

MATHEMATICS



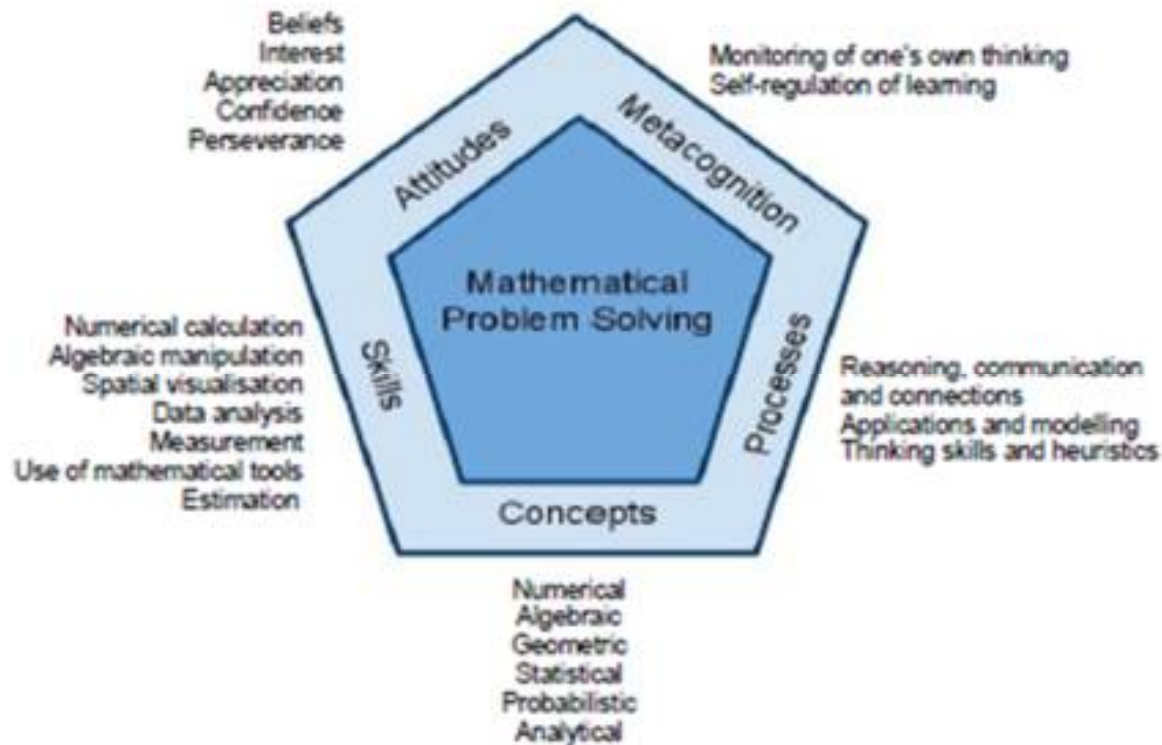
RESPECT

TEAMWORK

RESPONSIBILITY

LIFELONG LEARNING

The Mathematics Framework



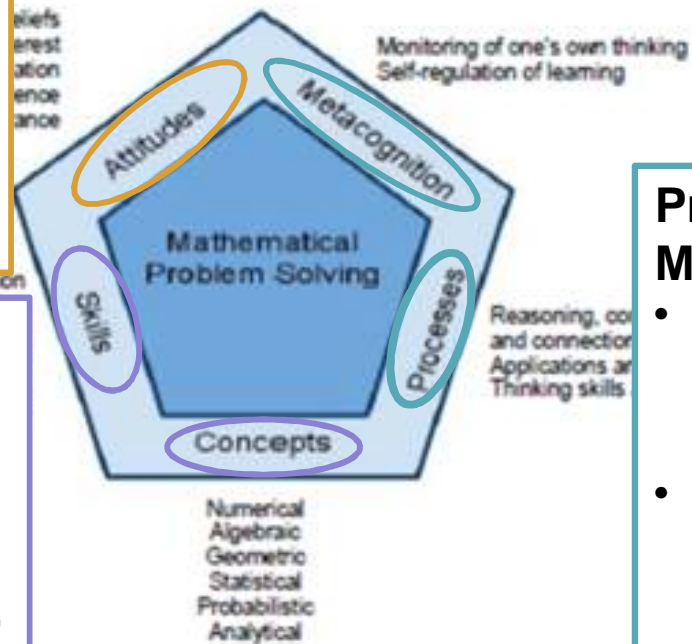
Teaching and Learning In BPPS

Attitudes

- Learning attitudes (interest, confidence and perseverance) towards the learning of mathematics
- E.g., Math Booster, Math Awareness

