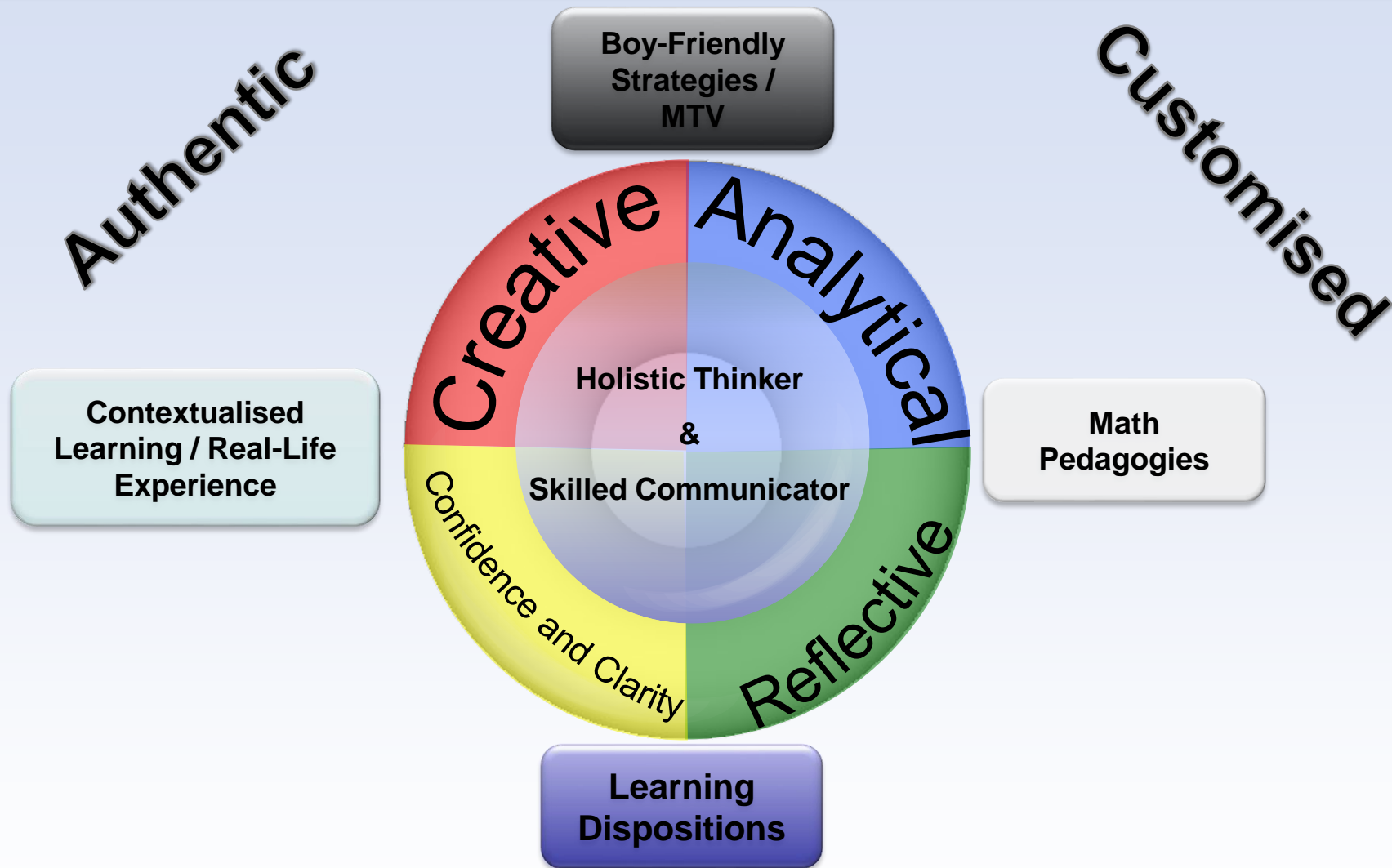


Nurturing a Holistic Thinker and Skilled Communicator in Mathematics



Our Math Department Vision
Every Saint is an analytical, self-directed problem-solver



Embedded Values

SAJS

Signature Pedagogy



Teaching understanding of concepts through 3 representations

E

Enactive

- Provide learning experiences through the use of concrete materials, manipulatives or hands-on activities.

