 x 9 = 90

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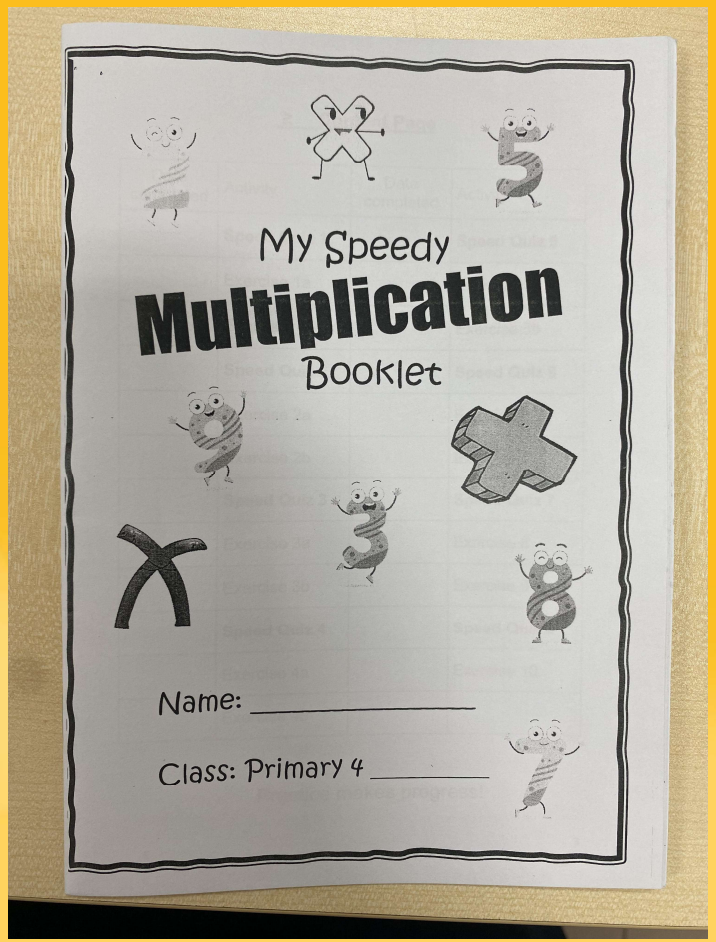

Reduce Cognitive load

Fast and accurate

Solve deeper and more meaningful problems

Concerns on Primary 4 Whole Numbers

Fluency & Mastery in Multiplication Tables

Factors

36

1 x 36

2 x 18

3 x 12

4 x 9

6 x 6

The factors of 36 are:

smallest 1, 2, 3, 4, 6, 9, 12, 18 and 36 biggest

Multiples

2, 4, 6, 8, 10, 12, ...

3, 6, 9, 12, 15, 18, ...

6, 12, 18, 24, 30, ...

6 is a common multiple of 2, 3, 6

36 is a (common) multiple of 2, 3, 4, 6, 9, 12, 18, 36

Factor 6 30 **Multiple**

6 is a factor of 30

30 is a multiple of 6

Is 3 a factor of 43? No

Is 3 a factor of 54? Yes

Is 56 a multiple of 9? No

Main consideration:

Is the given (big) number divisible by the (small) number?

Fractions

Common Errors

Wrong presentation / use of "=“ sign

Example 1: When finding equivalent fractions of $\frac{2}{3}$

$\frac{2}{3} \times 2 = \frac{4}{6}$ **x**

$\frac{2 \times 2}{3 \times 2} = \frac{4}{6}$ ✓

Example 2: $\frac{2}{3} + \frac{1}{6} = ?$

Correct way?

Break up the steps

$\frac{2}{3} = \frac{2 \times 2}{3 \times 2} = \frac{4}{6} + \frac{1}{6} = \frac{5}{6}$ **x**

$\frac{2}{3} = \frac{2 \times 2}{3 \times 2} = \frac{4}{6}$

$\frac{4}{6} + \frac{1}{6} = \frac{5}{6}$

Fractions

Common Errors

- **Wrong use of mathematical symbol "=" sign**

$\frac{2}{9}$ of a basket of durians are rotten. If there are 180 rotten durians, how many durians are there in the basket ?

Error : $\frac{2}{9} = 180$

$\frac{1}{9} = 180 \div 2 = 90$

$\frac{9}{9} = 90 \times 9 = \underline{810}$

Total parts = 9 units

2 units = 180

1 unit = 180 ÷ 2 = 90

Total (9 units) = 9 x 90

= <u>810</u> ✓

Correct : $\frac{2}{9}$ (of basket) = 180

$\frac{1}{9}$ (of basket) = 180 ÷ 2

= 90

$\frac{9}{9}$ (of basket) = 90 x 9

= <u>810</u> ✓

Fractions

Common Errors

- **Misreading /Using the information wrongly**

Mrs Wong had 12 kg of rice. She used ¾ of it. (12 kg)
How much rice had she left?

Common answer:

12 – ¾ = 11 ¼ kg X

[Misread ¾ of it as ¾ kg!]

Correct answer:

Used → ¾ x 12 = 9 kg
Left → 12 – 9 = 3 kg

Alternatively,
Fraction left → 1 – ¾ = ¼
¼ x 12 kg = 3 kg

Assessment Matters for Primary 3 & 4 Mathematics

Primary 3 Mathematics Format & Duration

Level	Total Marks	Total Number of questions	MCQ / SAQ		LAQ		Duration
			Number of questions	Marks per question	Number of questions	Marks per question	
P3	50	25 - 30	20 - 27	1 - 2	3 – 5	3 – 4	**1 h 30 min**

Primary 4 Mathematics Format & Duration

Booklets	ITEM TYPE	NO. OF Questions	MARKS PER QUESTION	MARKS PER Section
Section A	MCQ	20	20 x 2 mk	40 mk
Section B	Short-answer	20	20 x 2 mk	40 mk
Section C	Structured/ Long-answer	6	5 x 4 mk	20 mk
TOTAL		46		100 marks


Thank You!
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