Concepts and Skills

- Learning experiences to develop deep understanding of mathematical concepts, and opportunities to use and practise skills acquired
- E.g., Math Trail, Learning Trip, Topical Revisions



Processes and Metacognition

- Learning opportunities to acquire and apply mathematical knowledge
- E.g., Reasoning and Communication package, Whiz In Math package

P3 Mathematics Content

Content	P2	P3
Whole Numbers	Counting in tens and hundreds	Counting in hundreds and thousands
	Number notation, representations and place values of hundreds, tens and ones	Number notation, representations and place values of thousands , hundreds, tens and ones
	Reading and writing numbers in numerals and words	Reading and writing numbers in numerals and words
	Comparing and ordering numbers	Comparing and ordering numbers
	Patterns in number sequence	Patterns in number sequence
	Odd and even numbers	Addition, subtraction, multiplication and division algorithms
	Addition, subtraction, multiplication and division algorithms	Solving word problems involving 4 operations
	Solving word problems involving 4 operations	-

P3 Mathematics Content

Content	P2	P3
Length, Mass and Volume	Measuring <ul style="list-style-type: none"> length in metres and centimetres mass in kilograms, grams volume of liquid in litres 	Measuring <ul style="list-style-type: none"> length in kilometres volume of liquid in millilitres
	Comparing and ordering lengths, masses and volumes	Measuring and converting a measurement in compound units to the smaller unit
	Solving word problems involving length, mass and volume	Solving word problem involving length, mass, volume and capacity

P3 Mathematics Content

New	Content
Introduced in P3	Area and Perimeter
	Angles
	Perpendicular and Parallel Lines
	Bar Graphs

Format of P3 Paper

P3 CA1 & 2 2016

Booklet	Item Type	Number of Questions	Number of Marks per Question	Weighting
A	Multiple-choice (MCQ)	8	1, 2	14
	Short-answer (SAQ)	9	1, 2	16
B	Structured/Long-answer	3	3, 4	10
TOTAL		20	-	40

Duration of paper: 1 h

P3 SA1 & 2 2016

Booklet	Item Type	Number of Questions	Number of Marks per Question	Weighting
A	Multiple-choice (MCQ)	16	1, 2	28
	Short-answer (SAQ)	18	1, 2	32
B	Structured/Long-answer	6	3, 4	20
TOTAL		40	-	80

Duration of paper: 1 h 45 min

Whiz In Math (WIM)

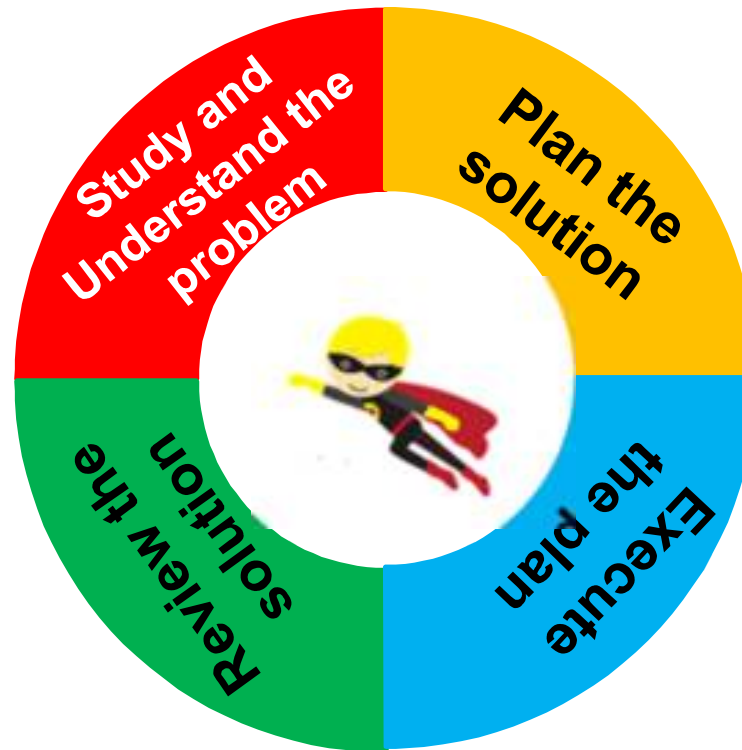
- **Problem Solving Process**
- **Problem Solving Approach**
- **Assessing Problem Solving**



Problem Solving Process: SUPER

- What is the problem asking you to do?
- What are we trying to find out?
- Can we restate the problem in our own words?