P

Pictorial

- Provide learning experiences with the use of visual medium : pictures, diagram, images, videos, etc to allow pupils to generate mathematical rules and regulations through questioning.

A

Abstract

- Provide learning experiences for identification and application of problem-solving skills and strategies, as well as the explanation of concepts, giving examples and non-examples and justification for specific rules and solutions.



SAJS Problem-Solving Approach

- To promote cognitive and metacognitive process skills (HT skills)
when applying problem-solving skills / heuristics

SAJS Problem Solving Approach

1

- **Read and Understand**

- Have I used **Structured Questioning** ?
- Have I used **chunking** to identify key information?
- Can I restate the problem by drawing a picture or diagram to help me understand the problem?

2

- **PLAN**

- What **strategy or heuristics** can I use to solve the problem? **What makes you say that?**

3

- **Carry out the Plan**

- Did I label my steps?
- Did I use the right mathematical symbols?
- If I am stuck, do I have an **alternative method**? **What makes you say that?**

4

- **Check**

- Does the answer make sense?
- Have I **check** for reasonableness and accuracy? (**Confirm**)
- Have I checked for calculation errors?
- Have I checked for transfer errors?
- Have I transferred information correctly?
- Have I included the correct measurement units?



Learning Dispositions

The disposition to :

- Persevere (Resilience)
- Be adventurous (Wonder)
- Make connections (Wonder)
- Be accurate (Excellence)
- Seek and evaluate reasons (Wonder)
- Have metacognition (Self-Discipline & Excellence)



Weighted Assessment 1, 2, 3 & SA2

Term 1	Term 2	Term 3	Term 4
Weighted Assessment	Weighted Assessment	Weighted Assessment	Semestral Assessment
WA1	WA2	WA3	SA2
Term 1 Week 9	Term 2 Week 8	TBC	TBC
(10% overall): 20 marks	(10% overall): 30 marks	(10% overall): 30 marks	(70% overall): 80 marks



Format of SA2 Paper

Booklet	Item Type	No. of Questions	Weightage	Duration
Section A	MCQ	17 (4 1-mark and 13 2-mark questions)	37.5% (30 marks)	1 hour 45 min
Section B	Short Answer Questions	17 (4 1-mark and 13 2-mark questions)	37.5% (30 marks)	
Section C	Word Problems	6 (4 3-mark and 2 4-mark questions)	25% (20 marks)	

