

Recommended Remediation Strategies  
for Parents and Guardians to support  
Students' development of Core Content  
and Skills in Mathematics:  
**FORM ONE – FORM THREE**

CURRICULUM PLANNING AND DEVELOPMENT DIVISION  
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## INTRODUCTION

The **Recommended Remediation Strategies for Parents and Guardians to support Students' development of Core Content and Skills in Mathematics FORM ONE – FORM THREE** document has been produced to provide strategies for parents and guardians to support the development of their children's content and skills, to mitigate learning loss due to the COVID-19 Pandemic.

Diagnostic tests were developed and administered to all students in classes from Form One to Form Three in Secondary Government and Government Assisted Schools. These tests were based on the content strands: Number; Number Operations and Number Theory; Algebra; Sets, Relations and Functions; Measurement; Geometry; and Statistics as identified in the Curriculum Guide for Mathematics at the Lower Secondary Level.

A response to the findings from these tests is a set of recommended strategies for remediation per strand or subtopic. They are being suggested as a guide to assist parents and guardians in developing students' understanding by engaging students in activities which complement and reinforce classroom instruction, while students are at home in their natural environment.

The recommendations are structured to sequentially develop the students' understanding of concept and skill in each strand. Parents and guardians are therefore invited to **use the strategies in sequence**.

Developed by  
The Mathematics Unit  
Curriculum Planning and Development Division  
Ministry of Education, GORTT  
(November 2021)

# SECONDARY

## RECOMMENDATIONS FOR PARENTS

### FORMS ONE, TWO & THREE

#### NUMBER OPERATIONS AND NUMBER THEORY

- Allow your child to use measuring cups and measuring spoons in recipes.
- Encourage your child to calculate the quantities for multiple/fractions of the recipe.



- Talk the language of fractions when mixing liquids – making juice, adding bleach to water, mixing fertilizer for the garden.

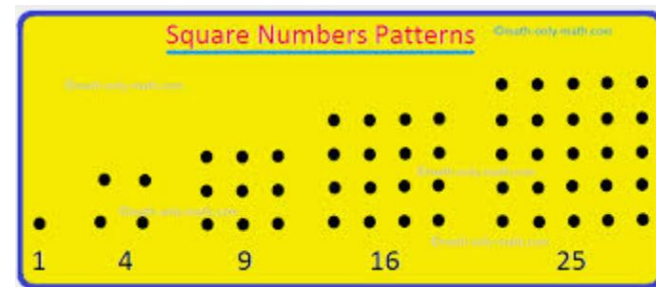
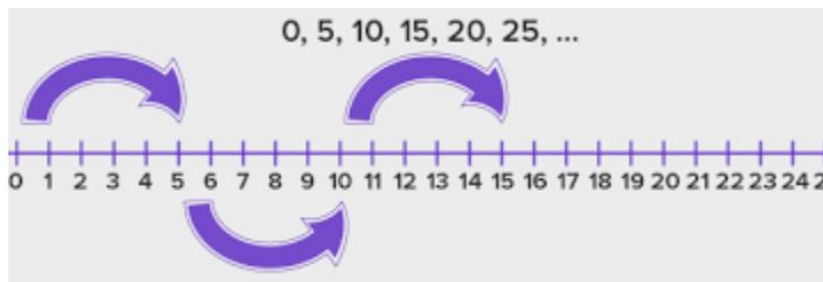


- Use the language of fractions when sharing fruits, money, food.



## NUMBER OPERATIONS AND NUMBER THEORY

- Use fractions when stipulating time: you have quarter of an hour to get to the shop and back.
- When cooking, if the recipe is for 6 servings, ask your child to explain what he or she would need to do to work out the quantities of ingredients for 3, 4 or 10 servings.
- Help your child understand patterns by showing the repeating at least three times. For example, in the pattern 64, 32, 16, 8, the pattern could be described as divide the number by 2, divide the number by 2, divide the number by 2.
- Create a numerical pattern then ask your child to predict the number that will appear in a later term or place in the pattern. For example, ask your ask to predict the number that will appear in the ninth place in a pattern such as 4, 9, 15, 22, 30, 39



- Allow your child to explore a variety of ways that patterns can help him or her remember mathematics facts. For example, if your child cannot recall the product (answer) of  $6 \times 4$  but knows that  $6 \times 2 = 12$ , then he or she can apply the knowledge of the two times table to the four times table by using the strategy of doubling. When the product (answer) of  $6 \times 2$  is doubled, it is the same as the product (answer) of  $6 \times 4$ .

