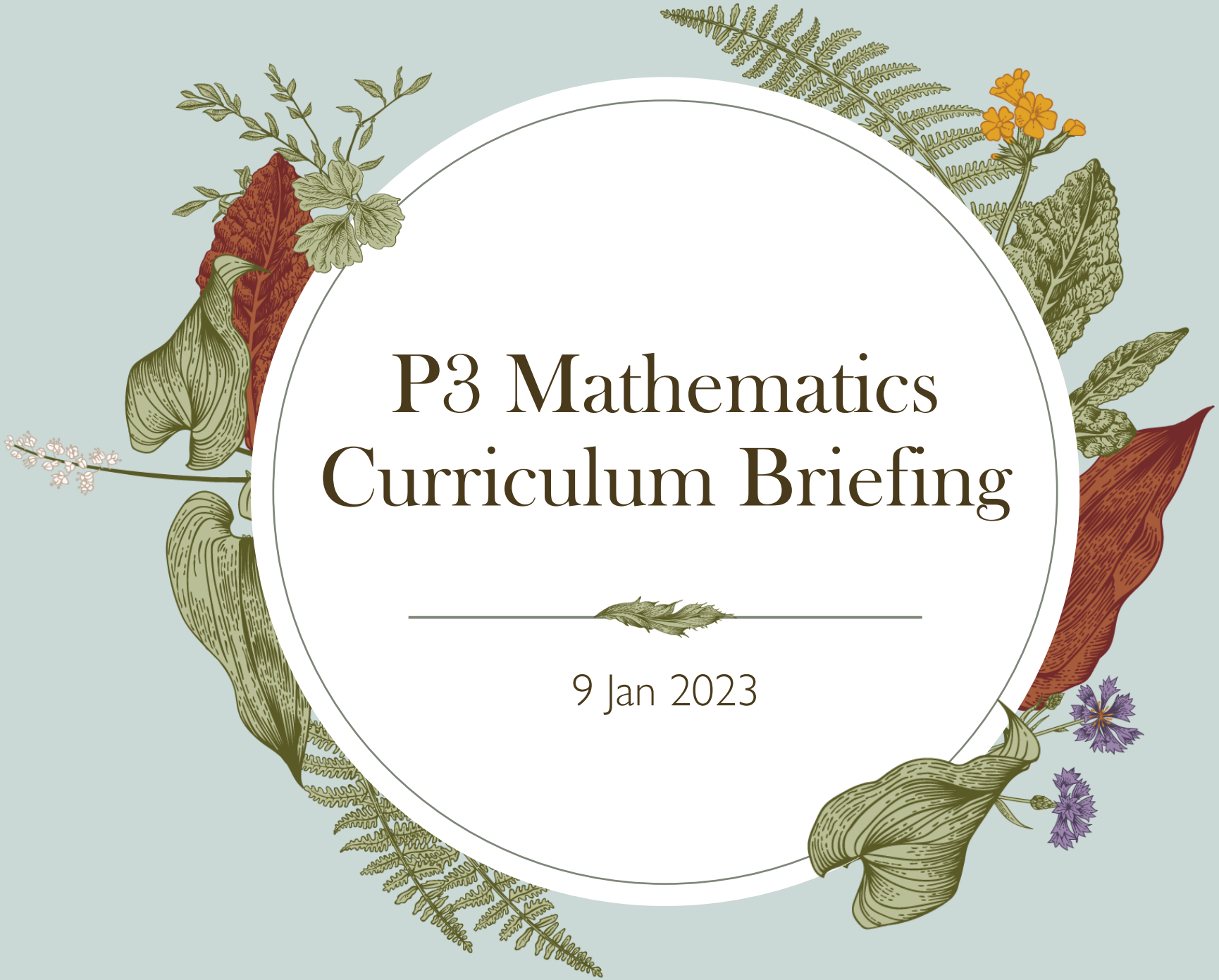


P3 Mathematics Curriculum Briefing

9 Jan 2023

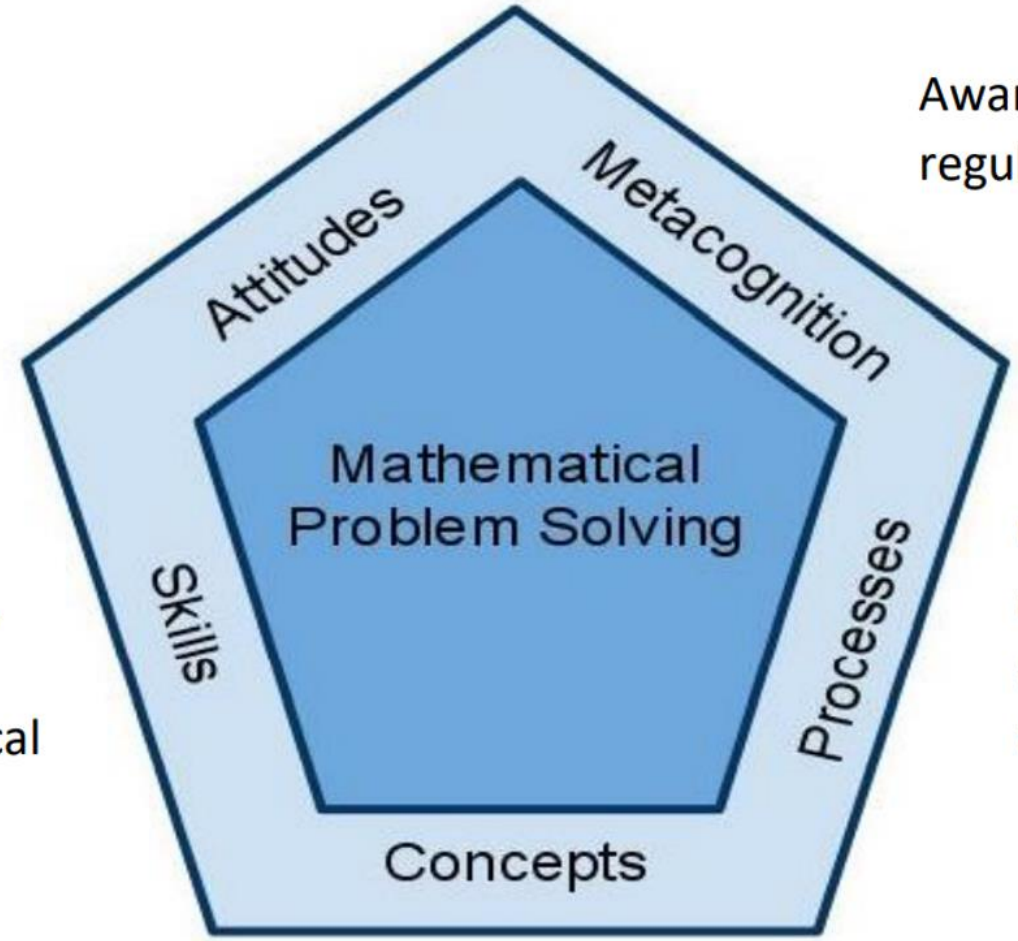
Mission

To develop our pupils with mathematical concepts and skills for everyday life and to equip them with process skills to solve mathematical problems.

Mathematics Curriculum Framework

Belief, appreciation, confidence, motivation, interest and perseverance

Awareness, monitoring and regulation of thought processes



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

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

Understanding of the properties and relationships, operations and algorithms

Primary Mathematics Curriculum

- The Primary Mathematics Syllabus aims to enable all students to:

➢ acquire mathematical concepts and skills for everyday use

➢ develop thinking, reasoning, communication, application, and metacognitive skills through a mathematical approach to problem solving

➢ and build confidence and foster interest in mathematics

Math teachers:

3A – Mr Ronald Lee

3B – Mdm Yue Siew Lee

3C – Mdm Janice Yeo

3D – Mr Ronald Lee

3E – Mrs Eunice Yoong

3F – Mdm Yue Siew Lee

3G – Ms Bettina Tan

3EI – Mrs Clara Chin

Topics in P3

- Whole Numbers – Numbers to 10 000
- Whole Numbers – Addition and Subtraction
- Money
- Multiplication and Division
- Bar Graphs
- Angles
- Perpendicular and Parallel Lines
- Fractions
- Length, Mass and Volume
- Area and Perimeter
- Time

P3 Topics (Term 1)

Whole Numbers:

- Counting in hundreds/thousands
- Number notation, representations and place values
- Reading and writing numbers in numerals and in words
- Comparing and ordering numbers
- Patterns in number sequences
- Addition & subtraction algorithms
- Mental calculation involving addition and subtraction of two 2-digit numbers

