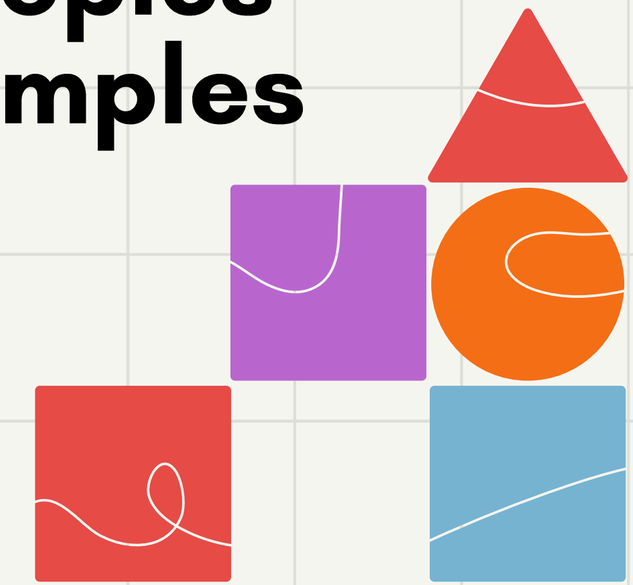
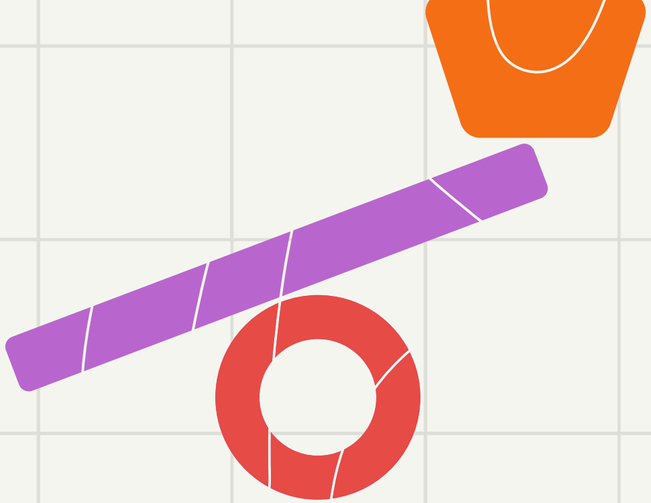
# MATHEMATICS

# SUBJECT-BASED BANDING BRIEFING 2025

# Outline

- Math can be fun!
- STAR approach
- SBB Math exam format and topics
- Question Item types and examples
- Students' common mistakes
- Study tips





# P4 Math Topics

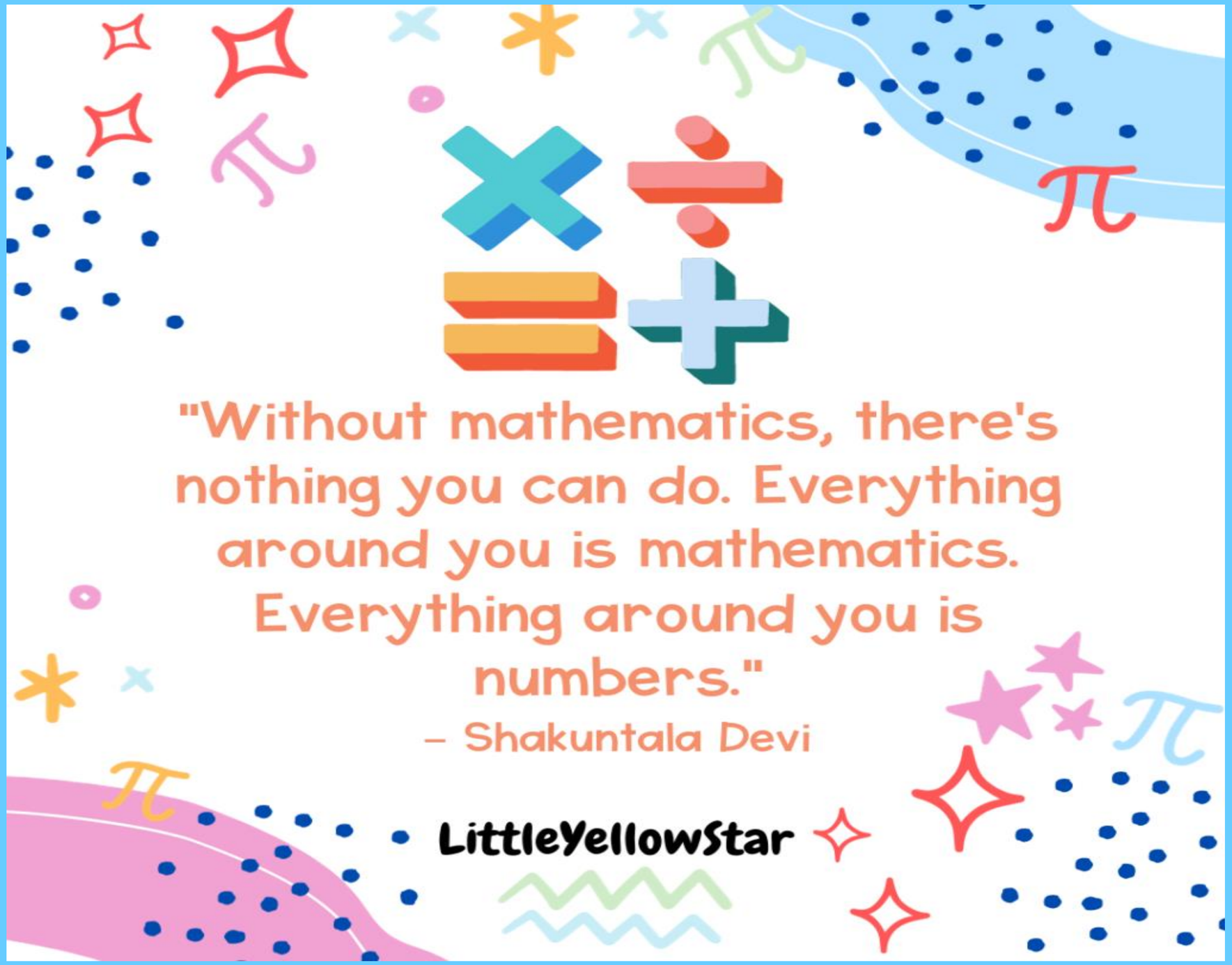
- Numbers To 100 000
- Factors And Multiples
- Four Operations Of Whole Numbers
- Tables And Line Graphs
- Fractions
- Angles
- Squares And Rectangles
- Decimals
- Four Operations Of Decimals
- Pie Charts
- Area And Perimeter
- Nets
- Symmetry

