Curriculum Briefing
P4 Mathematics

Haig Girls' School

2 February 2017

Vision

A community of confident and motivated pupils who are both effective problem solvers and team players.

Haig Girls' School

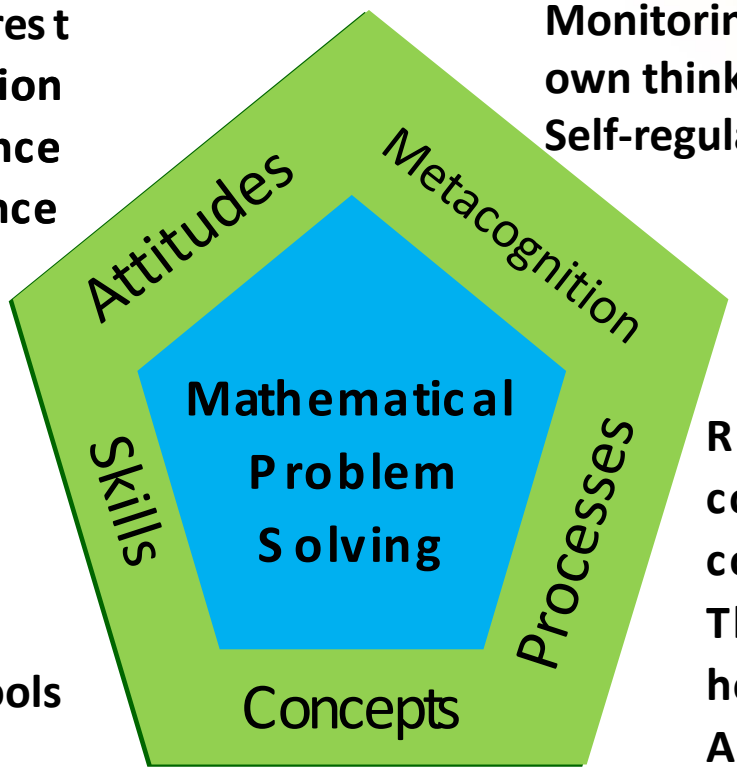
Mission

To equip pupils with the necessary mathematical knowledge and skills for everyday life and for continuous learning in mathematics and related disciplines.

MOE MATHEMATICS CURRICULUM FRAMEWORK

Beliefs
Interest
Appreciation
Confidence
Perseverance

Monitoring of one's own thinking
Self-regulation of learning



Numerical calculation
Algebraic manipulation
Spatial visualization
Data analysis
Measurement
Use of mathematical tools
Estimation

Reasoning, communication & connections
Thinking skills & heuristics
Application & modelling

Numerical
Algebraic
Geometrical
Statistical
Probabilistic
Analytical

STEPS FOR PROBLEM-SOLVING: POLYA'S MODEL

Step1: Understanding the Problem.

- What are the key words?
- How would you describe the problem in your own words?