P3 Topics (Term 1)

Money:

- Adding and subtracting money in decimal notation

P3 Topics (Term 1)

Multiplication & Division:

- Multiplication tables of 6, 7, 8 and 9
- Multiplying and dividing within the multiplication tables
- Division with remainder
- Multiplication and division algorithms
- Mental calculation involving multiplication and division within the multiplication tables

P3 Topics (Term 2)

Bar Graphs:

- Reading and interpreting data from bar graphs
- Using different scales on axis

Angles:

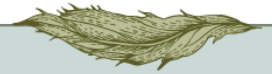
- Concepts of angle
- Right angles, angles greater than/smaller than a right angle

P3 Topics (Term 2)

Perpendicular and Parallel Lines:

- Perpendicular and parallel lines
- Draw perpendicular and parallel lines on square grid

P3 Topics (Term 2 & 3)



Fractions:

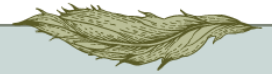
- Equivalent fractions
- Expressing a fraction in its simplest form
- Comparing and ordering unlike fractions with denominators of given fractions not exceeding 12
- Writing the equivalent fraction of a fraction given the denominator or the numerator
- Adding and subtracting two related fractions within one whole with denominator of given fractions not exceeding 12

P3 Topics (Term 3)

Length, Mass, Volume:

- Measuring length in kilometres (km), volume of liquid in millilitres (ml)
- Measuring length/mass/volume (of liquid) in compound units
- Converting a measurement in compound units to the smaller unit, and vice versa

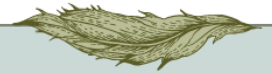
P3 Topics (Term 3)



Area and Perimeter:

- Concepts of area and perimeter of a plane figure
- Measuring area in square units, cm^2 and m^2, excluding conversion between cm^2 and m^2
- Perimeter of rectilinear figure, rectangle and square
- Area of rectangle/square

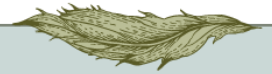
P3 Topics (Term 4)



Time:

- Telling time in seconds
- Finding the starting time, finishing time or duration given the other two quantities
- 24-hour clock

Teaching & Learning in class



- 11 periods of Math per week
- Syllabus – Workbook worksheets, RGPS topical reviews, in-house problem-solving package (Heuristics)
- Topical reviews – Checklist feedback for pupils and pupils' reflections.
- Teaching – Activity-based lessons, differentiated activities, experiential learning & ICT lessons to deepen teaching & learning.

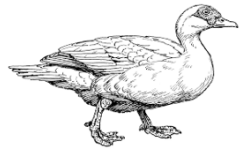
Heuristic packages

Guess and Check 1

Name: _____ ( ) P3 ( ) Date: _____

Use the guess and check method to solve these problems.

1. There are 20 rabbits and ducks.
   There are 54 legs altogether.
   How many ducks are there?



Rabbits	legs	Ducks	legs	Total animals	Total legs	Check (54)?

Ans: _____

Guess and Check strategy

1) Mrs Tan sold **450** curry puffs on **Friday**.
   She sold **35 fewer** curry puffs on **Saturday than on Friday**.
   a) How many curry puffs did she sell on Saturday?
   b) How many curry puffs did she sell on both days?

Step 1: Understanding the word problem

On which days did she sell more curry puffs? On Friday or Saturday? _____

Step 2: Plan

What model do I draw? Part-whole or comparison? _____

Draw your model: Complete the model

Friday

Saturday

Step 3: Do

Look at your model carefully and solve question (a) and (b).

_____ ◯ _____ = _____

_____ ◯ _____ = _____

- *Remember the 4 steps when you do word problems*
- *Underline your keywords*
- *Plan how to draw your model*
- *Make use of your model and solve the question*
- *Check your work ☺*

Ans: a) _____

b) _____

Using Polya's 4 steps method for problem-solving

Activity-based lessons

Part 1: Bingo Game

5090	303	128	10 000
5009	2020	932	7483
4783	766	2787	9011
7005	8824	8024	22

Part 2: List the numbers that you have crossed out in part 1 and write them in words.

_____: _____

_____: _____

_____: _____

Part 3: Group the numbers listed in part 2 into two groups.