# Have you ever seen your child look like this while doing math?

# Why Does Math Feel Stressful?

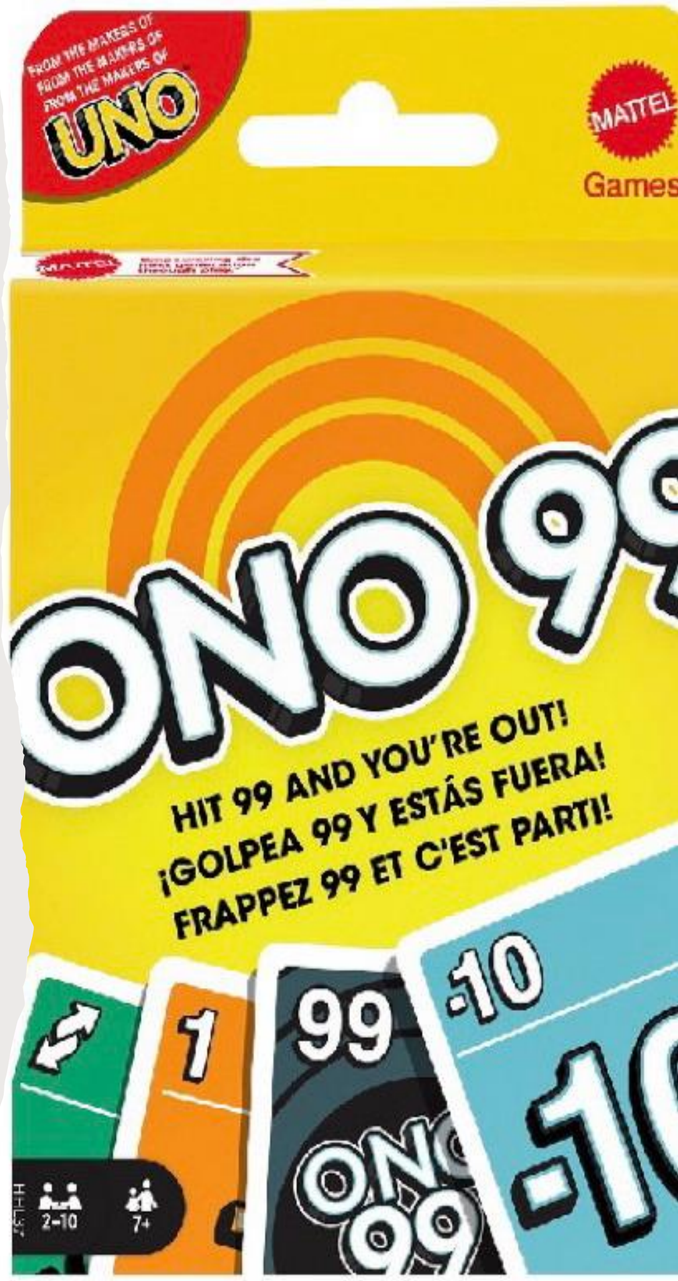
- Pressure to achieve perfect scores.
- Lack of relatable real-life applications.
- Misconceptions about being "bad at math.”
- Focusing on memorisation rather than understanding concepts.

# Can learning of math only be achieved solely through assessment books?


"Without mathematics, there's nothing you can do. Everything around you is mathematics. Everything around you is numbers."
– Shakuntala Devi
LittleYellowStar


# How Math can be made fun to learn at home

1. **Play Math-Based Games**
   - Games:
     - ✓ Monopoly,
     - ✓ UNO ONO 99
     - ✓ Sudoku
     - ✓ Tangram
   - Apps/websites:
     - ✓ Koobits
     - ✓ mathplayground.com




Playing **Monopoly** provides a rich and engaging opportunity for children to practice a variety of math concepts in a fun and interactive way.

**Basic Arithmetic**

**1.Addition and Subtraction**

- Adding money when receiving income or collecting rent.
- Subtracting expenses when buying properties or paying fines.

**2.Multiplication**

- Calculating rent that increases with property improvements (e.g., 4 times the original rent).

**3.Division**

- Splitting money when dividing assets during negotiations.


Playing **Monopoly** provides a rich and engaging opportunity for children to practice a variety of math concepts in a fun and interactive way.

## Money Management

### 1.Counting and Exchanging Money

- Counting bills accurately when making payments or receiving change.
- Exchanging denominations (e.g., trading a $500 bill for smaller ones).

### 2.Budgeting

- Managing limited resources to decide what to spend, save, or invest.


Playing **Monopoly** provides a rich and engaging opportunity for children to practice a variety of math concepts in a fun and interactive way.

## Fractions

### 1.Fractions

- Understanding partial payments (e.g., mortgage values are half the property cost).


Playing **Monopoly** provides a rich and engaging opportunity for children to practice a variety of math concepts in a fun and interactive way.

## Geometry

### 1.Board Layout and Movement

- Navigating the board using spatial awareness and counting spaces based on dice rolls.

# How Math can be made fun to learn at home

2. **Incorporate Math in Everyday Life**
   - Shopping
   - Cooking

A shopping trip to the supermarket offers numerous opportunities for children to explore and learn a variety of math concepts in a real-world context.

**Basic Arithmetic**

**1.Addition and Subtraction**

1. Adding the prices of items in the cart.
2. Subtracting discounts or comparing prices.

**2.Multiplication**

1. Calculating the cost of multiple units of an item (e.g., 3 apples at $0.50 each).

**3.Division**

1. Dividing a bulk package into smaller portions to find the price per unit.

A shopping trip to the supermarket offers numerous opportunities for children to explore and learn a variety of math concepts in a real-world context.

## Money Concepts

**1. Counting Money**

Identifying and counting coins and bills.

**2. Making Change**

Figuring out how much change they would get after a purchase.