- Compare with the original question.
- Does it make sense?
- Should we revise our plan to meet all the conditions?



- What do we know?
- What do we need to do to solve the problem?
- Do we need more information?
- Is there a hidden question?
- What strategies are useful?

- Carry out the plan.
- Apply mathematical skills, concepts and strategies.



Problem Solving Approach



I DO



WE DO



YOU DO

- Establish goals and purpose
- Models
- Think aloud

- Checks, prompts, clues
- Provides additional modelling

- Clarifies confusion
- Provide support

Assessing Problem Solving

- ✓ Approach & Reasoning
- ✓ Solution
- ✓ Overall Presentation

BUKIT PANJANG PRIMARY SCHOOL
P3 WHEZ IN MATHEMATICS (WIM)
PROBLEM SOLVING RUBRIC

Name: _____ () Class: P3 ()
Date: _____ Group: _____

Approach and Reasoning			
<ul style="list-style-type: none"> strategies and skills used to solve the problem reasoning that support the approach 			
Level 1	Level 2	Level 3	Level 4
My method cannot work.	My method can be used: <ul style="list-style-type: none"> but it can solve only part of the problem, or but there are some mistakes in my reasoning. 	My method can be used to solve the whole problem.	My method works and: <ul style="list-style-type: none"> I use another method to show that my answer is correct, or I prove it through explanation or application to other cases.

Solution			
<ul style="list-style-type: none"> answer(s) to the question(s) asked in the task mathematical work that supports the answer(s) 			
Level 1	Level 2	Level 3	Level 4
My working: <ul style="list-style-type: none"> is not shown, or is wrong. 	My working is correct for only part of the problem.	My working is correct but I make some careless mistakes.	My working and answer are correct.

Overall Presentation			
<ul style="list-style-type: none"> appropriate and accurate mathematical language and representation used appropriate and accurate documentation of how the problem was solved and the reasoning used 			
Level 1	Level 2	Level 3	Level 4
My presentation: <ul style="list-style-type: none"> is incorrect, or does not show how the problem is solved. 	My presentation is correct but: <ul style="list-style-type: none"> some serious mistakes are made, or it is not complete. 	My presentation is correct and complete but: <ul style="list-style-type: none"> some minor mistakes are made, or some parts are not clear, or it is not systematic. 	My presentation is correct, complete, clear and systematic.

Assessing Problem Solving

Approach and Reasoning

- strategies and skills used to solve the problem
- reasoning that support the approach

Level 1	Level 2	Level 3	Level 4
My method cannot work.	My method can be used <ul style="list-style-type: none">• but it can solve only part of the problem. or <ul style="list-style-type: none">• but there are some mistakes in my reasoning.	My method can be used to solve the whole problem.	My method works and <ul style="list-style-type: none">• I use another method to show that my answer is correct. or <ul style="list-style-type: none">• I prove it through explanation or application to other cases.

Assessing Problem Solving

Solution

- answer to the question(s) asked in the task
- mathematical work that supports the answer(s)

Level 1	Level 2	Level 3	Level 4
My working is not shown / is wrong.	My working is correct for only part of the problem.	My working is correct but I make some careless mistakes.	My working and answer are correct.

Assessing Problem Solving

Overall Presentation

- appropriate and accurate mathematical language and representation used
- appropriate and accurate documentation of how the problem was solved and the reasoning used

Level 1	Level 2	Level 3	Level 4
<p>My presentation</p> <ul style="list-style-type: none">• is incorrect. <p>or</p> <ul style="list-style-type: none">• does not show how the problem is solved.	<p>My presentation is correct but</p> <ul style="list-style-type: none">• some serious mistakes are made. <p>or</p> <ul style="list-style-type: none">• it is not complete.	<p>My presentation is correct and complete but</p> <ul style="list-style-type: none">• some minor mistakes are made. <p>or</p> <ul style="list-style-type: none">• some parts are not clear. <p>or</p> <ul style="list-style-type: none">• it is not systematic.	<p>My presentation is correct, complete, clear and systematic.</p>

Samples of Students' Work

Question:

Joe spent \$3.60 on some apples and oranges.

An apple cost 50¢ and an orange cost 80¢.

How many apples and how many oranges did he buy?

Samples of Students' Work

Joe spent \$3.60 on some apples and oranges. An apple cost 50¢ and an orange cost 80¢. How many apples and how many oranges did he buy?