Step 2: Plan

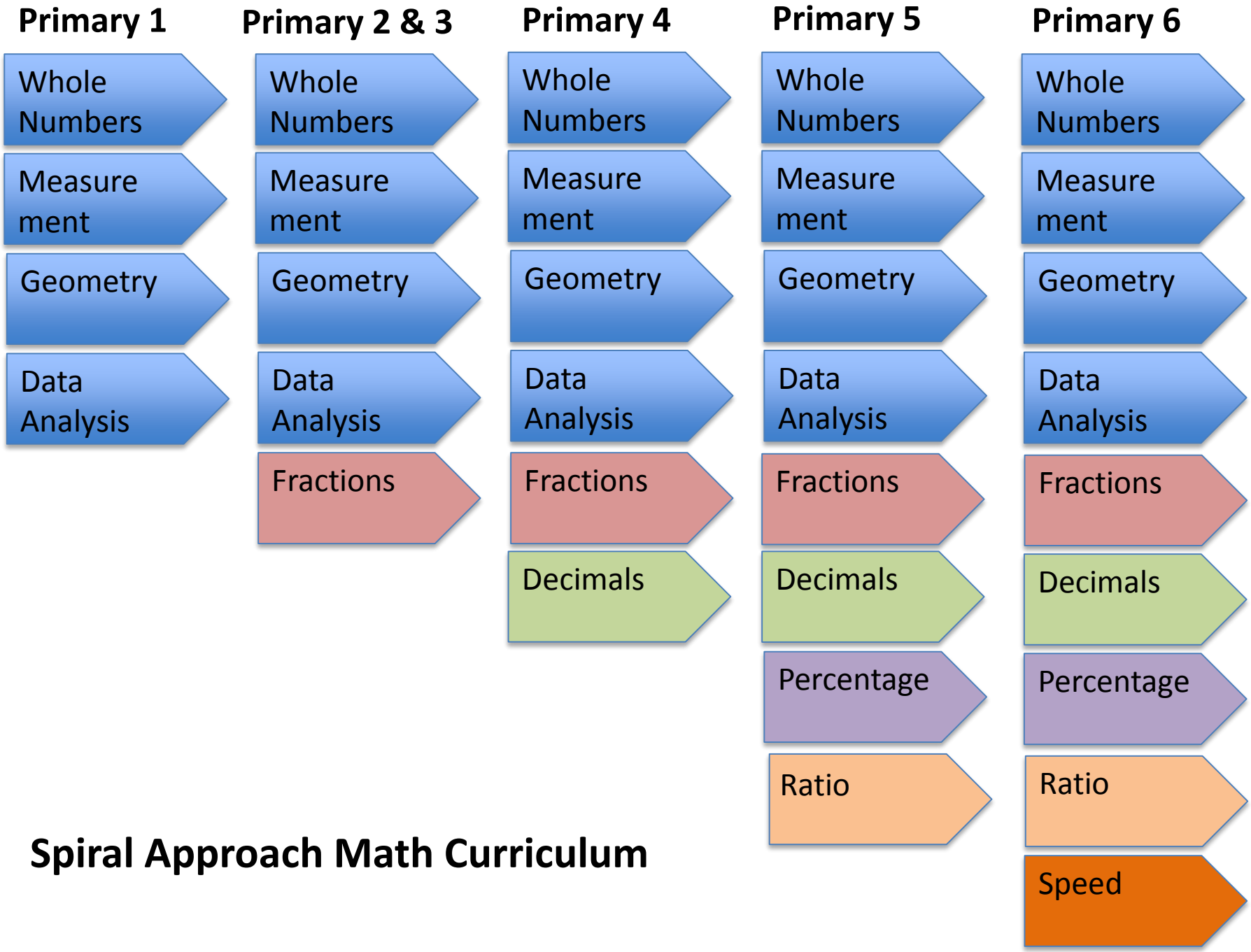
- Select the strategy to solve the problem. More than one strategy may be adopted.
- Try common heuristics
  (Model drawing, systematic listing, find a pattern, draw a diagram)

Step 3: Do

- Use computational skills – add, subtract, multiply, divide
- Use mathematical tools – ruler, metre ruler
- Use thinking skills – classifying, comparing, sequencing, identifying pattern

Step 4: Check

- Read your question again to make sure you have answered the question.
- Check the working step by step.
- Start with your answer and work backwards and check if the results satisfy the given conditions.