**3. Budgeting**

Deciding how to spend a fixed amount of money wisely.

A shopping trip to the supermarket offers numerous opportunities for children to explore and learn a variety of math concepts in a real-world context.

## Fractions

### 1. Understanding Fractions

Reading labels (e.g., "1/4 cup" or "half a dozen").

A shopping trip to the supermarket offers numerous opportunities for children to explore and learn a variety of math concepts in a real-world context.

## Measurement

**1. Weights and Volumes**

Using scales for produce or reading package weights.

**2. Estimating**

Guessing the weight or quantity before measuring.

A shopping trip to the supermarket offers numerous opportunities for children to explore and learn a variety of math concepts in a real-world context.

## Geometry

**1. Shapes and Sizes**

Identifying the shapes of packages or products.

**2. Spatial Awareness**

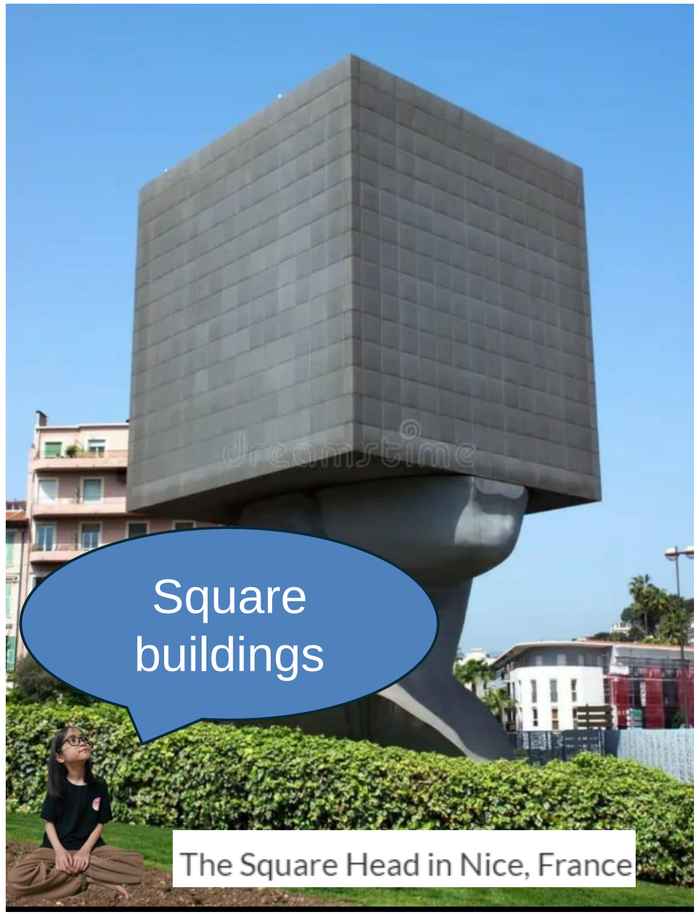
Arranging items in the cart or bags to maximize space.

# How Math can be made fun to learn at home

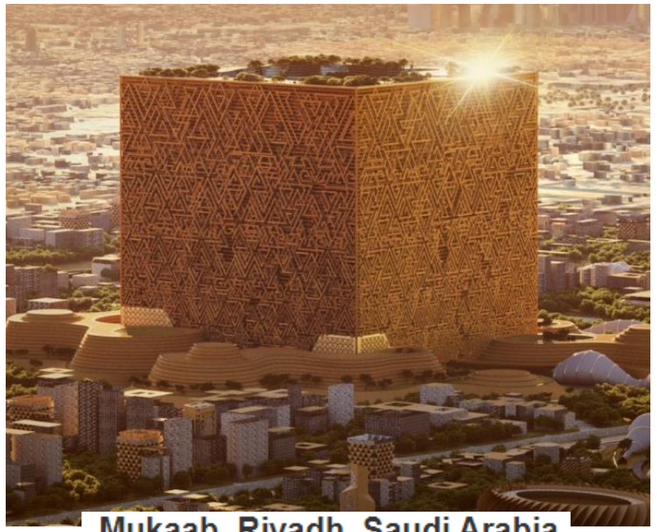
3. **Interactive Activities That You Can Try Together**
   - **Scavenger Hunt:**
     Find objects that match a number or shape.
   - **DIY Math Projects:**
     Create a simple budget for a family outing.
   - **Outdoor Math Fun:**
     Counting stars, measuring distances.


# Project done by P4 students on Squares and Rectangles

Cube House, Westhampton Beach, USA

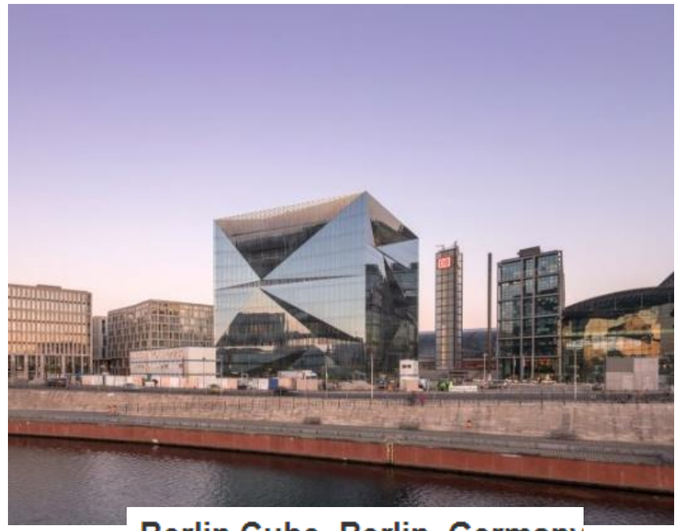



The Square Head in Nice, France



Mukaab, Riyadh, Saudi Arabia

The Orange Cube, Lyon, France,



Berlin Cube, Berlin, Germany

## 4. Be a Supportive Guide

- **Encourage positive self-talk:**
  Instead of saying "I'm bad at math," encourage phrases like "I can get better with practice.“
- **Praise effort, not just results:**
  Focus on the process and hard work rather than just the correct answer.
- **Model perseverance:**

  Show your child that it's okay to make mistakes and that persistence leads to improvement.