Even Numbers	**Odd Numbers**

Playing the BINGO game for 'Whole Numbers' topic

Hands-on performance tasks

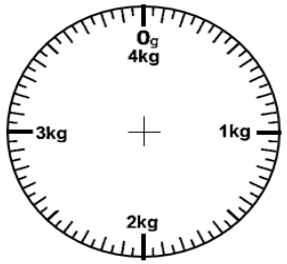
Measuring (Mass) performance task

A **Large interval** from **0 to 1 kg** is equal to **1000 g**

There are _____ **Medium intervals** from **0 to 1 kg (1000g)**

Each **Medium interval** is **1000 g ÷ _____** = _____ g

Each Small interval (between Medium intervals) is 100 g ÷ 2 = _____ g

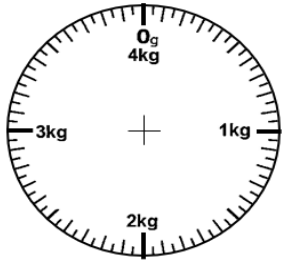


Place the **brass weights** at station 1 gently on the weighing scale. Carefully observe the position of the pointer and decide what is the mass of the brass weights.

Draw a line from the centre of the + to the marking where the pointer is pointing.

Count the number of Medium intervals from 0g : _____

At station 1, the mass of the brass weights is _____ g

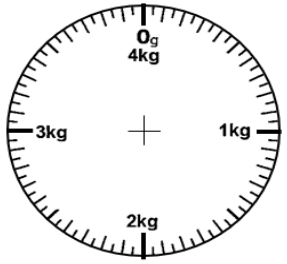


Place the **brass weights** at station 2 gently on the weighing scale. Carefully observe the position of the pointer and decide what is the mass of the brass weights.

Draw a line from the centre of the + to the marking where the pointer is pointing.

Count the number of Medium intervals from 0g : _____

At station 2, the mass of the brass weights is _____ g



Place the **brass weights** at station 3 gently on the weighing scale. Carefully observe the position of the pointer and decide what is the mass of the brass weights.

Draw a line from the centre of the + to the marking where the pointer is pointing.

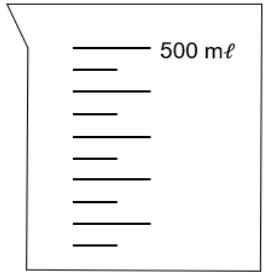
Count the number of Medium intervals ***from 1 kg*** : _____

At station 3, the mass of the brass weights is ____ kg _____ g

Measuring (Volume) performance task

Use a RULER to DRAW a LINE to show the water level in each cup.
Note: Check that the water level drawn is **horizontal.**

Set-up A

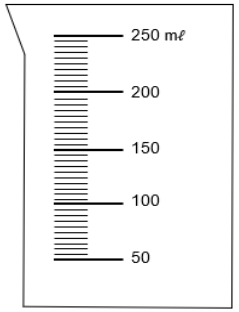


Number of **small intervals** from **0 to 500 mℓ** : _____

Each **small interval** is _____ ÷ _____ = _____

The volume of liquid in Set-up A is _____

Set-up B



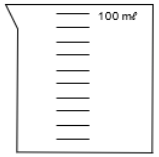
The volume from **50 to 100 mℓ** is _____ **mℓ**

Number of **small** intervals from **50 to 100 mℓ** : _____

Each **small** interval is _____ ÷ _____ = _____

The volume of water in Set-up B is _____

Set-up C



Number of **small intervals** from **0 to 100 mℓ** : _____

Each **small interval** is _____ ÷ _____ = _____

The volume of water in Set-up C is _____

*Please note: Diagrams are not drawn to scale.

Learning how to measure mass using weighing skills and volume using beakers

Differentiated Instructions

Choice Board (P3 Length, Mass & Volume)

- Question 5 must be completed
- Next, choose another 2 tasks to complete your tic-tac-toe.
- Highlight or circle the boxes you have completed.
- This choice board is due on _____.

1 Use the internet to find the height and length of places in Singapore	2 Use the internet to find the height and length of places around the world	3 Use the internet to find the height and length of mountain and rivers around the world
4 Complete the word problems	5 Complete the summary	6 Create your own word problems
7 Drawing of scales of mass and volume	8 Reading the scales of mass and volume	9 Complete the Math Journal

Giving students autonomy

Activity 2

Use the internet to find the height and length of places around the world and complete the table.

