

Why the Singapore Math Approach?  
**BECAUSE IT WORKS!**

## PROVEN RESULTS EFFICACY DRIVEN

- ✓ Incorporates best pedagogy & research from around the world
- ✓ TIMSS (Grades 4–8)—Singapore consistently placed within top 3 countries for the last 24 years
- ✓ PISA Results 2015—Singapore ranked 1st in Math, Science, Reading
- ✓ Efficacy Studies in US & UK for jurisdictions using Singapore Approach consistently showed math score gains between 12–23%



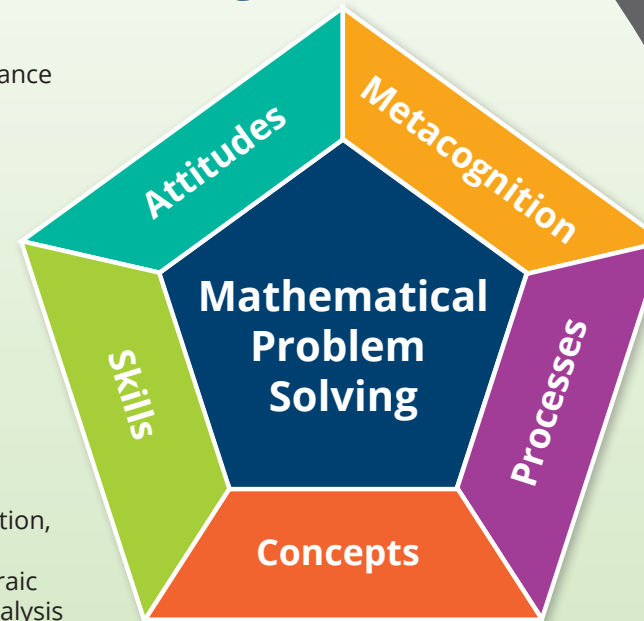
## BUILDS SUCCESS IN MATHEMATICS

- ✓ Focuses on mastery
- ✓ Purposeful sequence of topics aligned to curriculum
- ✓ Promotes conceptual and procedural understanding
- ✓ Learning gaps addressed in a timely fashion
- ✓ Built in professional learning

*My Math Path addresses attitudes and mindset towards math by boosting student and teacher confidence!*

## MATHEMATICAL PROBLEM SOLVING AS THE FOCUS OF LEARNING

- Appreciation, Interest, Confidence, and Perseverance
- Monitoring One's Own Thinking
- Thinking Skills, Heuristics, and Strategies
- Numerical, Geometrical, Algebraic, and Statistical
- Estimation and Approximation, Mental Calculation, Use of Mathematical Tools, Algebraic Manipulation, and Data Analysis



## 3 KEYS TO CONCEPTUAL UNDERSTANDING

### Concrete-Pictorial-Abstract (Symbolic) Approach

Concrete

Pictorial

Abstract

**Grade 1**

**LEARN** Number bonds can help you add.

How many toy buses are there in all?

part 3 whole 5  
part 2 whole 5  
3 + 2 = 5  
2 + 3 = 5

There are 5 toy buses in all.  
You can add in any order.  
3 + 2 = 2 + 3

**Guided Learning**

**Add. Use number bonds to help you.**

7 How many paper clips are there in all?  
3 + 2 = 5

part 4 whole 7  
part 3 whole 7  
part 2 whole 7

### Visualization

**Lesson 1** Using Part-Part-Whole in Addition and Subtraction

**Lesson Objective**

- Use bar models to solve addition and subtraction problems.
- Apply the inverse operations of addition and subtraction.

**LEARN** You can use bar models to help you add.

Mandy makes 10 granola bars.  
Aida makes 12 granola bars.  
How many granola bars do they make in all?

10 + 12 = 22

They make 22 granola bars in all.

**Check!**

22 - 10 = 12  
22 - 12 = 10  
The answer is correct.

### Thinking

**Put on Your Thinking Cap!**

**PROBLEM SOLVING**

What are the missing numbers?  
The  can be 1, 2, 3, 4, 6, or 7.  
Use each number once.  
Then write the missing number for .  
The numbers may be 10 or less than 10.

The answer in  is to be greater than the answer in .

**Let's Explore**

Work in groups of 3 or 4.

1 Pick a number from 2 to 10.

2 Use  to show your number in a .

Example

5

3 Then try other ways to show this number.

Example

5  or

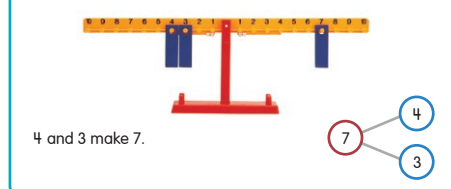
4 Carry out 1, 2, and 3 again.

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# Build a Solid Foundation at Each Level for Deep Math Understanding

1. **Learning** concepts and skills through visual, hands-on lessons and teacher instruction

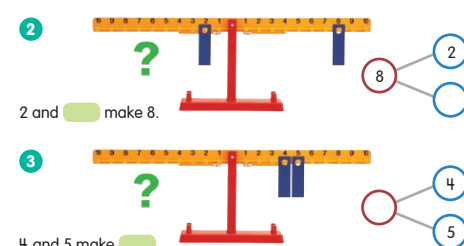
**LEARN** You can make number bonds with a math balance.