# SBB Matters

# SBB Math Exam Format

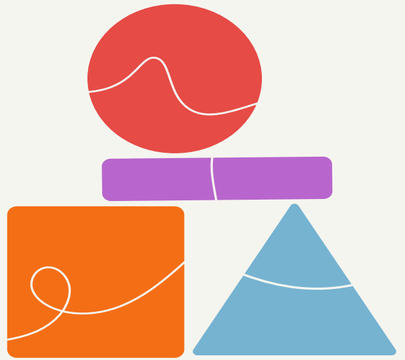
**Duration: 1 hour 45 minutes**

| Booklet | Item type | No. of questions | Mark per question | Weighting |
|---|---|---|---|---|
| A | MCQ (Multiple Choice) | 15 | 2m | 30% |
| B | SAQ (Short-Answer) | 20 | 2m | 40% |
| | LAQ (Long-Answer) | 8 | 3m, 4m | 30% |

# STAR approach in Problem Solving

## How do you solve a Mathematics problem?

- ❑ **S**tudy the problem carefully
- ❑ **T**hink of a strategy
- ❑ **A**ct on the solution
- ❑ **R**eflect on the final answer



# Types of the questions

1. **Recall and perform computation**

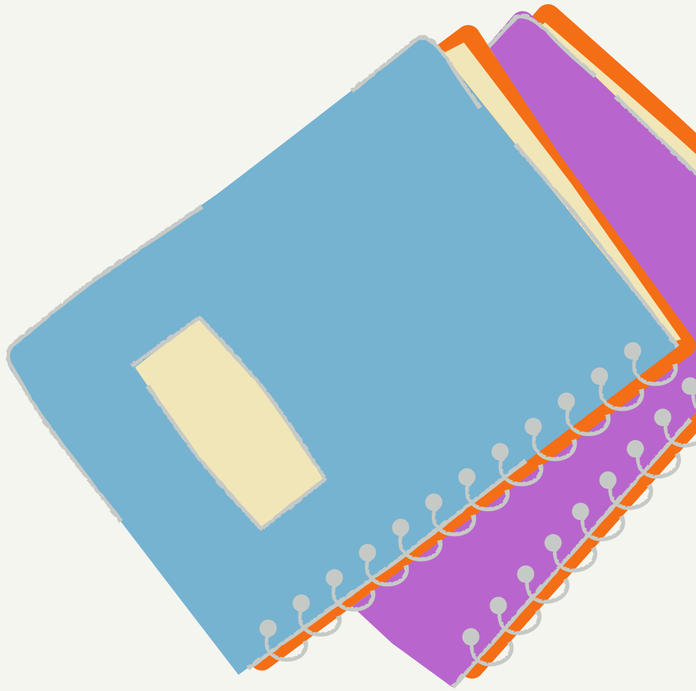
   Recall mathematical facts, concepts, rules and formulae; perform straightforward computations

# Recall and perform computation

## Example 1

What is the value of digit 2 in 23 576?

(1) 20
(2) 200
(3) 2000
(4) 20 000



**Ans: 4**

# Recall and perform computation

## Example 2

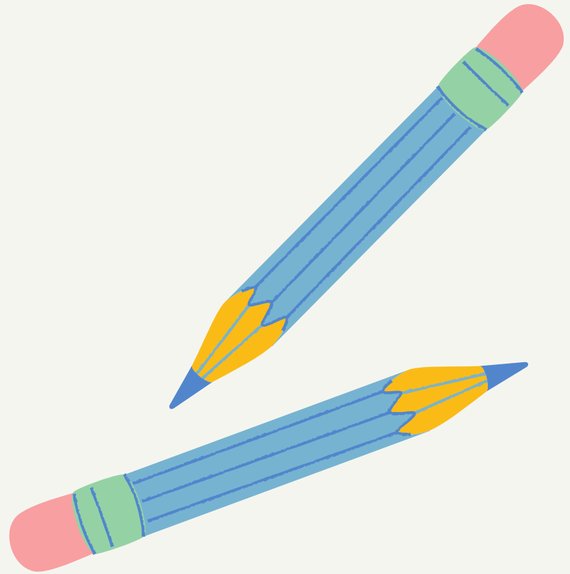
There are 318 boxes of pencils.

Each box has 16 pencils.

How many pencils are there altogether?

318 × 16 = 5088

There are **5088** pencils altogether.



# Types of the questions

1. **Recall and perform computation**

   Recall mathematical facts, concepts, rules and formulae; perform straightforward computations

2. **Understand and apply**

   Interpret information; understand and apply mathematical concepts and skills in a variety of contexts.

# Understand and apply

## Example 3

Alex spent $24 on food and saved the remaining $6.

What fraction of his total money did he save?

(1) $\frac{1}{4}$

(2) $\frac{1}{5}$

(3) $\frac{4}{5}$

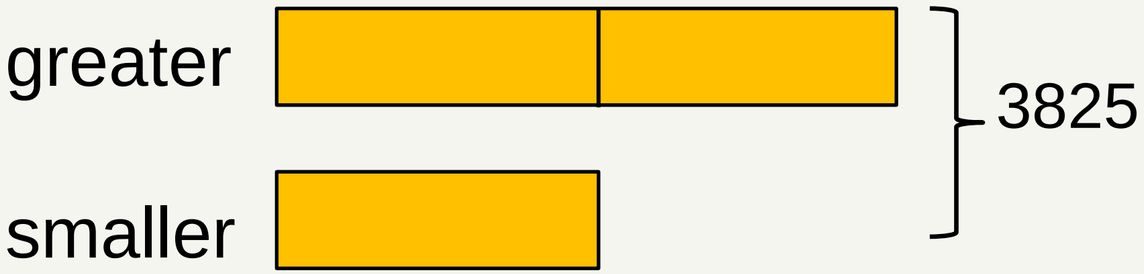
(4) $\frac{3}{4}$

**Ans: 2**

# Understand and apply

## Example 4

The sum of two numbers is 3825. The greater number is twice as much as the smaller number. What is the greater number?




3 units = 3825
1 unit = 3825 ÷ 3 = 1275
2 units = 1275 x 2 = 2550

The greater number is **2550**.

# Types of the questions

1. **Recall and perform computation**

   Recall mathematical facts, concepts, rules and formulae; perform straightforward computations

2. **Understand and apply**

   Interpret information; understand and apply mathematical concepts and skills in a variety of contexts.