Landmark	Height in metres	Height in centimetres
Eiffel Tower in Paris		
Petronas Twin Towers in Malaysia		

Places	Length in kilometres	Length in metres
Great Wall of China		
Amazon River in South America		

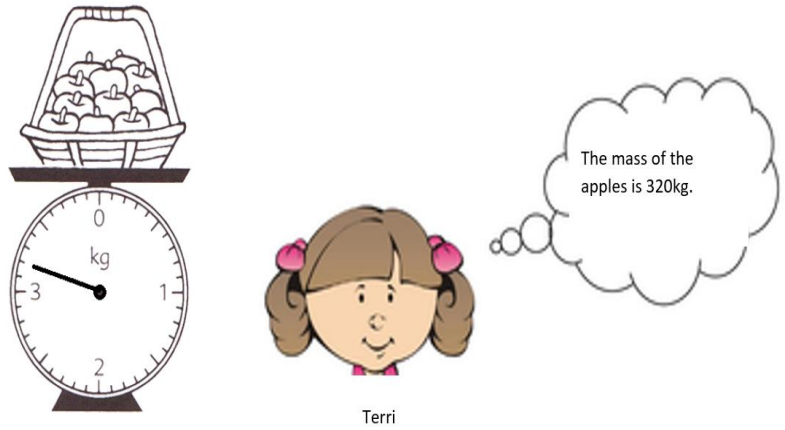
What I have learnt:

When converting from metres to centimetres, I _____.

When converting from kilometres to metres, I _____.

Using the internet to find out data related to real-world context

Activity 9



Do you think Terri is correct? Please explain.

_____

_____

Thinking aloud, building metacognition competencies

Differentiated Instructions

Choose one main dish only from Main Dish 1 and 2. (Pairwork)

Main Dish 1

Your Task

Your task is to design an enclosure for the white tigers. The area of the enclosure needs to be **24 m²**.

You need to:

1. Find the different lengths and breaths that will have the same **area of 24 m²**.
2. Draw and colour the areas on the grids provided. Use a ruler.
3. Name your floor plans B and C
4. Find the different perimeters of B and C. Show your working.

**Floor Plan A has been done for you.*

Floor Plan	Area	Perimeter
A	2 x 12 = 24 m²	2 + 2 +12 +12 = 28 m
B	x = 24 m²	
C	x = 24 m²	

Floor Plan _____ has the greatest perimeter.

Floor Plan _____ has the smallest perimeter.

All three floor plans have the s_____ **area** although they have different **p**_____.

Main Dish 2

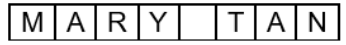
Designing Keychain

Children's Day is just around the corner. You are going to design a keychain for your friend using her name. You will design **2 designs** and calculate its area and its perimeters.

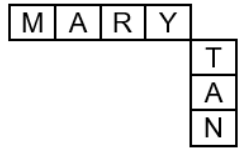
Things to note:

1. Designs must be of the same name with the **same area** (i.e. use the same number of squares)
2. The design must be a **rectangle** or a **square**. See examples below.

Design 1



Area = 8 cm^2 ✓

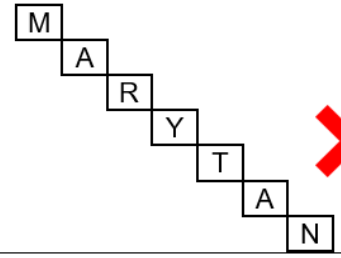


✗

Design 2

Area = 8 cm^2 ✓

Area = 7 cm^2 ✗



✗

Giving students autonomy to choose the tasks they want and giving tasks related to real-world context