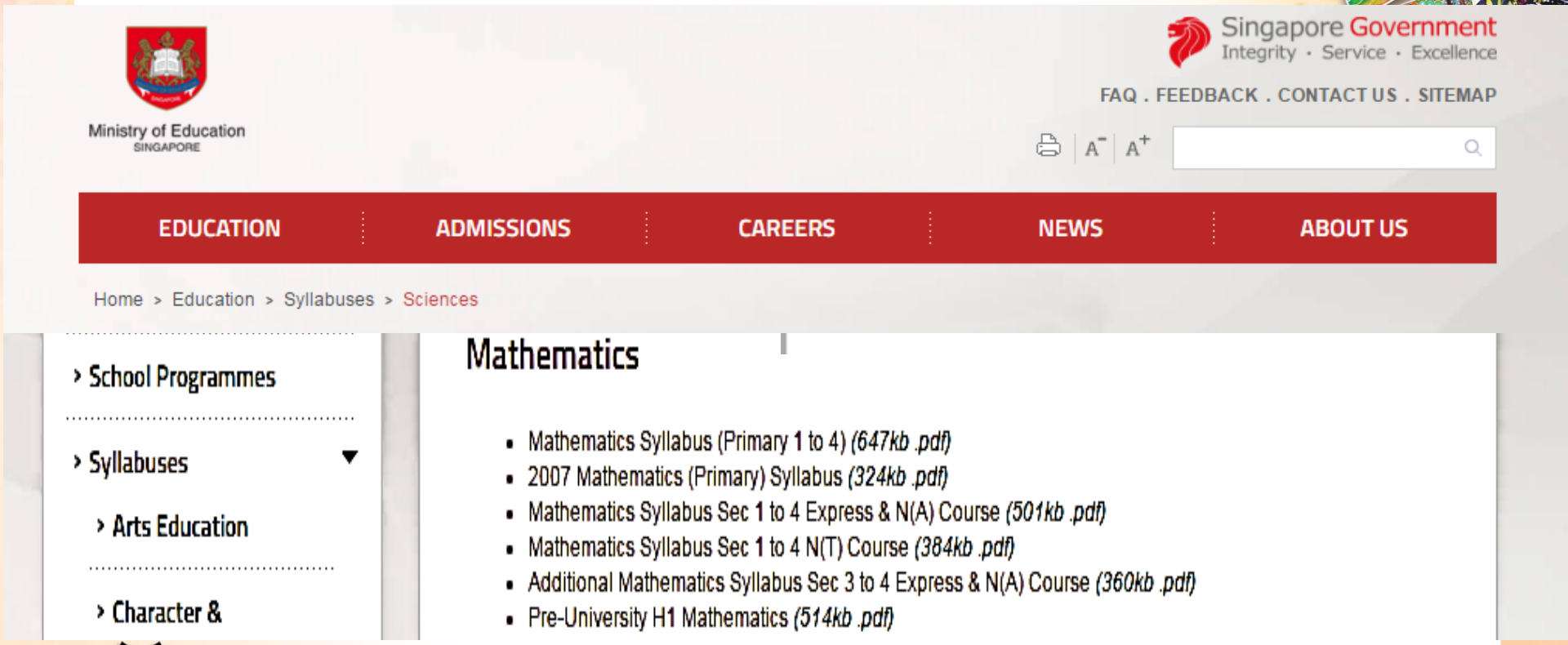


Spiral Approach Math Curriculum

Topics	P 3	P 4
Whole Numbers	• Numbers up to 10000 • Addition & Subtraction • Multiplication & Division	• Numbers up to 100000 • Multiplication & Division • Rounding And Estimation • Factors and Multiples
Money	• Addition & Subtraction	• Decimals - Addition, Subtraction, Multiplication and Division
Measurement	• Length, Mass and Volume • Time	• Time (24 Hour Clock)
Geometry	• Angles • Parallel and Perpendicular Lines • Area and Perimeter (Squares and Rectangles)	• Measurement and Drawing of Angles • Turns and 8-point Compass • Area and Perimeter (Squares, Rectangles and Composite Figures) • Symmetry
Data Representation and Interpretation	• Bar Graphs	• Tables • Line Graphs
Fractions	• Addition and Subtraction • Equivalent Fractions	• Mixed Numbers • Improper Fractions • Fraction of A Set

Mathematics Syllabus (MOE)

https://www.moe.gov.sg/docs/default-source/document/education/syllabuses/sciences/files/mathematics-syllabus-(primary-1-to-4).pdf



Books and Materials Used

- *My Pals Are Here!* Pupil's Book 4A and 4B
- *My Pals Are Here!* Workbook 4A and 4B
- *My Pals Are Here!* Topical Tests
- P4 Heuristics Worksheets
- Math File (red folder)
- Math Bank Book
- *My Pals Are Here!* Homework 4A and 4B

Whole School Heuristics Approach

No.	Heuristics	P1	P2	P3	P4	P5	P6
1	Model Drawing: Part and Whole	√	√	√	√		
2	Model Drawing: Comparison	√	√	√	√		
3	Model Drawing: Multiplication and Division		√	√			
4	Model Drawing: Before and After			√	√	√	√
5	Systematic Listing	√	√	√	√	√	√
6	Find a Pattern	√	√	√	√	√	√
7	Draw a Diagram	√					√
8	Restate The Problem					√	
9	Guess and Check			√	√	√	√
10	Working Backwards			√		√	√
11	Make an Assumption				√	√	√

Bar Model Method

Emphasis is placed on teaching pupils to use the bar model method to solve word problems that include part- whole, comparison and change situations.