3. **Reason and analyse**

   Reason mathematically; analyse information and make inferences;  select appropriate strategies to solve problems

# Reason and analyse

## Example 5

Mr Tan shared some coins with a group of children.
If he gave 8 coins to each child, he would have 3 coins left.
If he gave 9 coins to each child, he needed 2 more coins.
How many coins did Mr Tan have?

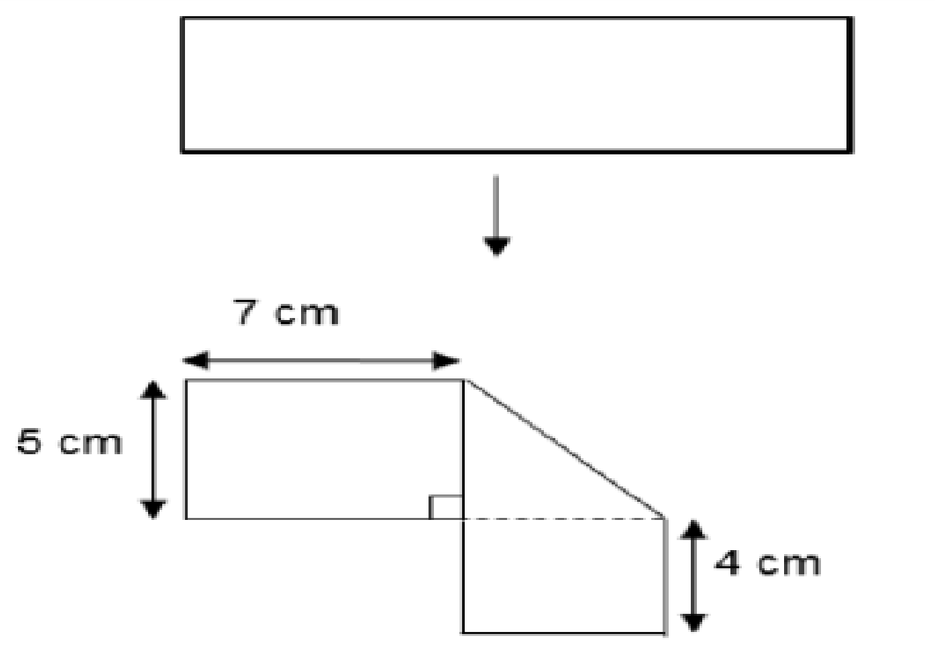
| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Multiples of 8 | 8 | 16 | 24 | 32 | 40 | …… |
| 3 coins left (+3): | 11 | 19 | 27 | 36 | 43 | …… |
| Multiples of 9 | 9 | 18 | 27 | 36 | 45 | …… |
| Need 2 coins (-2): | 7 | 16 | 25 | 34 | 43 | …… |

Mr Tan had **43** coins.

# Reason and analyse

## Example 6

A rectangular piece of paper is folded to form the shape shown below. What is the area of the rectangular piece of paper before it was folded?