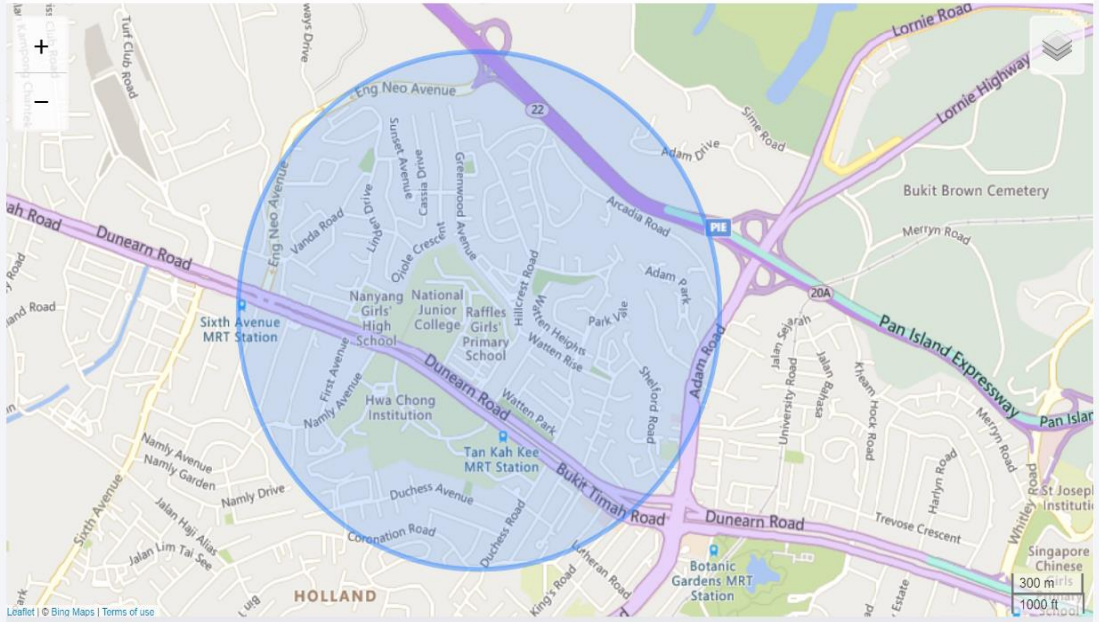
ICT enriched lessons

Length Topic

Activity 2: How Far is 1 Kilometre? (Class)

Let's look at the map below.

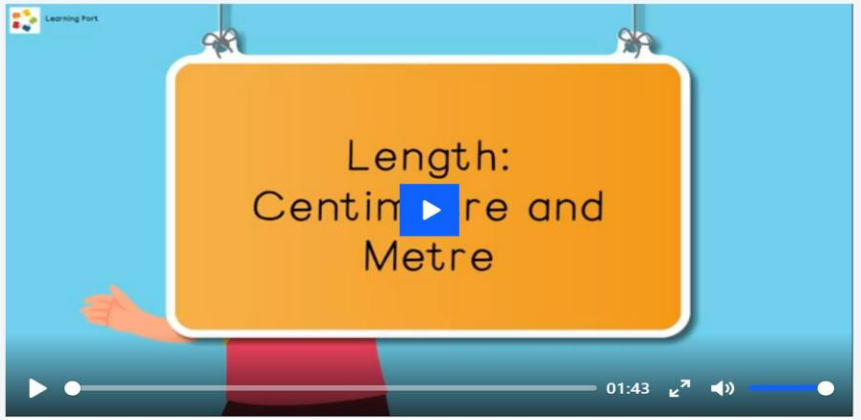
The distance of the landmarks (within the BLUE circle) is less than 1 km from Raffles Girls Primary School, and the landmarks outside the blue circle is more than 1 km from Raffles Girls Primary School.



Relating to real-world context

Recap: Measuring Length (Home)

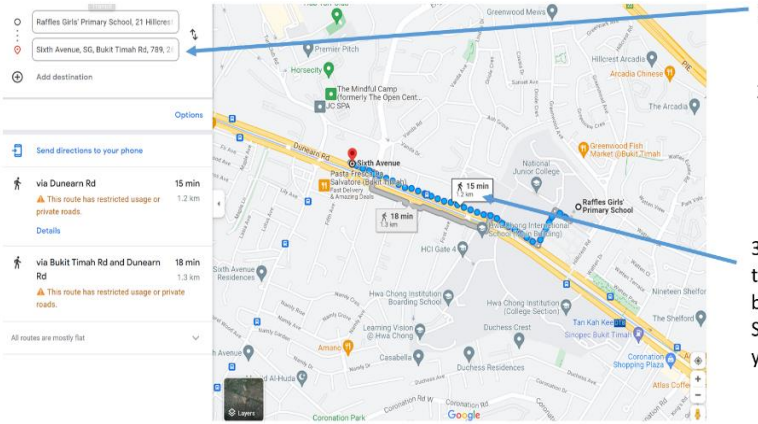
What is a metre?



videoplayback.mp4

Using videos for recap

Refer to the the instruction below on how to use the map.