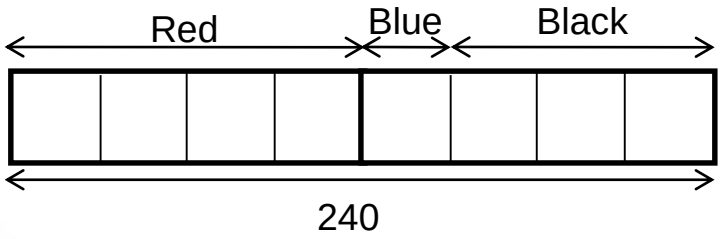
- Primary 1 – Introduction to Part & Whole and Comparison models
- Primary 2 – Multiplication & Division
- Primary 3 to 6 – Before and After model and more advanced techniques in the method are taught

http://www.thesingaporemaths.com/index.html

(A teaching website with ready to run lessons on Model Drawing and other problem solving strategies)

Presentation of Answers

Alice bought 240 markers for her office. $\frac{1}{2}$ of them were red markers, $\frac{1}{8}$ of them were blue markers and the rest were black markers. How many black markers did she buy?



Workings

8 units(total) = 240
1 unit = 240 ÷ 8
= 30
3 units = 30 x 3
= 90

Ans : 90 Black Markers

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Types of Assessments

When are pupils assessed?	Non-weighted Assessments	Weighted Assessments
Term 1 to Term 4	• Hands-on activities • Maths Trail • Maths Practices eg. workbook exercises, class worksheets heuristics worksheets • Mental Sums • Questioning and Feedbacks	• Mini Test 1 and 2 • Written Exam (SA1 and SA2) *** Dates and details will be provided**

Common codes used during marking of Maths questions/word problems

Codes	Representations
WM	Wrong method to arrive at the same answer
CC	Careless calculation (method is correct)
TE	Transfer Error (within solution)
MR	Misread (From question to solution)
MC	Missing sentence tags/captions

Expectations

- Listen and participate actively
- Be on task
- Be prepared

  - bring the necessary books

  - handing in work on time
- Ask when in doubt
- Take pride in her work

  - check through, neat handwriting
- Persevere – Keep Trying and Don’t Give Up

Math Tips for Parents

- Work and communicate closely with your child's Maths Teacher.
- Follow up on homework – ask questions that guide without telling them the answer.
- Train your child to show proper and detailed working steps.
- Train your child to check for accuracy.
- Relate Math concepts to daily life examples eg.
  Is the height of the table longer or shorter than one metre?
- Play mathematical games / puzzles.
- Provide a positive and conducive environment
  – encourage and praise your child's effort.

Ask good questions

Prompt Further Thinking

- How do you know that …?
- What does this tell us about …?
- How can we explain …?
- What did you see / know ?
- What did you see/ know that makes you say so?

Probe Understanding

- Is it possible that …? Give examples
- What would happen if …?
- Why …?
- Why not …?

Programmes and Activities

- Maths @ Recess Games
- Maths Quiz
- Maths Trail
- Drama in Maths
- HGS e-Learning portal: MC Online:

  http://www.mconline.sg

Mathematics Educational Websites

Topic	Website
Whole Numbers	http://nlvm.usu.edu/ http://www.crickweb.co.uk/ http://www.numbernut.com/ http://www.learningplanet.com/
Addition & Subtraction	http://www.bbc.co.uk/skillswise/ http://www.kidsnumbers.com/ http://www.aaamath.com/
Multiplication Tables	http://fun4thebrain.com/ http://www.ictgames.com/ http://www.apples4theteacher.com/ http://www.multiplication.com/games
Model Drawing	http://www.thesingaporemaths.com/index.html http://www.mathplayground.com/thinkingblocks.html
Shapes and Patterns	http://nlvm.usu.edu/ *(click Tangram Challenge)* http://www.primarygames.com

+Venture in Maths Magazine

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Primary 4 Maths Teachers

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Thank You

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