Learn models the math through hands on and minds on opportunities

**Guided Learning**

What is the missing number? Use a math balance to help you.

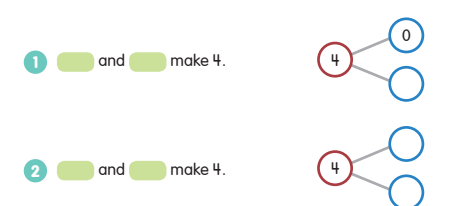


Guided Learning allows students to check their understanding while working with some guidance

3. **Applying** concepts and skills with extensive problem-solving practice and challenges

**Hands-On Activity**

Use . What other numbers make 4?



**Hands-On Activity and Games** reinforce skills, concepts, and problem-solving strategies in small group or partner settings

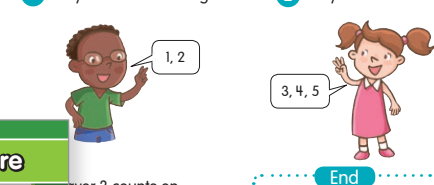
**Land on 10!**

Game

Players: 3

**How to play:** Use only 1, 2, or 3 fingers to count.

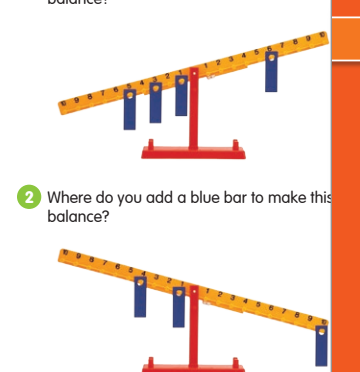
1 Player 1 starts counting from 1. 2 Player 2 counts on.



**Let's Explore**

Use a math balance.

1 Which blue bar do you take away to make this balance?

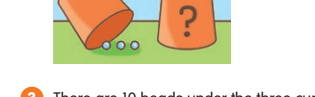
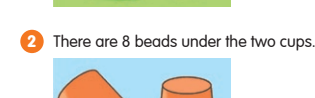


**Put on Your Thinking Cap!**

**PROBLEM SOLVING**

How many beads are there? Use number bonds to help you.

1 There are 6 beads under the two cups.

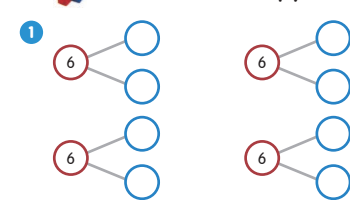


**Put on Your Thinking Cap** extends learned concepts to non-routine situations to demonstrate mastery

2. **Consolidating** concepts and skills through practice, activities, and math journals

**Let's Practise**

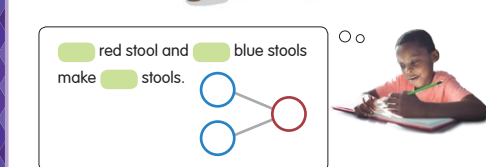
What numbers make 6? Use or a math balance to help you.



**Let's Practice** consolidates learning and checks all prerequisite skills

**Math Journal**

Look at the picture. Make 2 number bonds.



**Math Journal** offers opportunities for students to reflect on mathematical learning

**Let's Explore** provides opportunities for students to carry out investigative activities and to discuss alternate solutions to open-ended questions

**Additional Online Features:**

- Indigenous Connections
- Virtual Manipulatives
- Games
- Blackline Masters
- Problem of the Lesson

*My Math Path* offers a complete picture of student progress. The Student Books, the Teacher's Resources, and the Online Workbooks all work in concert to provide both short-term and long-term assessment options.

## Prior Knowledge

**Recall Prior Knowledge**

**Counting**

There are 5 .



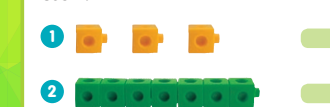
1 2 3 4 5

This is a number train of 4 .



**Quick Check**

What is the number? Count.



**Recall Prior Knowledge:** At the start of each chapter, students review related prior knowledge, then try Quick Check questions to ensure they are ready for the new chapter

**Differentiation Options**

1. ELL
2. Reteach
3. Extra Support
4. Enrichment

## Formative Assessment

- **Guided Learning** in the Student Book: After each Learn element, students work on Guided Learning examples with either peer or teacher input. Tips in the Teacher's Resource help in assessing student understanding.
- **Misconceptions** in the Teacher's Resource: Misconceptions alerts teachers to recognize and correct potential misconceptions before students practise on their own.

**Guided Learning**

What numbers make 5? Use to help you.



**Misconceptions** Children may confuse the parts of the number bond and record numbers in the wrong places. Draw a bond on the board, and explain that the lines join the parts together to form the whole.

## Summative Assessment

- **Chapter Review**—2 types—"paper & pencil" and "oral"
- **Cumulative, Mid-Year, and End-of-Year Reviews** in the **Online Workbook**: these reviews provide opportunities for consolidation of concepts and skills on topics in manageable chunks.