## NUMBER OPERATIONS AND NUMBER THEORY

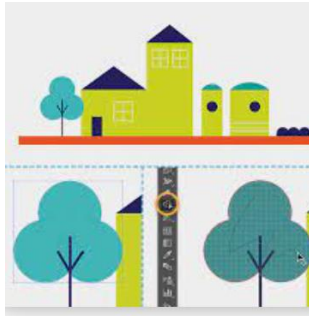
- Encourage your child to read nutrition labels. Have them calculate the percent of a specific nutrient in each item.

Nutrition Facts	
6 servings per container	
<b>Serving size</b>	<b>1 cup (230g)</b>
<b>Amount per serving</b>	
<b>Calories</b>	<b>245</b>
% Daily Value*	
<b>Total Fat</b> 12g	<b>14%</b>
Saturated Fat 2g	<b>10%</b>
Trans Fat 0g	
<b>Cholesterol</b> 8mg	<b>3%</b>
<b>Sodium</b> 210mg	<b>9%</b>
<b>Total Carbohydrate</b> 34g	<b>12%</b>
Dietary Fiber 7g	<b>25%</b>
Total Sugars 5g	
Includes 4g Added Sugars	<b>8%</b>
<b>Protein</b> 11g	
Vit. D 4mcg 20%    Calcium 210mg 16%	
Iron 3mg 15%    Potassium 380mg 8%	
<small>*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.</small>	

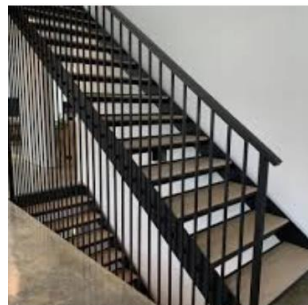
- Encourage your child to access additional support on the Ministry of Education's learning platform at [learn.moe.gov.tt](https://learn.moe.gov.tt)

## GEOMETRY

- Create a game of spotting solids/shapes and naming them while on a walk/drive.



- Play a game of spotting parallel lines in everyday objects – ladder, window, stairs.



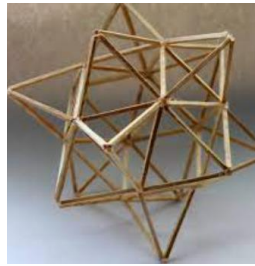
- Create a bike trail with chalk in the yard using parallel lines.





## GEOMETRY

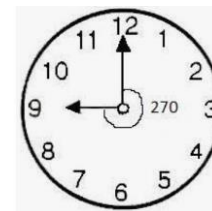
- Build structures with your child using match sticks and a description.



- Allow your child to pack the refrigerator/cupboard/laundry – builds his/her spatial ability and the child gains a sense of volume and capacity in a real-world context.
- When travelling together, ask your child to identify objects with the same size and shape.
- Talk about the shapes made when you cut straight through vegetables or fruit. Cross section, uniformity, symmetry.



- Use the hands of the clock to state whether the angles formed are more than or less than a right angle.

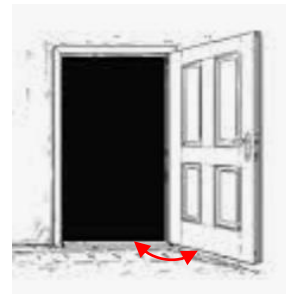
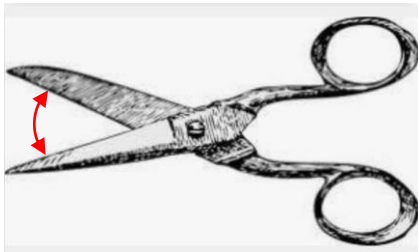


## GEOMETRY

- Ask your child to form angles using his/her hands.