1. Type in the name of the landmark if more than one is shown.
2. Tap enter on your keyboard

3. Read the distance shown on the map. That is the distance between Raffles Girls Primary School and the landmark that you have searched for.

Teaching pupils how to use google maps

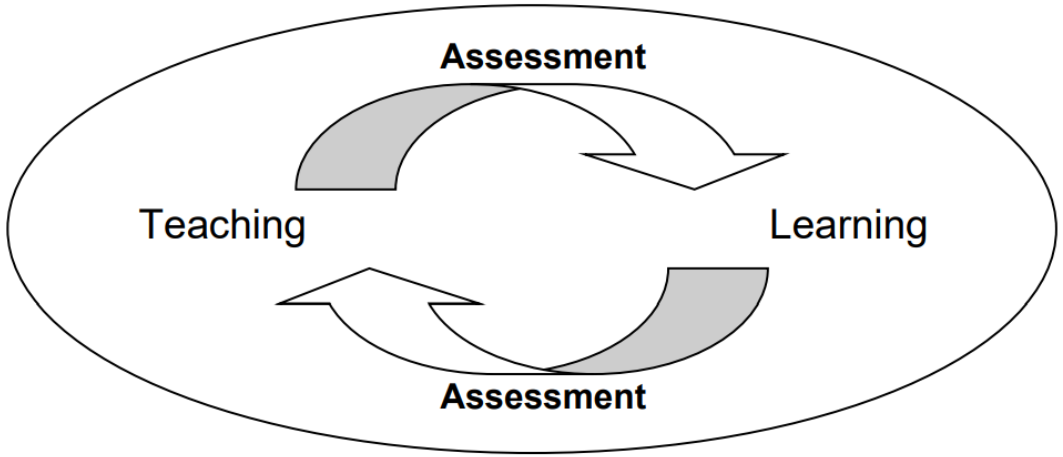
Assessment Matters

- Assessment is an integral part of the teaching and learning process.

It is an ongoing process by which teachers gather information about students' learning to inform and support teaching.

- An important product of assessment is feedback. It must inform students where they are in their learning and what they need to do to improve their learning. It also inform teachers what they need to do to address learning gaps.

- In RGPS, our teachers assess students using different modes of assessment both formally and informally. A meaningful range of assessment modes and tasks includes class discussions, classroom discourse, performance tasks, use of checklists, use of rubrics with teachers' comments and students' reflections.



Formative Assessments

2-1 Exit Card

- **Write down <u>2 things</u> which you have learnt today for comparing & ordering of fractions.**
- **Write down <u>1 challenge</u> which you face for this topic.**

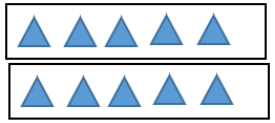
2 things I have leant today are:

1 challenge that I face for this topic is:

Exit cards

Math Revision Tic-Tac-Toe

Directions: Start with **number 5** and then make two other choices to make your tic-tac-toe. Complete it and hand in to your Math teacher on 14 September.

1. Use 18 items and put them in equal groups. Write down as many multiplication equations as possible. **Draw or take a picture (print out & paste it on the paper) to show your answers.** Eg. 3 x 4 = 12 4 x 3 = 12 2 x 6 = 12 6 x 2 = 12	2. Use objects to find the total number of items in groups of the same size. Write 4 related statements based on your objects. **Draw or take a picture (print out & paste it on the paper) to show your answers.** Eg. 2 + 2 + 2 + 2 = 8 4 twos = 8 4 groups of 2 = 8 4 X 2 =8	3. Use items to show the following multiplication phrases: • 2 groups of 6 • 6 groups of 2 • 3 groups of 4 • 4 groups of 3 **Draw or take a picture (print out & paste it on the paper) to show your answers.**
4. Write a multiplication/division/addition/ subtraction story and solve it. Eg. I had 10 candies. I gave them to 2 friends. Each of them had 5 candies 	5. **P1 Math Quest** (access link via SLS) Upon completion, please write down the 4-digit code below: Code: | | | | |	6. Compose a song or rap based on multiplication/division/addition/ subtraction facts using your favourite tune. You may wish to upload a video and send it to your Math teacher.
7. Read any one book below (or any book) related to division: • Divide or Ride • The Doorbell Rang • The Multiplying Menace Divides • Remainder One Write a book review and share with your friends.	8. Read any one book below (or any book) related to multiplication: • Amanda Bean's Amazing Dream • 365 Penguins • The Lion's Share • The Grapes of Math Write a book review and share with your friends.	9. Read any one book below (or any book) related to addition or subtraction: • One Hundred Hungry Ants • Mission Addition • Elevator Magic • The Real Princess: A Mathemagical Tale Write a book review and share with your friends.

