Primary Mathematics  
(Singapore Math)

* Primary mathematics helps children make connections between pictures, words, and numbers.

* Cumulative program that revisits concepts covered earlier by connecting strands of mathematics.

* Topic intensive, with fewer topics covered per grade level.

* Smaller textbooks, with skills not re-taught formally.

* Mental-math strategies embedded in the program.

* Highly visual program that benefits special-needs students and inclusion students.
MATHEMATICS BEGINS WITH COUNTING!

Children build number sense through repetition and exposure to counting activities.
NUMBER BONDS

- WHOLE-PART-PART COMBINATIONS
BUILDING MATHEMATICAL UNDERSTANDING

THE INTRODUCTORY STAGE: learning the meaning of addition and moving beyond counting.
Primary Mathematics
Splitting Numbers

6
/
/
1 5
9 + 6 = 15

10 + 5 = 15
What can you tell me about this number?

74
2 more than 72
3 less than 77
seventy-four
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<th>Tens</th>
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<td><img src="image1.png" alt="Red dots" /></td>
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\[ \frac{43}{25} + \frac{25}{25} = \frac{68}{25} \]
\[ \frac{1}{27} + \frac{49}{76} \]
Place value disks help students visualize multiplication.
These tools help reinforce an understanding of place value, computation, fractions, decimals, geometry, and measurement.

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When multiplying using rearranging, which place value do we start with?
The largest place value, in this case, the hundreds.

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\[ 637 \times 5 \]
What will we be multiplying first?

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What is $600 \times 5$?

3,000

Keep 3,000 in your head and move to the next place value, the tens.
What will you be multiplying?

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What is $30 \times 5$?
- $150$

What number are you holding in your head?
- $3,000$
What is $3,000 + 150$?  

3,150 Keep 3,150 in your head and move to the next place value, the ones.

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<td>x 5</td>
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What will you be multiplying? 

$7 \times 5$

What is $7 \times 5$?

35
What number are you holding in your head? 3,150

What is 3,150 + 35? 3,185
Identifying the value of each number with place value strips

What is 10 more than your number?
91,792

What is 200 less than your number?
91,582

4000 more than your number?
Operations With Place Value Strips

*Place value strips are key to building an understanding of place value and the value of digits.

*Students can use them to practice addition, subtraction, multiplication, division, comparing and ordering numbers, among other skills.

What does 91,782 look like? What is it composed of?

What does 91,782 look like? What is it composed of?
What is 100 more than 91,780?

91,882
What is 1,000 less than 91,782?

-1,000

91,782

90,782
How can you help at home?

*Use our “Take and Makes“:
- Place value mat and discs
- Place value strips
  (copy, color, and laminate them with your child...have fun with it!)

*Make-up and play mathematical games with your child using your new manipulatives!

*Mathematics websites for reinforcement and practice, especially for basic facts!
  (there are a ton of them out there...ask your child’s teacher for quality and approved sites)
Division: Through Understanding Place Value
What strategy would you use to solve this problem?

\[ \frac{4816}{4} = \]
The Traditional Method
Does it show conceptual understanding?

\[ 4816 \div 4 = \]

Did you learn these steps?
- divide
- multiply
- subtract
- bring down

What happens when you forget a step?
Conceptual Method of Division

4816

4,000 800 16

1000

4816

-4000

816

quantity in each group

the amount distributed so far

the amount left to be distributed
Conceptual Method of Division

4,000 800 16

4816

1200

1000

4 4816

-4000

816

-800

16
Conceptual Method of Division

\[
\begin{align*}
4816 & \quad 1204 \\
4000 & \quad 1200 \\
800 & \quad 1000 \\
16 & \quad 4816 \\
-4000 & \quad 816 \\
-800 & \quad -800 \\
16 & \quad 16 \\
-16 & \quad -16 \\
0 & \quad 0
\end{align*}
\]
Anne has three times as many beads as Mary. If Anne gives 55 beads to Mary, she will have half as many beads as Mary. How many beads do they have altogether? 132

Bar Modeling:  
For Solving Word Problems
How would you solve this problem?

Sue had 6 times as many Skittles as Mark. If Mark has 14 Skittles, how many Skittles does Sue have?
Problem solving steps:

- Read the problem.
- Underline important information (who and what).
- Draw a bar to represent each variable and add labels.
- Add information and adjust the bars to match the problem.
- Work out the computation.
- Write a complete sentence to answer the question.
Sue had 6 times as many Skittles as Mark. If Mark has 14 Skittles, how many Skittles does Sue have?

Read the problem.
Underline important information (who and what).
Draw a bar to represent each variable and add labels.
Sue had 6 times as many Skittles as Mark. If Mark has 14 Skittles, how many Skittles does Sue have?

If Mark has one bar, how long will Sue’s bar be?

Let’s start with one part for Sue. Can we add on to that?

- Read the problem.
- Underline important information (who and what).
- Draw a bar to represent each variable and add labels.
Sue had 6 times as many Skittles as Mark. If Mark has 14 Skittles, how many Skittles does Sue have?

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- Draw a bar to represent each variable and add labels.
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Sue had 6 times as many Skittles as Mark.
If Mark has 14 Skittles, how many Skittles does Sue have?

What am I trying to solve.
Let's reread the question.
What computation will I have to do? $6 \times 14$

Add information and adjust the bars to match the problem.
Work out the computation.
Write a complete sentence to answer the question.

Sue: 14, 14, 14, 14, 14, 14
Mark: 14
Sue had 6 times as many Skittles as Mark. If Mark has 14 Skittles, how many Skittles does Sue have?

How can I solve $6 \times 14$?

Work out the computation.

Write a complete sentence to answer the question.
Sue had 6 times as many Skittles as Mark. If Mark has 14 Skittles, how many Skittles does Sue have?

6 x 14 = 84

Using doubling/halving rule

Work out the computation.

Write a complete sentence to answer the question.
Sue had 6 times as many Skittles as Mark. If Mark has 14 Skittles, how many Skittles does Sue have?

**Sue**
14 14 14 14 14 14 14

**Mark**
14

\[
\begin{align*}
6 \times 14 &= 84 \\
6 \times 10 &= 60 \\
6 \times 4 &= 24 \\
60 + 24 &= 84
\end{align*}
\]

Using doubling/halving rule:

\[
\begin{align*}
7 \times 12 &= 84
\end{align*}
\]

Sue has 84 Skittles.

* Write a complete sentence to answer the question.
* Reread the problem. Have I solved the problem completely and answered the question?