- Make shadows on the ground or on a wall using your body or hands and talk about the shapes and angles.
- Assist your child in recognizing and identifying real-world examples of right angles (e.g., the corner of a picture frame).
- Identify angles in everyday objects and ask your child if it is more than or less than a right angle.



## MEASUREMENT

- Encourage your child to find the time to do activities such as baking, going to the pharmacy, making a kite, going for a walk.
- Arrange various objects (e.g., books, boxes, and cans) by various size and measurement (e.g., length, weight, and volume) attributes. Talk with your child about how they are arranged using comparison words like “taller,” “shorter,” “narrower,” “wider,” “heaviest,” “lightest,” “more,” “less,” “about,” and “same.”



- Review equivalent names for measurements. For example, “How many millilitres are there in one litre?”
- When cooking or baking, involve your child in determining what the measurements given in grams would be in kilograms (or the reverse).
- When building something, have your child help you discover what the measurements given in centimetres would be in metres.
- Record and compare the height of family members and talk about who is ‘taller’ and ‘shorter’

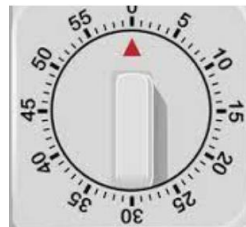


## MEASUREMENT

- During trips, have your child convert the number of kilometres travelled to metres.
- When travelling with your child, discuss the best route to take and why.



- When cooking, allow your child to set the kitchen timer.



- Engage your child in working out elapsed time given the start time and end time.
- Allow them to work out possible departure time given the length of the journey and the appointment time.
- Make a game of telling time using the 24-hour clock.



## MEASUREMENT

- Draw an analog clock face with the hour and minute hands showing a specific time. Ask your child to record the time shown in different ways.
- Engage your child in activities such as market purchases, grocery shopping and weight loss program.
- Encourage your child to read labels.
- Allow your child to determine the best buy in terms of weight and price.
- Allow your child to use a scale: kitchen, bathroom, luggage.



- Give your child scenarios that will involve reasoning and ask them to help solve the scenario:  
E.g. Wendy was allowed 25kg luggage. Her suitcase was 37.2kg. By how many kilograms was her luggage overweight?



## MEASUREMENT

- When shopping, if there is a 10% off sale ask them to work out the new cost of the product and the savings.



- Select five products from a catalogue, then calculate what the cost would be if there was a 50% sale. Does it make a difference if you add up the items, and then deduct 50%, or if each item is reduced by 50% then totalled?



## MEASUREMENT

- Encourage your child to save a percentage of their allowance and work out how much this would be. For example, how much money would you have if you saved 30% each week?
- Negotiate increases in pocket money as percentages. For example, a 5% increase on an allowance of \$150 per week would be how much money per year? Is this better than a 5% increase on an allowance of \$600 per month in one year? Allow them to explain.
- Calculate altogether how much mobile phone services cost per month altogether. What percentage of total cost is spent on data and what percentage on phone calls?
- When supermarket shopping, ask them to keep an estimated running total in their heads of the cost of all the food in the trolley. Turn it into a game and whoever gets the closest to the actual total at the checkouts is the winner.
- Investigate the prices of fresh fruit and vegetables available in the supermarkets compared with market vendors.

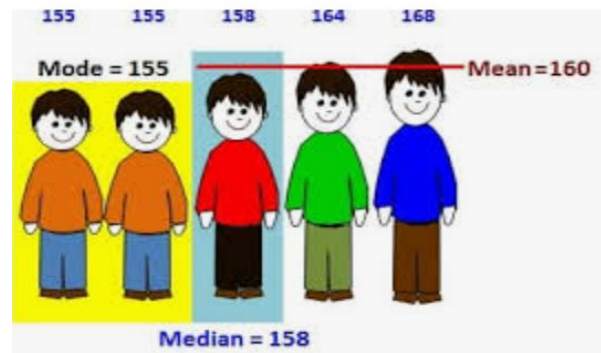


- When filling the car up with fuel, tell them the cost per litre and total cost of the fuel and ask them how they would work out how many litres of fuel went into the car.



