

# Thinking Together with ICT and Primary Mathematics: A Continuing Professional Development Pack

## Introduction

This pack gives you everything that you will need to start using the Thinking Together approach with Mathematics and ICT. It was developed by a Nuffield-funded project in order to disseminate good practice.

The Thinking Together approach to working with ICT in Maths has been tried and tested and shown to work. It began in the early 1990s with lessons to improve the quality of pair and small group work around computers. A series of research projects since then have clearly demonstrated that it is possible to teach children how to talk and think together more effectively when working with ICT. Evaluations have shown that Thinking Together with ICT not only improves reasoning it also improves learning (as measured by SAT tests).

On their own research results are not enough to change practice. Teachers do not just need to know that the Thinking Together approach works, they need to know what it is and how to do it. This pack is the result of a collaboration between an Open University research team and SMILE teaching material developers to give teachers and teacher-trainers the support that they need. The one year funded project began with a community of researchers and teachers who already had some experience of the Thinking Together approach. The research team worked with these teachers for a term to develop materials for a draft one-day Continuing Professional Development (CPD) session that was then given in Central London to teachers from schools with no experience of the Thinking Together approach. Feedback from these teachers and their classes over the next term enabled the team to refine and improve this CPD pack to a finished form. As a result of this process we are now confident that this pack can be used effectively to initiate the Thinking Together approach to ICT use in Maths.

## Contents of the pack

This pack consists of a book and a CD-Rom. The CD-Rom contains powerpoint presentations, printable work-sheets and lessons plans, video clips of classroom interaction and some free SMILE software to support demonstrations of the approach.

The book accompanying the CD is in two parts. The first module outlines the rationale for using a Thinking Together approach to ICT in Maths. This describes the history of research projects through which the Thinking Together approach has been developed and explains the distinctive role of computers in supporting collaborative learning.

The second module shows in detail how this approach can be applied to transform classroom practice with ICT. The first section deals with using 'Talk Lessons' to establish a set of shared ground rules for talking and an ethos of shared enquiry in the classroom or ICT lab. The second section looks at teacher strategies to help groups learn and think together. The third focuses on planning lessons and schemes of work to integrate Thinking Together with ICT into the maths curriculum.

## How to use this pack

The pack can be used as a support for CPD in any context. The two modules are each supported by power-point presentations designed for half-day sessions. The full course could therefore be delivered by a trainer in one day or in two afternoon sessions. The book elaborates on the content of the Power-Point presentations and could be used as a script to follow or simply as a source for ideas. Photocopiable work-sheets for exercises with teachers are found at the back of the book and are also printable from the CD-Rom. The wealth of support provided makes this pack suitable for teachers who are not professional trainers to use it as a basis for CPD in their own schools or in small study groups or indeed, alone for self-study.

This pack was developed using SMILE mathematics software but the principles it advocates are relevant for use with any other appropriate mathematics software, indeed most of the contents of the pack is relevant to the use of ICT in any subject area.

## Support and feedback

This pack is supported by further materials on

This site contains an email address and contact details. We would very much like to hear from you about your experience of using the pack and working with the method it proposes.

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