PUNGGOL GREEN PRIMARY

Presents...

MATHEMATICS INDUCTION BRIEFING FOR P1 PARENTS 4 JAN 2017





BRIEFING OUTLINE:

- ✓ Singapore Primary Mathematics curriculum
- ✓ Overview of Primary One syllabus
- ✓ Learning approaches and experiences
- ✓ Modes of assessment
- ✓ Teaching and learning resources
- ✓ Importance of home support





TUNING IN ACTIVITY:

What does learning of Mathematics mean to you?

Think of 3 words/phrases to describe the learning of Mathematics.

Go to www.menti.com, key in the code 77 77 99

and type in your answers separately.

B, R, I, E, F, I, N, G, F, O, R, P, A, R, E, N, T, S, 2, 0, 1, 7,





SOME STATEMENTS TO PONDER OVER:

- ✓ Math gene some people have it, while others just don't!
- \checkmark Math is all about numbers and formulae.
- The way to get better at Math practice, practice, and more practice. The more you do, the better you'll be!
- \checkmark Speed is a measure of ability in Mathematics.
- \checkmark There is only 1 right answer for each Math problem.
- There is not much use/application for Mathematics in real life since we can depend on calculators and computers to help us handle data.



SINGAPORE MATHEMATICS CURRICULUM





Singapore Mathematics Curriculum:

- ✓ Follows a spiral progression in building up content across the levels
- Lays a strong foundation for students to acquire mathematical concepts and skills for everyday use
- Develops thinking, reasoning, communication, application and metacognitive skills
- ✓ Builds confidence and foster interest in Mathematics



Singapore Mathematics Framework





<u>Transition from</u> Kindergarten to Primary One:

Kindergarten

Primary One (Term One)

Pre-numeracy skills such as matching, sorting and comparing Numeracy skills such as counting, number recognition, ordering



OVERVIEW OF PRIMARY ONE MATHEMATICS SYLLABUS





Overview of Primary One syllabus:

Topics:

- Whole numbers up to 100
- Addition and subtraction
- Multiplication and division
- Length and mass
- Time
- Money
- Geometry
- Picture graphs

M, A, T, H, E, M, A, T, I, C, S, I, N, D, U, C, T, I, O, N, B, R, I, E, F, I, N, G, F, O, R, P, A, R, E, N, T, S, 2, 0, 1, 7,

Numbers 1-100

Whole numbers up to 100

- Ordinal numbers
- Numbers up to 10
- Numbers up to 20
- Place value of tens and ones
- Comparing and ordering numbers
- Number patterns



Base ten sets

thousands	hundreds	tens	ones	

riace value Char

Number bonds

Number bonds (____ and ____ makes ____)



Addition and subtraction

3

- Using formal algorithms (i.e. working and equations)
- Addition and subtraction without regrouping
- Addition and subtraction with regrouping
- Solving of 1-step word problems

3+4=74+3=77-3=47-4=3



Multiplication and Division

- Repeated addition
- Use of multiplication symbol (x)
- Division of a quantity
- Solving of 1-step word problems with pictorial representation



There are 3 equal groups of 2. 2 + 2 + 2 = 6 3 x 2 = 6

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Length and Mass

 Measurement and comparison of lengths/ masses in non-standard units



Time

 Telling and writing time to the hour/ half hour i.e. using o'clock and half past to tell time



Money

- Identify coins and notes of the Singapore currency
- Telling the amount of money
- Solving word problems involving addition and subtraction of money in dollars only/ in cents only



Geometry

- Identifying and naming of 4 basic shapes (rectangle, square, circle and triangle)
- Making/ completing patterns with 2-D cut-outs (shape, size and colour)



Picture graphs

Reading and interpreting picture graphs



TEACHING APPROACHES AND LEARNING EXPERIENCES





Phases of Learning:

Extension of learning:

- Motivated practice
- Reflective review
- Extended activities for application of learning

Considerations:

- Prior knowledge
- Motivating contexts
- Conducive learning environment

Teaching strategies:

- Activity-based lessons
- Teacher's inquiry

Mastery

Engagement

M, A, T, H, E, M, A, T, I, C, S, I, N, D, U, C, T, I, O, N, B, R, I, E, F, I, N, G, F, O, R, P, A, R, E, N, T, S, 2, 0, 1, 7,

Readiness

Learning

Teaching Approach:

 Concrete-Pictorial- Abstract approach is used to scaffold learning and to help students make sense of their learning



Use of manipulatives such as cubes, measuring tools etc. that students get to handle physically Use of drawings, diagrams such as models, charts and graphs which students may draw Equations and mathematical computations which students need to write



Learning Experiences:

- Opportunities for students to discover mathematical concepts on their own
 – self-directed learning
- ✓ Support development of collaborative and communication skills as students work in groups
- Platform for development of 21st century competencies
- Help students connect learning to real world

TELL ME AND I FORGET.

TEACH ME AND I REMEMBER.

INVOLVE ME AND I LEARN.

- BENJAMIN FRANKLIN



Learning Experiences:

- ✓ Hands-on activities
- ✓ Journal exercises
- ✓ Math trails
- ✓ Math games and puzzles



Learning Experiences (Hands-on Activities):

- Help students make sense of abstract mathematical concepts
- Support understanding of underlying concepts rather than rote learning through memorization of rules and procedures
- Promote retention of conceptual knowledge



Learning Experiences (Journal Exercises):

- ✓ Focus more on the process than the solution
- Allow students to articulate their learning using appropriate Mathematical language
- Provide insights on what a student understand/does not understand

	Punggol Green Primary School Primary One Mathematics Beep Beep Vroom Vroom		PUNGGOLGREEN
Name:	Class:	Date:	
Create patterns using the cars.			(F)
Pattern 1			
	o o o o o o o o o	0 0 0 0 0	
Describe pattern 1.			





Learning Experiences (Math Trails):

- Application of Mathematical concepts in **authentic settings**
- ✓ Link classroom learning to the real-world
- Promote collaborative and communication skills



Learning Experiences (Math games and puzzles):

- Carefully selected age appropriate games
- Foster interest in Mathematics
- Develop Mathematical skills and concept proficiencies
- Promote critical and creative thinking





MODES OF ASSESSMENT





Modes of Assessment:

Formative (Day to day assessment)

- Teachers' observations during lessons
- Activity book exercises/topical worksheets etc.
- Performance tasks

Question No.	Learning Outcomes	Emerging	Progressing	Mastery
	Addition			
1	Add two 2-digit numbers without renaming			
2	Add two 2-digit numbers with renaming			
3	Add three 1-digit numbers			
	Subtraction			
4	Subtract a 2-digit number from another 2- digit number without renaming			
5	Subtract a 2-digit number from another 2- digit number with renaming			
	Word Problem			
6 to 9	Solve one-step word problems			

(Emerging) – Requires further practice to achieve learning outcomes

(Progressing) - Able to achieve learning outcomes with some help

(Mastery) - Able to achieve learning outcomes independently

Modes of Assessment:

Summative (Weighted assessment)

- Bite-sized topical tests
- Practical test

IMPORTANT NOTES:

- * There are no tests for the P1 level in Term 1.
- * There is no major examination for the P1 level throughout the year.
- *Details of summative assessments will be provided at the start of each term. (Starting from Term 2)



Modes of Assessment:

Summative (Weighted assessment)

- <u>Bite-sized topical tests</u>
- > Typically about 1 to 2 in a term
- > ~ 20 questions
- Duration ~ 50 minutes
- Practical test
- > Only once in the year
- Requires students to perform some hands-on tasks to demonstrate their understanding



TEACHING AND LEARNING RESOURCES





Teaching and Learning Resources:

- ✓ 'Shaping Maths' Coursebook
 'Shaping Maths' Activity Book
 1A, 1B
- Topical worksheets (To be distributed by teachers, filed into yellow file upon completion)
- ✓ LMS website
- ✓ KooBits account

<complex-block><complex-block></complex-block></complex-block>				
ne: Date				
Look at the picture and fill in the bo <u>numbers</u> . hen duck turtle	Punggol Green Primary School Primary One Mathematics Topical Worksheet Numbers 0 to 10			
5th 3rd	Name: Date: 1) Count and write the <u>number</u> in the box.			
Fill in the blanks with <u>words</u> based c a) The owl is in the <u>first</u>	2) Count and write the number in words in the box.			
	stors			



Teaching and Learning Resources:

LMS Website

- Additional source of online learning resource for selfdirected learning
- Online assignments (E.g. during E-learning days)





Teaching and Learning Resources:

Additional websites

- ✓<u>http://thesingaporemaths.com/</u>
- ✓<u>http://www.thinkingblocks.com/</u>
- ✓<u>http://mathplayground.com/</u>
- ✓<u>http://www.oldschool.com.sg/</u>
- ✓<u>https://www.moe.gov.sg/docs/default-</u>
- source/document/education/syllabuses/sciences/files/mathe

matics-syllabus-(primary-1-to-4).pdf



IMPORTANCE OF HOME SUPPORT





Ask questions instead of give solutions.

Instead of "This is wrong. The correct answer should be"
 Try "Could you show me how you arrived at this answer?"
 "How did you solve this question in class?"



Process is more important then solution.

- Instead of "Good job. The answer is correct."
- ✓ Try "Let's see how you arrived at this answer."
- \checkmark "Is there another way that you can solve this problem?"



Practise use of approriate Mathematical language.



Practise use of instructional Mathematical language.

Language commonly used when giving instructions

Count and write the correct answer.

Tick the correct answer.

Complete the number bonds.

Complete the addition/subtraction equations.

Fill in the missing numbers.

Arrange the numbers from biggest to smallest. (vice versa)

Work out the answer.

Check your answer.

Show your working clearly.

Circle the correct answer.

Colour the right shape.

Draw a line to match.

Underline the correct answer.



Daily revision is important.

Suggested ways to help your child:

- □ Encourage child to tell stories to illustrate the concept of addition/ subtraction in daily activities.
- Reinforce key terms related to addition to the child (i.e. plus, equals to, addition equation, altogether)
- Reinforce key terms related to subtraction to the child (i.e. minus, subtraction equation, left, take away)
- □ Make use of objects to help child count to obtain the answers to the addition/ subtraction equations.
- □ Reinforce the concept of adding/ subtracting '0'.
- □ Revise with your child on how to solve addition/subtraction questions using algorithm.
- Get child to add using drawings to help them visualize the word problems related to addition and subtraction.
- Suggested websites with games related to addition/ subtraction: http://www.apples4theteacher.com/math/addition/flashcards/ http://www.thegreatmartinicompany.com/addition.html http://www.apples4theteacher.com/flash-cards.html http://www.snappymaths.com/subtraction/subtraction.htm



M. A. T. H. E. M. A. T. I. C. S. I. N. D. U. C. T. I. O. N. B. R. I. E. F. I. N. G. F. O. R. P. A. R. E. N. T. S. 2. 0. 1. 7.

Daily revision is important.

- \checkmark By the end of Term 1, let's work together to ensure that your child has
- Plenty of opportunities to count objects in various arrangements and do rote counting from 0 to 20, 20 to 0
- Good mastery of basic numeracy skills Is able to recognise numbers
 - 0 to 20 in numerals and words
- Ability to count and tell how many there are
- Ability to use the terms 'more than/less than' to compare quantities
 - (E.g. 5 is more than 4, 4 is less than 5)



Maintain strong home-school partnership.

- ✓ Parent-Teacher-Child Conferences
- ✓ Math Workshop for parents during Learning Fest