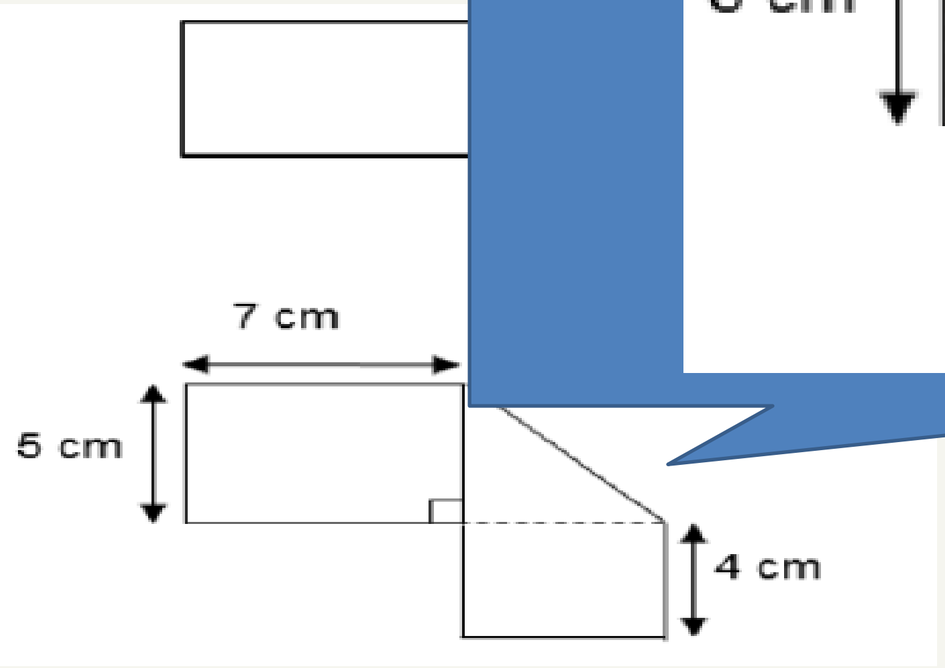
# Reason

## Example (

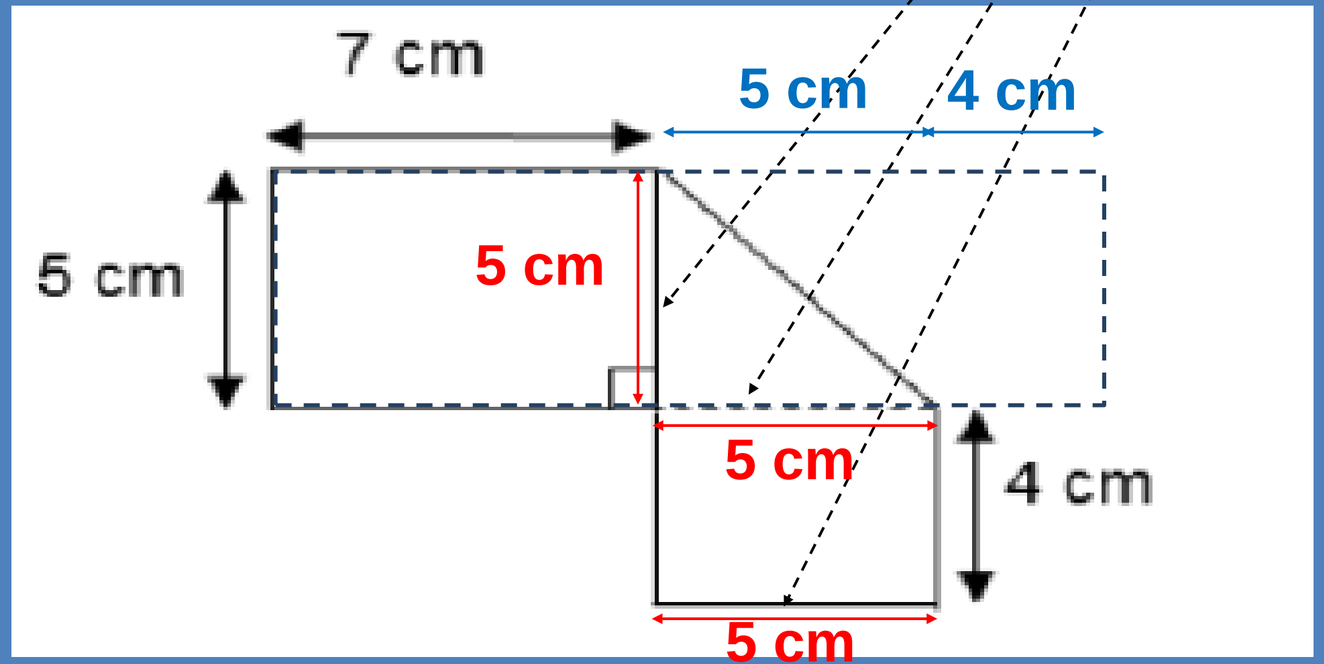
A rectangular

below. What

it was folded




Reasoning: these sides have the *same length*




Area = L x B

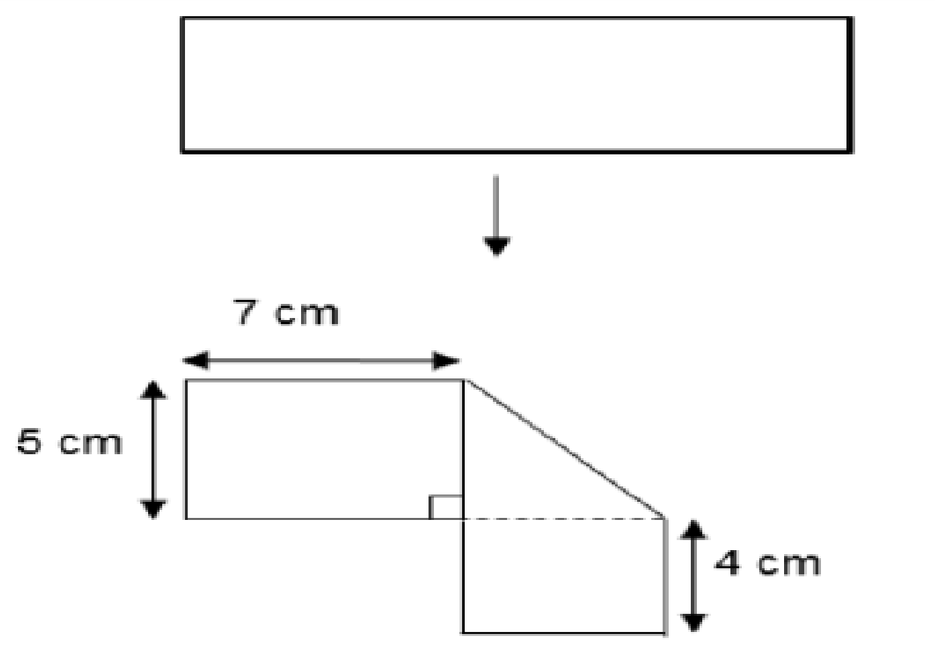
= 16 cm x 5 cm

= 80 $cm^2$

# Reason and analyse

## Example 6

A rectangular piece of paper is folded to form the shape shown below. What is the area of the rectangular piece of paper before it was folded?




Length = 7cm + 5cm + 4cm
= 16cm

Breadth = 5cm

Area = L x B
= 16 cm x 5 cm
= 80 $cm^2$

# 1. Transfer error

Example: 9 x $12 = $108

$180 ÷ 2 = $90

Mr Ali has $9.

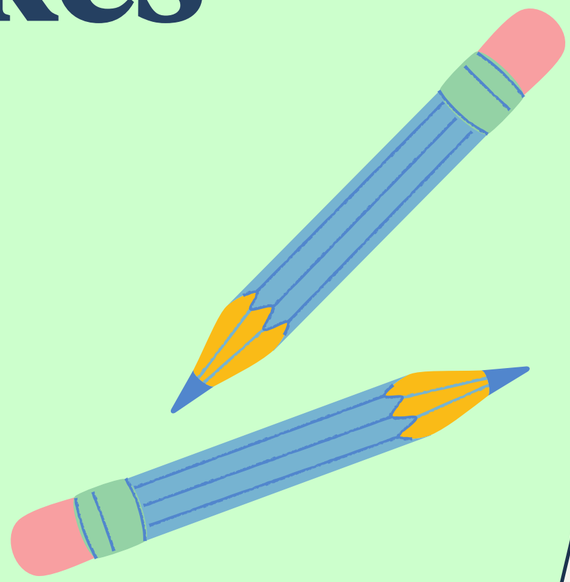
# Student's Common Mistakes

# Student's Common Mistakes

## 2. Omission or incorrect units of measurement

Example:

- ✓ 1 km = 100 m (Wrong fact)
- ✓ The volume of the water is 200. (Missing unit)