## STATISTICS

- Talk to your child about sharing equally.
- Ask your child to explain the differences between mean, median and mode (at the end of the explanation, you should be clear about what these 3 quantities are).



- Encourage a discussion about having a fruit stall- what fruit would you need to stock most? How would you know? Discuss if a parent wants to know how his/her child is doing in school, would he/she need to know what mark the child scored most often? Or would the average mark be more helpful?
- Open a pack of Skittles or M&M's and make a bar graph showing the number of each colour found inside the pack.



- Monitor the weather report for a week, record the temperatures for each day, and then graph the temperatures.
- Track the scores of games played by your favourite team, then graph them over a period of several weeks.



## STATISTICS

- The next time you see a graph in a newspaper on a topic that would interest your child, sit down together and try to interpret it. Work together to answer questions such as, 'What is this graph telling us? How do we know whether the information is true? Is there a different way of representing this information? Is there anything that you don't understand?'
- Read information books with your child and discuss tables and graphs that appear in them.

## ALGEBRA

- Play a game of “What if “with your child.

What if I have a number and when 10 is added to it, I get 22. What is my number?










What if I have a number and when I subtracted 12 from it, I get 22. What is my number?

What if I have a number and I multiply it by 3 and get 81. What was my number?

Encourage your child to make up “what if” questions for you to solve.



- Use fun puzzles to build algebraic thinking skills
- Play mental games to figure out unknown values

			95
			86
			100
123	72	86	109

 = ?     = ?     = ?

## SETS, RELATIONS AND FUNCTIONS

- Give your child the task of organising his socks: introduce relations which sock can be paired this sock. Describe what rule they used to match the socks.



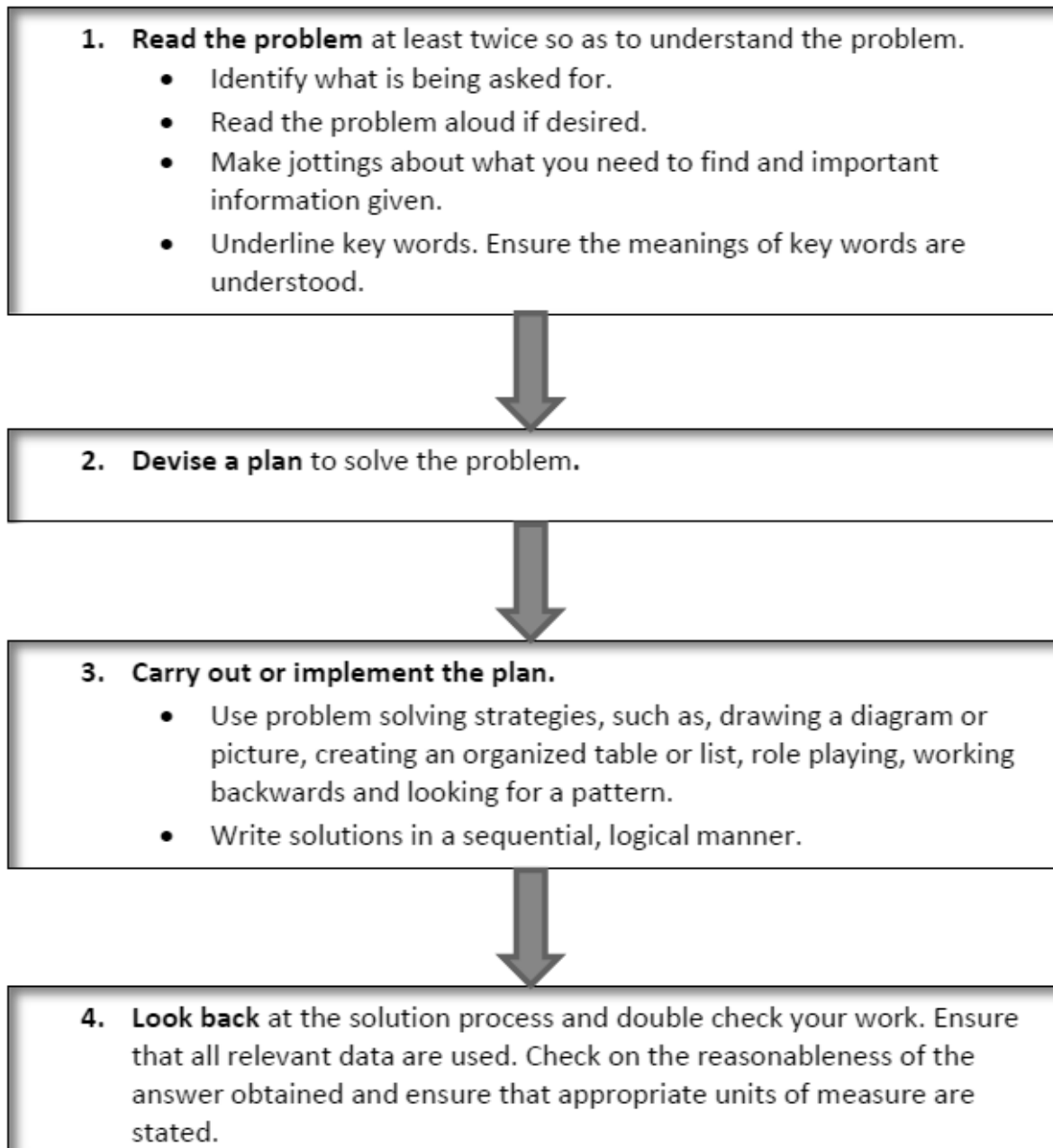
Does each sock have a match?

