

## Maths-Whizz Tutoring

Intetics Co. creates a set of resources for making math learning more efficient

### Client

A leading multimedia education company providing students around the world with a user-friendly quality product.

### Challenge

The company was going to develop a set of resources to support children in learning mathematics and help teachers control the learning process. The ultimate aim was to develop and strengthen students' skills in math by embedding ICT into daily mathematics lessons. The software was supposed to help students explore different math-related issues and to offer various problems to solve. The company chose Intetics Co. as an IT partner to develop completely integrated software for both whole-class teaching and collaborative learning.

### Solution

The Flash exercise system was designed for students of different age groups. Each lesson represents a game which involves visualization and sounds. It is good both for students as it makes the learning process attractive and exciting, and for teachers as it lets them easily monitor children's progress. The game consists of two parts: Explore activities allow students to explore a new thing or learn an operation, and challenge activities enable them to solve related problems and practice what they have learned. This part provides probing questions to help identify misunderstandings and stimulate discussions. Clicking the Check button gives feedback on whether the child's answer was correct. The response to a successful answer contains visual/audio payoff (e.g., the corresponding element flashes or changes color, an animated character waves their hand at the student, the sun laughs, etc.), while the response to an incorrect answer is not too negative, and it usually contains additional information which is supposed to help students review their decisions and work towards the correct answer. The flash movies created by our team were based on the art work supplied by the customer. We developed a step-by-step action script for each movie and an algorithm for the problem presentation and solution.

Using the best OOP practices, we created a universal engine for the Flash games. The engine was implemented as a class (a set of helper classes) to handle user input (lock/unlock edit controls), events, and timers, and to drive the motion of movie clips using several common methods (glidepath, orbits, gravity, etc). This approach allowed us to speed up the development process and ensure the consistency of the movies.



▣ **Technologies Utilized**

- Flash MX 2004, Action Script 2.0 XML;
- Windows 98, 2000, XP; Mac OS X.



▣ **Results**

The Flash exercise system created has become a popular piece of learning material as it represents an innovative method of making the process of studies more effective and exciting. It has already been matched to the NNS Medium Term Plans, the Unit Plans for Year 4 to 6, the Scottish 5-14 national guidelines, and the Northern Ireland Curriculum. The system is universal as its components can be used independently or in conjunction with any other mathematics materials. The implementation of the project helped our customer achieve commercial success by increasing the number of sales and improving customers' satisfaction.

Further information and other case studies can be found on our website at [www.intetics.com](http://www.intetics.com)