Note: Total Marks is (70% overall): 80 marks

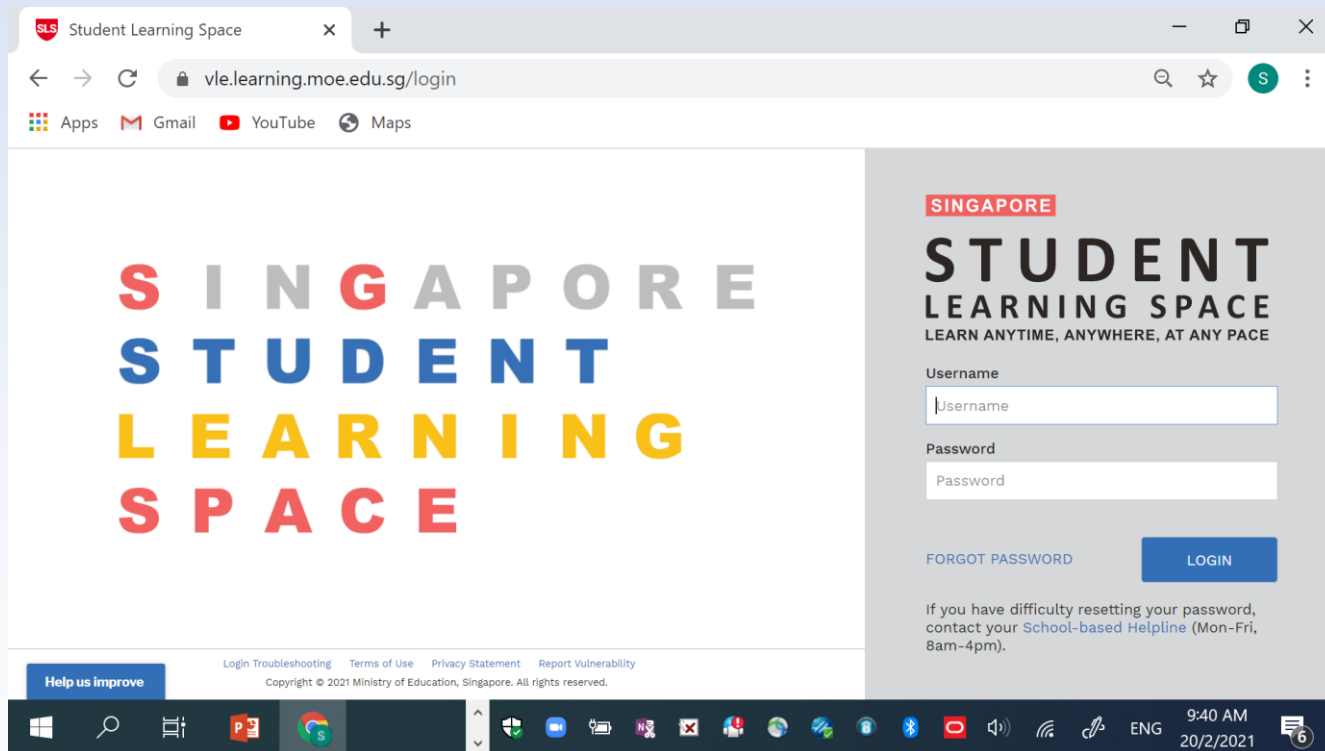


Materials Used in Class

- My Pals are Here TB 3A and 3B
- My Pals are Here Workbook 3A and 3B
- Heuristics Booklets
- Practice Papers (prior to end of Semester 1 and SA2)
- Mini whiteboard and markers
- Green pen (for corrections)
- **Blue file** – Semester 1 Workbook and Heuristics Booklets
- **Purple file** – Semester 2 Workbook and Heuristics Booklets



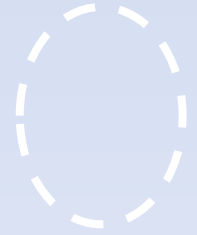
Online Teaching and Learning Resources



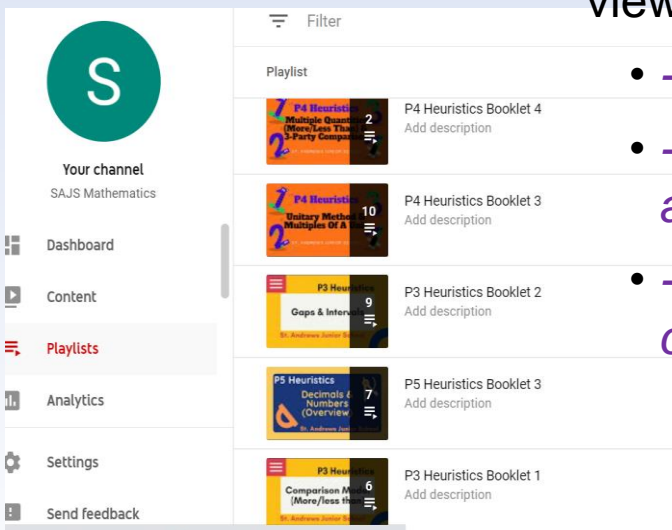


Your channel
SAJS Mathematics

SAJS MATHEMATICS YOUTUBE CHANNEL



We develop online heuristics teaching and learning videos for students', parents' and fellow teachers' viewing and learning.



