

## **The Use of Calculators at Primary Level**

### **Research**

There are not many studies that have researched the use of calculators with children as young as 5 - 7. The CAN (Calculator Aware Number) project was carried out in the 1980's. This showed that children with free access to calculators developed good numeracy skills, but was dismissed as "unscientific". Then there was a more tightly researched project in Australia called Calculators in Primary Mathematics. In this the children who had followed a calculator-aware curriculum generally out performed the control group.

### **Exploring number**

Calculators are excellent for exploring number. Using a calculator can free children's minds to help them to concentrate on the patterns that the numbers are making, thus helping them to think mathematically.

### **Important mathematical ideas**

Calculators can be used to promote the important mathematical ideas of prediction, estimation and approximation giving immediate feedback.

### **Realistic data**

Calculators are an excellent tool for calculating with realistic data. Children are often fascinated by large numbers. A calculator is magnificent for handling these. How many metres is it to the moon? How many times my weight was a brontosaurus? How many minutes till my next birthday? How long is a million days?

A calculator can also be useful in science for comparing and working with complicated numbers. Measurements are often difficult to compare. One child may be considerably taller than another, but how much taller? A calculator can help to work this out and also make it possible to introduce the idea of an 'average'. Water evaporates, but by how much each day?

### **Place Value**

One very important aspect of calculators is that they have built in them the structure of the place value system which young children have to learn and very often do not understand. There is no place value system at all in numbers under 10, and if all of their earliest work is with single digit numbers, as it often is, then children are missing out in their very first number work. For the place value system to be properly understood, at least some of the work should involve numbers over 100. Working with a calculator can help children to understand that, for example, that the 7 in 276, has the value of, not 7, but 70.

**Number system**

Children can meet negative numbers and decimal notation easily and naturally when using a calculator. (Provide a number line to use at the same time.) They can use the constant function to explore repeated addition and subtraction.

**Special needs**

A calculator can also help those with special needs. For example, some children are confused by signs and symbols, such as the '+' and 'x'. Working with a calculator on calculations to which they already know the answer, can help them understand the difference between the signs with instant feedback, thus freeing the teacher to work with other children.

**Early exploration**

Early exploration, that is free play, can help children to learn things about, for example, large numbers, that teachers would never teach at that age.