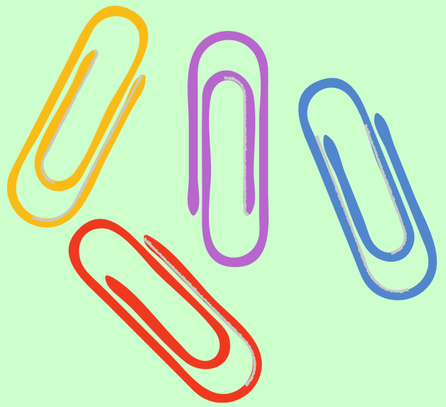
# 3. Writing incorrect Math equations

Example: 20 + 10 = 30 + 5 = 35

not equal

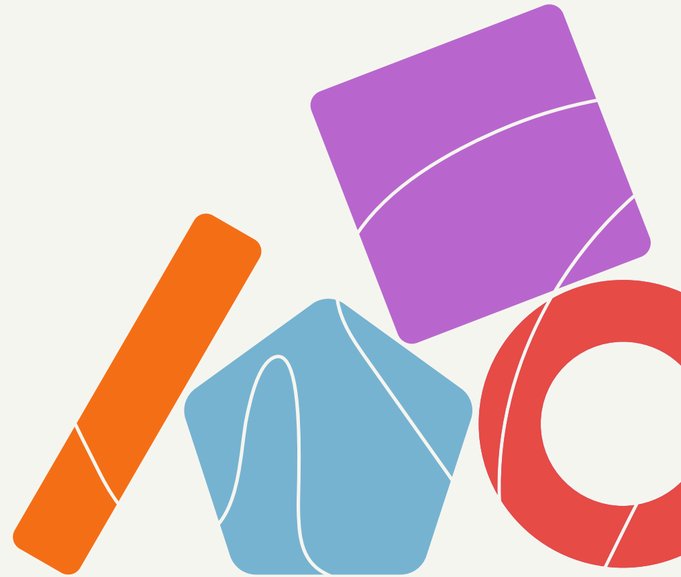
(Wrong equations as the 2 steps are combined into one)

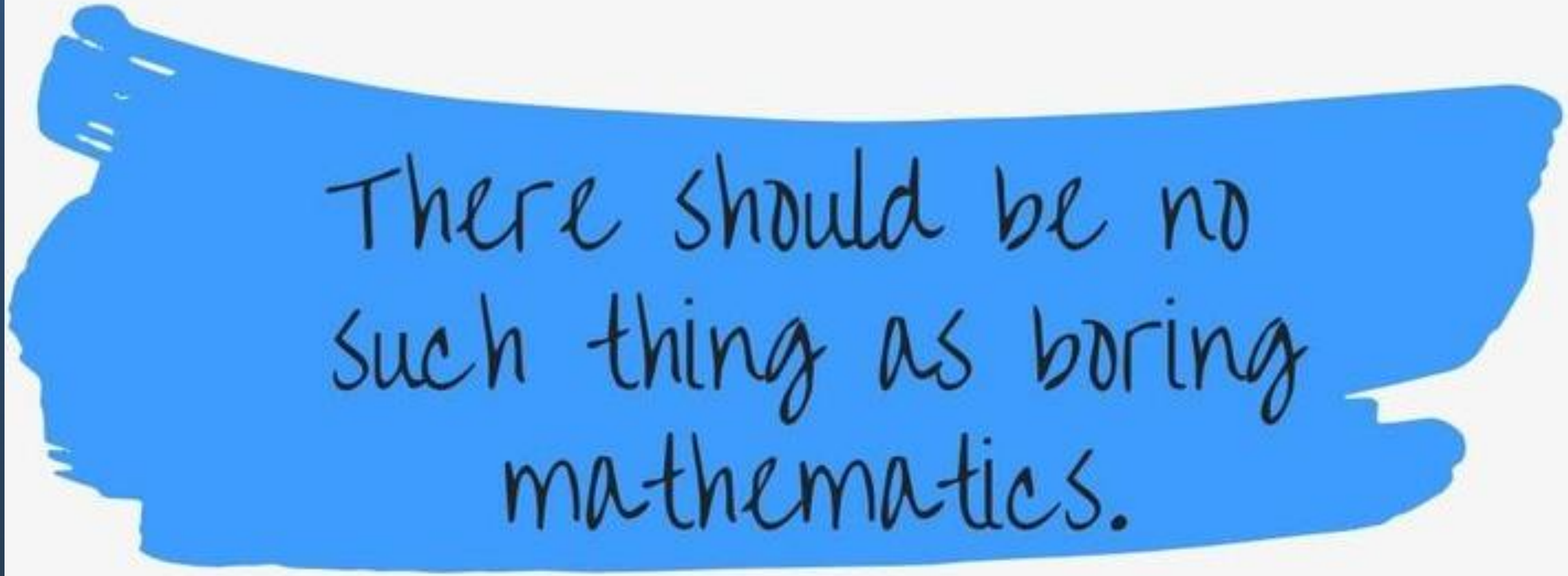
# Student's Common Mistakes



# How To Do Well in Examination

- ✓ Underline and annotate important information in word problems.
- ✓ Do not dwell too long on a question. Skip questions when unsure of the approach to solve the question and return to complete them later.
- ✓ Attempt all questions.
- ✓ Show all the Math equations and workings.
- ✓ Check the accuracy of the calculations.

