



Ministry of Education
SINGAPORE



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For immediate reporting

INTRODUCTION OF CALCULATORS IN PRIMARY 5 - 6 MATHEMATICS

1. In line with the phasing in of the revised Primary School Mathematics syllabuses, the Ministry of Education (MOE) will introduce the use of calculators at Primary 5 in 2008 and Primary 6 in 2009.

2. To align assessment with the curriculum, the use of calculators will be allowed in part of the Primary School Leaving Examination (PSLE) Mathematics and Foundation Mathematics examinations from 2009. These examinations will be revised from the current single paper to a two-paper format from 2009. Calculators will only be allowed in Paper 2 of the examinations, which will contain questions for which a calculator can be used.

Use of Calculators in the Curriculum

3. The introduction of calculators at Primary 5 and Primary 6 aims to enhance the teaching and learning of mathematics at the primary level in two ways. First, calculators facilitate the use of more exploratory approaches in learning mathematical concepts, some of which may require repeated computations, or computations with large numbers or decimals. With a calculator, pupils can perform these tasks and better focus on discovering patterns and making generalisations without worrying about computational accuracy.

4. Second, the use of calculators also enables teachers to use resources from everyday life, such as supermarket advertisements, to set real-life problems with real-life numbers that may be difficult for pupils to work with without a calculator. Pupils would hence be better able to see the connection between mathematics and the world around them.

5. To equip teachers with the knowledge and skills in integrating calculators into the primary mathematics curriculum, workshops have been conducted since 2006. By the end of 2007, all Primary 5 and Primary 6 teachers would have been trained. The new Primary 5 and Primary 6 textbooks, and the teaching and learning resources provided to schools, will also reflect the use of calculators in the syllabus.

6. Basic numeracy skills, including mental computation and estimation, are important life skills to be developed early. These skills will continue to be taught and will remain relevant even as computers and calculators become more accessible. Even with the introduction of calculators in the Primary 5 and Primary 6 mathematics curriculum, pupils will still continue to learn, practise and be assessed on computational skills without the use of a calculator.

Revised PSLE Format

7. With the introduction of calculators, there is a need for the PSLE Mathematics and Foundation Mathematics examination formats to be structured into two papers from 2009. Paper 1 does not allow the use of a calculator so that important computational skills will continue to be emphasized and be assessed. Paper 2 allows pupils the use of calculators to solve problems. Pupils will take both papers on the same day. There will be a break of one hour between the two papers.

8. The calculator is a tool to help pupils with their computations. There will be no change in the question types, the number of questions for each type, or the level of difficulty of the questions.

9. Only calculators that are approved by the Singapore Examinations and Assessment Board (SEAB) will be allowed for use in the examinations. The list of approved calculators is available on the SEAB website www.seab.gov.sg. These calculators can also be used at the secondary level and for the GCE N-Level and O-Level examinations. Pupils will only be required to use a basic set of calculator keys at the primary level.

Background

10. As part of MOE's effort to continuously improve the teaching and learning of mathematics at the primary level, a review of the mathematics syllabus, pedagogies and assessment was carried out and completed in 2004. The new syllabuses are being phased in at Primary 1 to 4 in 2007, Primary 5 in 2008, and Primary 6 in 2009. The use of calculators in the teaching and learning of mathematics at Primary 5 and Primary 6 was one of the recommendations made by the review committee, which comprised academics and practitioners.

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