Different tasks for students to choose to consolidate revision

Teacher's assessment after topical review

RAFFLES GIRLS' PRIMARY SCHOOL
PRIMARY THREE MATHEMATICS

CHAPTER 1
FEEDBACK

Name: _____ ( )

Class: _____

Numbers To 10 000	**Novice**	**Developing**	**Proficient**
• Counting in hundreds/thousands to ten thousand			
• Number notation, representations and place values (thousands, hundreds, tens, ones)			
• Reading and writing numbers in numerals and words			
• Comparing and ordering numbers			
• Patterns in number sequences			

Comments: (if any)

_____

_____

Parent's Signature: _____

RAFFLES GIRLS' PRIMARY SCHOOL
PRIMARY THREE MATHEMATICS

CHAPTER 2
FEEDBACK

Name: _____ ( )

Class: _____

Addition and Subtraction	**Novice**	**Developing**	**Proficient**
Add up to 4-digit numbers without regrouping.			
Add up to 4-digit numbers **with regrouping**			
Subtract up to 4-digit numbers without regrouping.			
Subtract up to 4-digit numbers **with regrouping**			
Subtraction where the larger number contains multiple zeros			

Comments: (if any)

_____

_____

Parent's Signature: _____

Weighted Assessment feedback rubrics:

P3 Math - Teacher Assessment Checklist (2021 WA1)

Name: _____ Class: _____

Qn	Learning Objectives	Have understanding	Lack understanding	Computation errors
1	Number notation, representation and place values (thousands, hundreds, tens and ones)			
2	Reading and writing numbers in numerals and in words			
3	Finding sum *(without renaming)*			
4	Finding difference *(without renaming)*			
5	Finding product			
6	Finding quotient and remainder			
7	Comparing and ordering numbers			
8	Add with renaming (up to 4 digits)			
9	Odd and even numbers			
10	Patterns related to whole numbers			
11	Division (up to 3-digits by 1 digit)			
Qn	**Learning Objectives**	**Able to apply math concepts**	**Cannot comprehend question**	**Misread data/ computation errors**
12	Solve up to 2-step word problems involving addition and subtraction.			
13	Solve up to 2-step word problems involving the 4 operations			
14	Solve up to 2-step word problems involving addition and subtraction.			
15	Solve up to 2-step word problems involving the 4 operations			
16	Solve up to 2-step word problems involving the 4 operations			

Student's reflection:

I am (*satisfied / not satisfied) with my performance in WA1.
I need to work on the following area(s) :

_____

_____

Summative Assessments

Weighted Assessment 1	Weighted Assessment 2	End-Year Exam
15%	15%	70%

Weighted Assessment 1	Topics tested	Weighted Assessment 2	Topics tested
T2W5 (50 mins)	Numbers up to 10 000 Addition & Subtraction Multiplication & Division SAQ & Word Problems	T3W5 (50 mins)	Money Data Analysis (Graphs) Geometry Fractions SAQ & Word Problems

End-Year-Examination Format

Duration: 1 h 45 min

Sections	Item Type	No. of questions	Marks
Section A	Multiple choice	17	28 m
Section B	Short Answer Response	19	32 m
Section C	Word Problems	6	20 m

Points to note

- The curriculum takes on a spiral approach. Some of the concepts taught are built on concepts taught in previous years.

- Exams will test on topics taught in previous years.

How can you help your child?

- Help to incorporate math into their day-to-day routine, help them to understand and appreciate its relevance.
- Encourage them to check their work for accuracy and not speed.
- Encourage them to approach their math teachers if they encounter any challenges.
- Ensure that they have shown you their work and filed it properly to facilitate revision.
- Make Math fun for them! (Games, puzzles, concrete materials).
- Be encouraging and adopt a positive mindset, celebrate the small successes!

Thank you