Apples (\$0.50)	Oranges (\$0.80)	Total	check
6x \$0.50 =\$3.00	2x \$0.80 =\$1.60	\$3.00 + \$1.60 = \$4.60	X
4x \$0.50 =\$2.00	2x \$0.80 =\$1.60	\$2.00 + \$1.60 = \$3.60	✓

	L1	L2	L3	L4
Approach & Reasoning				
Solution				
Overall presentation				

Ans: 4 Apples and 2 Oranges

Samples of Students' Work

Joe spent \$3.60 on some apples and oranges. An apple cost 50¢ and an orange cost 80¢. How many apples and how many oranges did he buy?

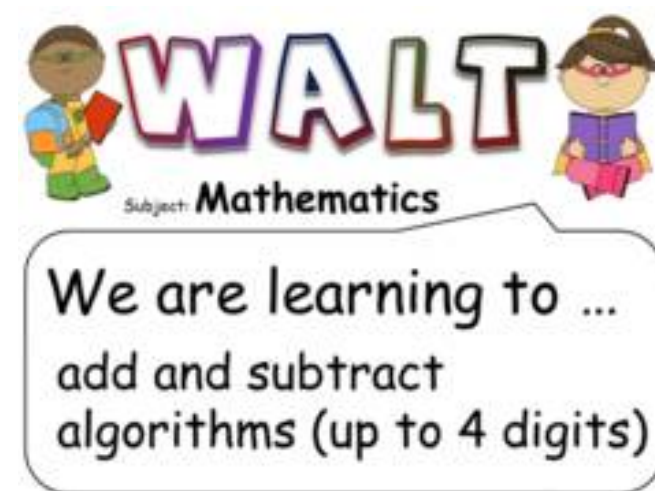
Guess	apples	cost	oranges	cost	total	mark
1	3	\$1.50	4	\$3.20	\$4.70	X
2	1	50¢	2	\$1.60	\$2.10	X
3	2	\$1.00	1	80¢	\$1.80	X
4	4	\$2	2	\$1.60	\$3.60	✓

	L1	L2	L3	L4
Approach & Reasoning				
Solution				
Overall presentation				

Formative Assessment

On-going formative assessment strategies used in class :

- Clarifying, sharing & understanding learning intentions



Formative Assessment

On-going formative assessment used in class :

- classroom discussion, activities and tasks that elicit evidence of learning.



Formative Assessment

On-going formative assessment strategies used in class :

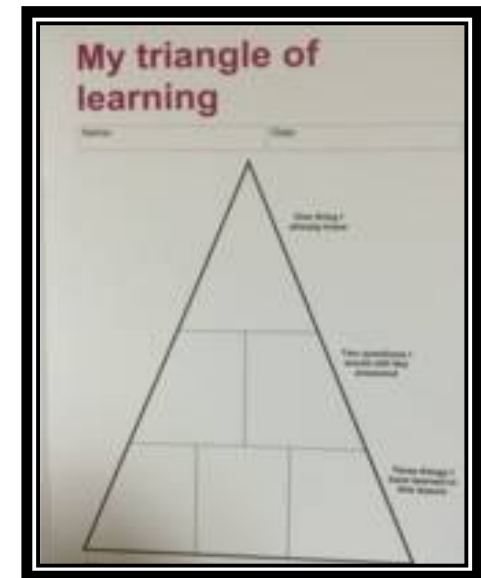
- Providing feedback that moves learning forward



Formative Assessment

On-going formative assessment strategies used in class :

- Activating learners as the owners of their own learning



Formative Assessment

On-going formative assessment strategies used in class :

- Activating learners as the owners of their own learning



Some tips for parents

- Talk positively about maths so your child also values it.
- Play games with your child, which involve adding dice or numbers, to show them that maths matters.
- Ask your child how they work out maths problems; it helps build their knowledge and boosts their confidence. Ask "What is the question asking you?"
- Reinforce to your child that there is always more than one way to get the right answer.
- Point out maths in everyday life with your child whenever you can.
- Talk to the teacher if your child needs more help with the homework.

Partnership with Parents

Please ensure your child has mastery in these P2 topics:

- ✓ Addition & Subtraction (within 1000)
- ✓ Multiplication (2, 3, 4, 5 and 10 times table)
- ✓ Length
- ✓ Mass
- ✓ Volume
- ✓ Time
- ✓ Money
- ✓ Picture Graphs



(Details can be found in the P2 textbooks)

Thank You

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Please complete the feedback form to help us improve on future sharing.

RESPECT

TEAMWORK

RESPONSIBILITY

LIFELONG LEARNING