- - *learning together*
- - *students to be familiar with problem-solving skills and Math language used*
- - *to demonstrate holistic thinking and skilled communication in Mathematics*

P3 Heuristics Booklet 1



Just scan QR Code
and you can select the
video to view

<https://tinyurl.com/sajsp3mah1>

- QR Codes are found in all level heuristic booklets



Online Teaching & Learning Resources - Videos

P3 Heuristics Booklet 2



<https://tinyurl.com/sajsp3mah2>

Example 1

Sharon is 25 cm taller than her brother. If Sharon's brother height is 118 cm tall, what is their total height?

SAJS Problem Solving Approach

Read and Understand

- Have I used **Structured Questioning**?
- Have I used **chunking** to identify key information?
- Can I restate the problem by drawing a picture or diagram to help me understand the problem?

What is structured questioning?

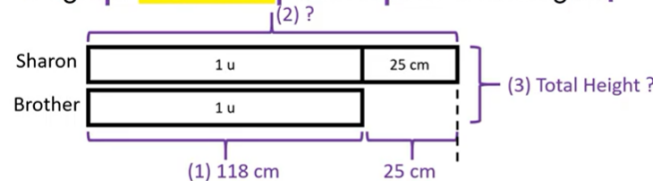
1. How many parties are there? **2 parties**
2. Who are the parties? **Sharon and her brother**
3. Who is taller? **Sharon is taller**
4. Who is shorter? **Her brother is shorter**

5. What are you supposed to find in the question?

P3 Heuristics Whole Numbers [Booklet 2 WS2] - Comparison Model (More/less than) Example 1 & Q1

Example 1

Sharon is 25 cm taller than her brother. If Sharon's brother height is 118 cm tall, what is their total height?



- 1) Brother's height = 1 u = 118 cm
- 2) Sharon's height = 1 u + 25 cm = 118 cm + 25 cm = 143 cm
- 3) Total height = 118 cm + 143 cm = 261 cm

Carry out the Plan

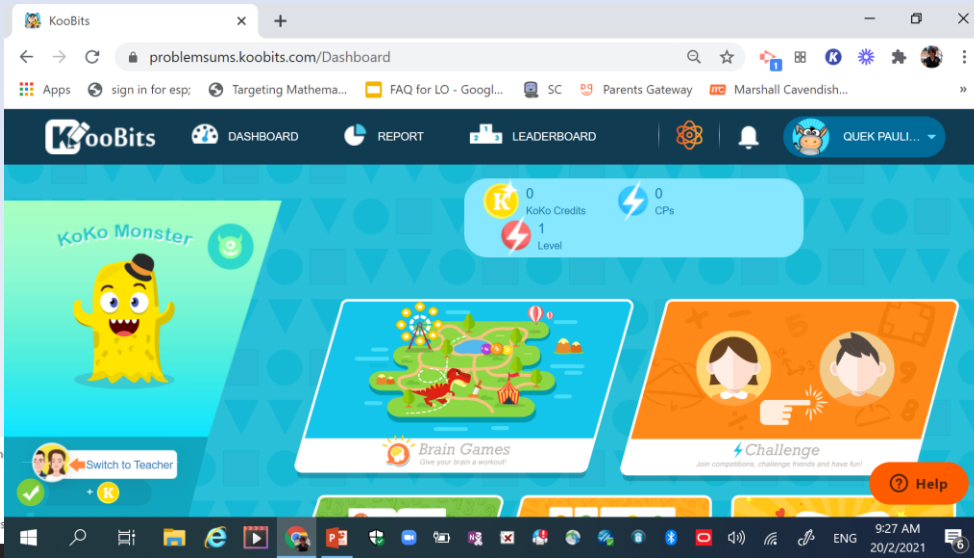
- Did I label my steps?
- Did I use the right mathematical symbols?
- If I am stuck, do I have an **alternative method**? What makes you say that?