What happens if identical socks appeared more than once on the separate lines? What are all the possible pairs?

# APPENDICES

## Appendix 1.

### George Polya's Four-Step Problem Solving Strategy



## Appendix 2.

### Polya's 4-Step Approach to Problem Solving:

Using Polya's 4-Step Approach to Problem Solving:

#### Step 1. – ANALYSIS – Understand the problem

I must answer these questions:-

- What am I being asked?
- What important information was I given?
- What key words are there?

#### Step 2. – PLANNING – Devise a plan

What problem solving strategy can I use?

- Draw a Picture
- Act it out
- Use a model
- Look for a Pattern
- Guess and Check
- Work backward
- Make a table or chart
- Simpler form of the problem
- Make an organised list
- Write an equation

#### Step 3. – IMPLEMENTATION – Carry out the plan

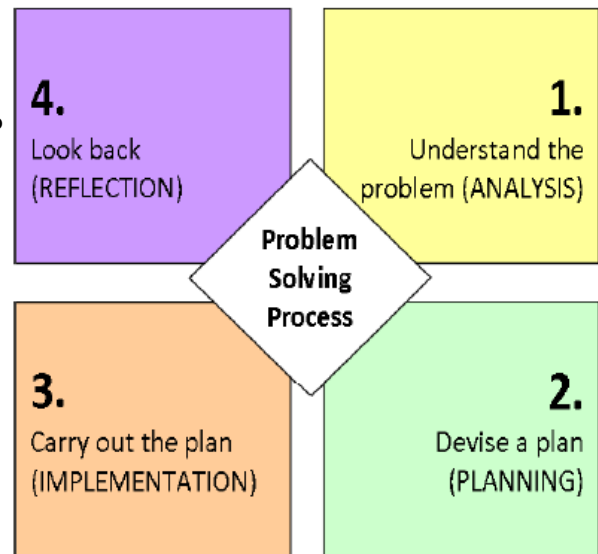
To solve the problem I must:-

- Apply the strategy chosen
- Obtain a solution
- Write the solution in a sequential, logical manner
- If no solution is obtained, repeat steps 1 to 3