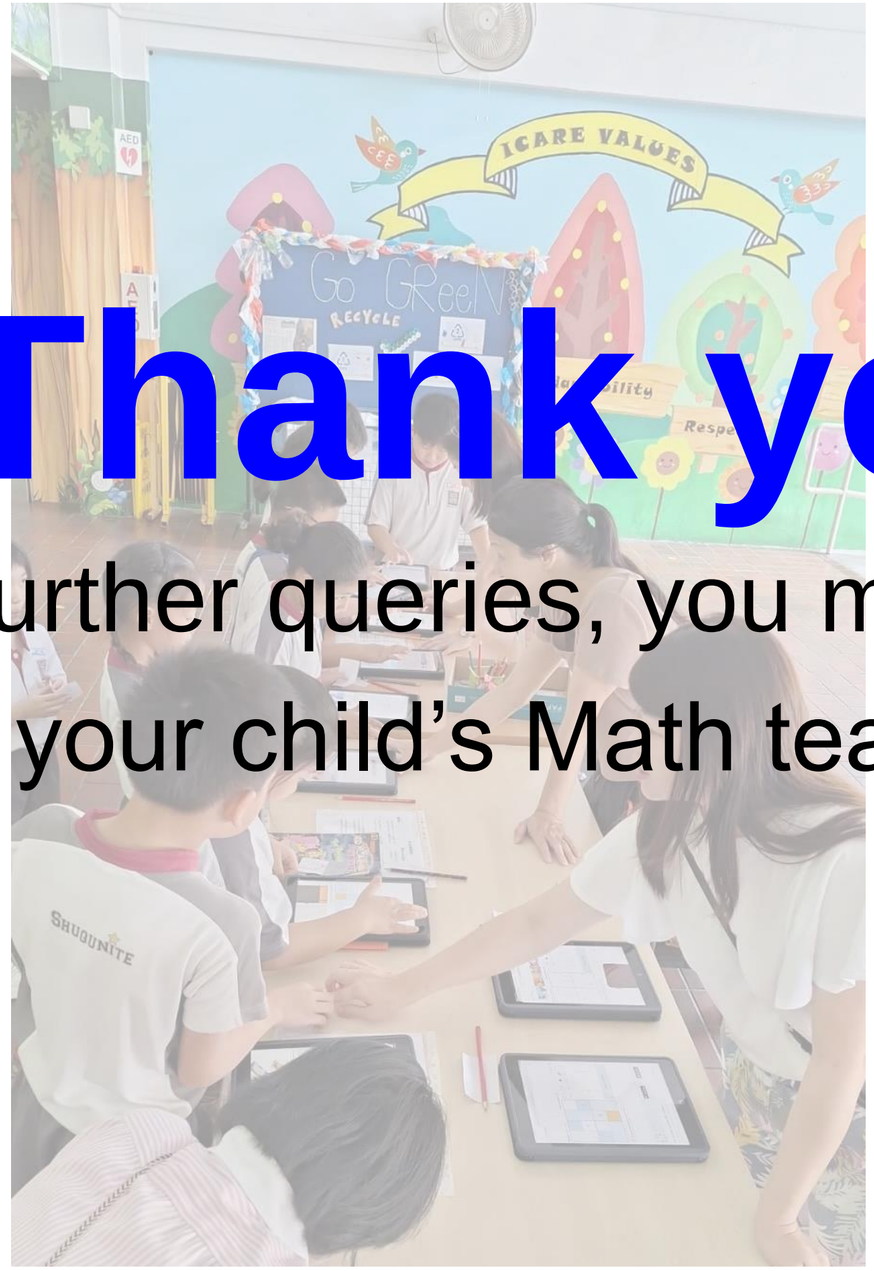


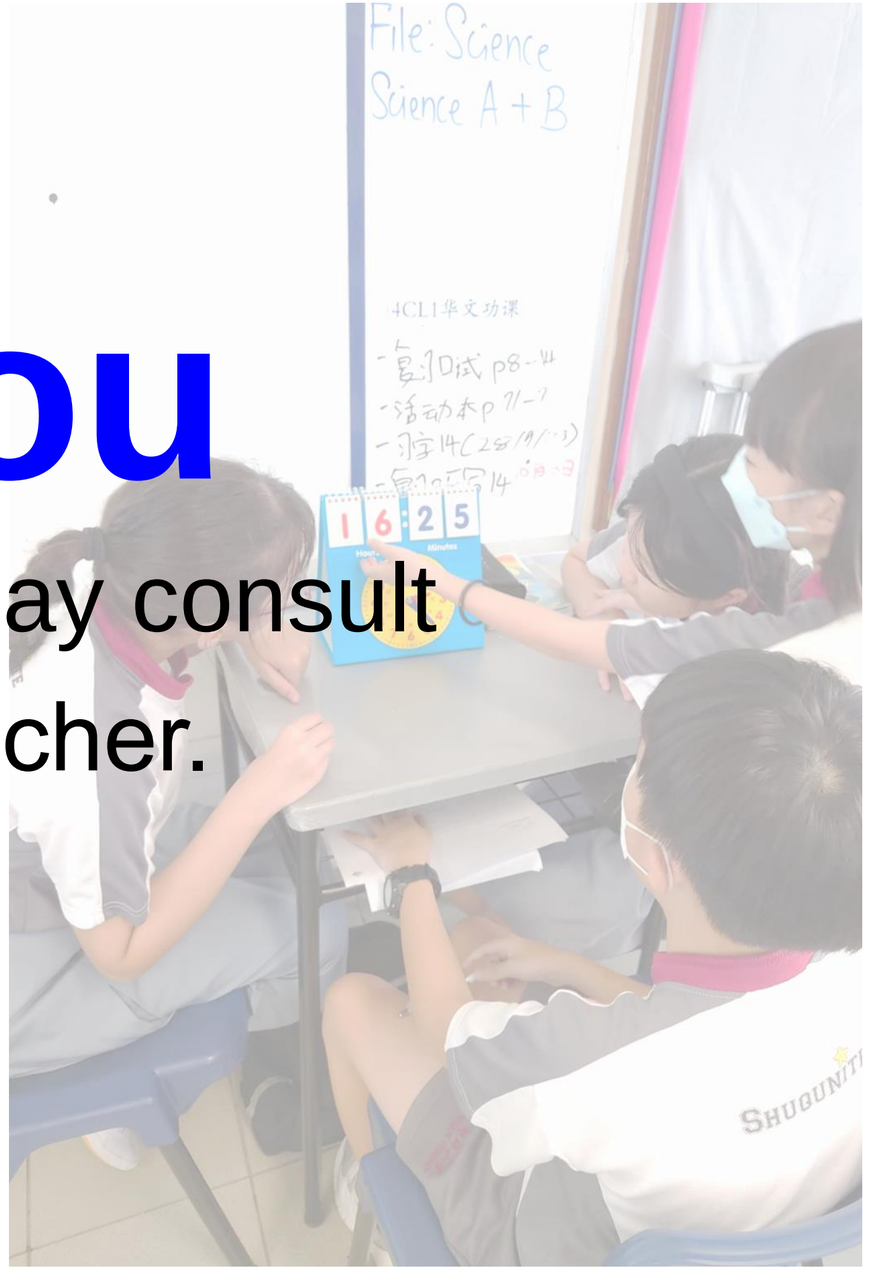



EDSGER W. DIJKSTRA

**MATHEMATICS**
is not about
numbers, equations,
computations, or
algorithms:
it is about
**UNDERSTANDING.**

*William Paul Thurston*




# Thank you

For further queries, you may consult your child’s Math teacher.