Their total height is 261 cm.

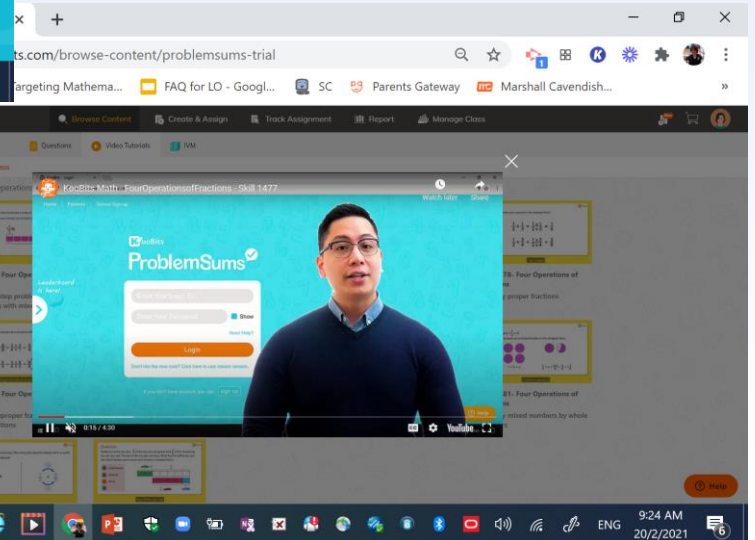
P3 Heuristics Whole Numbers [Booklet 2 WS2] - Comparison Model (More/less than) Example 1 & Q1



Supporting Online T&L Resources

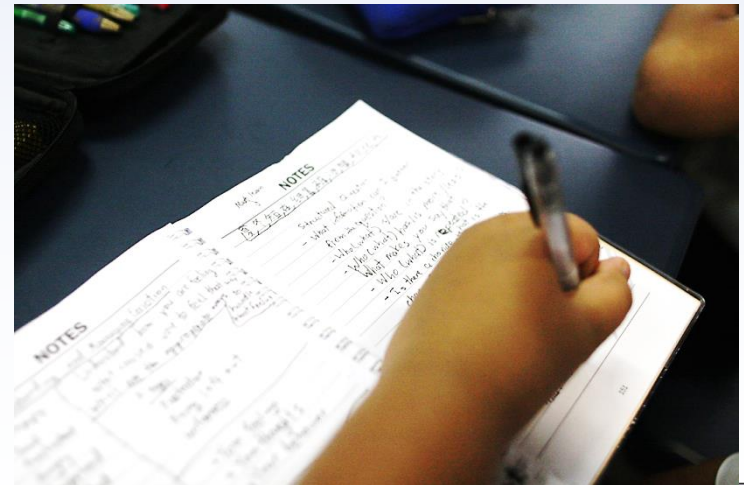


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Key Areas of Focus

- Involvement / Participation in Learning –
 - Cooperative Learning
 - Use of MTV Thinking Routines in classroom
 - Asking questions to seek clarity
- Problem-Solving using Heuristics
 - Checking for reasonableness and accuracy
 - Use of Alternative Solutions
 - Creating Questions
 - Identifying Misconception
- Math Journaling
(Think and Take notes)



Ways we hope to partner you

Rigor

- Ensure daily practice
- Check their PO
- Get child to explain concepts to you
(encourage mathematical reasoning)



Ways we hope to partner you

Presentation of Work (Neat and Organised)

- Ensure that there are proper steps and equations
- Ensure **proper filing** of Worksheets
- Ensure **corrections are complete (with thorough checking)**



Ways we hope to partner you

- Develop and prepare them the following skills
 - Time Management
 - Exam-taking skills
 - Accuracy
 - Mental Calculation
- Control amount of time spent on computer or video games





THANK YOU