#### Step 4. – REFLECTION – Looking back / Review the solution:

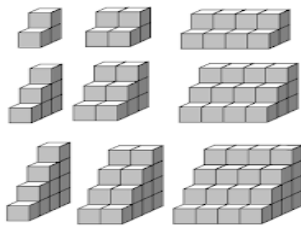
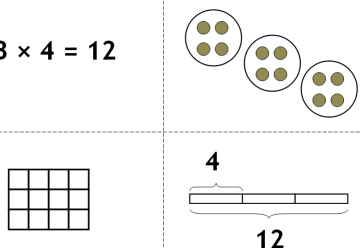

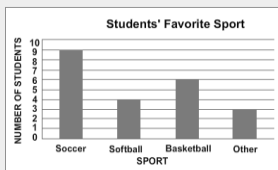
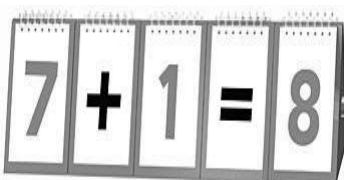



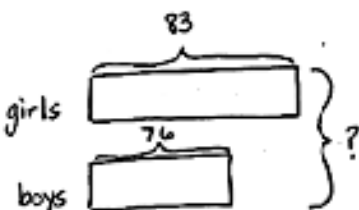
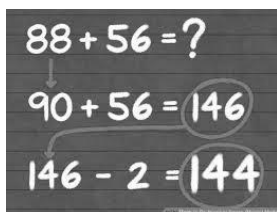

In reflecting, I will:-

- Look back at the solution process and double check my work
- Ensure that all relevant data are used
- Check on the reasonableness of the answer obtained
- Try an alternative approach



## Appendix 3.

### Problem Solving Strategies

<b>Look for a Pattern</b> 	<b>Try a Simpler Problem</b> <del><math>600 + 300 = ?</math></del> $6 + 3 = 9$ $600 + 300 = 900$	<b>Make a Model</b> $3 \times 4 = 12$ 										
<b>Guess and Check</b> 	<b>Make a List, Graph or Chart</b> <p>Students' Favorite Sport</p> <table><tr><th>SPORT</th><th>NUMBER OF STUDENTS</th></tr><tr><td>Soccer</td><td>9</td></tr><tr><td>Softball</td><td>4</td></tr><tr><td>Basketball</td><td>6</td></tr><tr><td>Other</td><td>3</td></tr></table> 	SPORT	NUMBER OF STUDENTS	Soccer	9	Softball	4	Basketball	6	Other	3	<b>Create a Number Sentence</b> 
SPORT	NUMBER OF STUDENTS											
Soccer	9											
Softball	4											
Basketball	6											
Other	3											
<b>Work Backwards</b> 	<b>Use Reasoning</b> 	<b>Act it Out</b> 										
<b>Draw a Picture</b> 	<b>Use Mental Math</b> 	<b>Use your Fingers</b> 										

## REFERENCES

- Bobowski, K (2018). *Parent strategies for improving their child's math*. (2020). Teach. Learn. Grow. Retrieved from: <https://www.nwea.org/blog/2018/parent-strategies-for-improving-their-childs-math/>
- Department of Education and Training Victoria. (2018). *Literacy and Numeracy Tips to Help Your Child Every Day: A Guide for Parents of Children 0-12*. State of Victoria.
- New South Wales Department of Education. (2021). *Helping your child with maths*. New South Wales Government. Retrieved from: <https://education.nsw.gov.au/parents-and-carers/learning/maths/maths-tips/helping-your-child-with-primary-school-maths>
- Nolan, T. (2014). *Numeracy Information for Parents and Carers*. Comprehensive School in Wrexham for 11 - 18 Year Olds. Retrieved from: <https://www.maelorschool.org.uk/uploads/pages/files/numeracy-guide-for-parents-35-1.pdf>
- Secretariat, O. L., Ontario. Ministry of Education. Parent Engagement Office, & Ontario. Ministry of Education. (2012). *Doing mathematics with your child, kindergarten to grade 6: A parent guide*.