

The Calculator in the Classroom

By Thérèse Dooley © 2004

The 1999 curriculum allows for the use of calculators as a tool for the teaching and learning of mathematics from fourth to sixth classes. While some teachers welcome this development, others are concerned that the introduction of this device will cause a diminution of students' mathematical thinking and basic computational skills. It is reassuring, therefore, that research has shown that calculator usage in the classroom does not lead to a deterioration in basic paper and pencil skills and that it can enhance children's problem solving abilities.

But the calculator can do more than alleviate the drudgery of complex calculations. Below are calculator activities that can be used in the classroom to develop understandings of number patterns, negative numbers, place-value and decimal numbers. Ideas are also given on how some of the exercises might be supported by written records and on how they might be extended to provide for individual difference in the classroom.

Constant Function

This is one of the most useful functions of the calculator. It is sometimes performed by the = button. For example, on pressing the key sequence $2 + 3 = = =$, the sequence 5, 8, 11 will be generated.

Extension: Pressing the key sequence $3 - 2 = = = =$ might lead to a discussion on the use of negative numbers in our environment.

Skip Counting

This activity should help students to develop an understanding of number patterns and also the relationship between multiplication and repeated addition. Students must first be familiar with the way in which the constant function works on their calculator.

Try these:

$$0 + 2 = = = = \quad 0 + 3 = = = = \quad 4 + 7 = = = = \quad 1 \times 2 = = = =$$

In order to stimulate mathematical thinking, students should first predict the number patterns and then check their sequence with that found on the calculator. If students record the number patterns found on pressing a sequence such as $0 + 7 = = =$, they may discern links with multiplication facts.

Extension: Students guess how many times = must be pressed to reach a certain number, e.g., in the sequence $0 + 5 =$, how many times must = be pressed to reach 35? Again students should be encouraged to guess before checking

Space Invaders

The following activities develop and reinforce understanding of place-value

Space Invaders 1: A multi-digit number is entered into the calculator. These digits are 'aliens'. They are wiped out one at a time by subtracting to zero.

Space Invaders 2: The same as above except that the digits must be wiped out in ascending order.

Space Invaders 3: The same as Space Invaders 1 except that digits are wiped out by addition, not subtraction

Space Invaders 4: The same as Space Invaders 1 except that decimals are used.

How Space Invaders 2 might be recorded

Number entered: 9276

<i>Digit</i>	<i>Operation</i>	<i>Number in display</i>
2	- 200	9076
6	-6	9070
7	-70	9000
9	-9000	0