As final year BA (QTS) students, we thought we had already realised the power of using an interactive whiteboard (IWB). The use of ICT is something we have to consider in the planning in every one of our lessons, including PE! But the challenge of planning a maths lesson that exploits the power of the IWB forced us to think about just what is possible.

Our lecturers informed us that they were bringing in a Y6 class from a local primary school for us to teach. We were expected to deliver a mathematics lesson on an area of our choosing that fully demonstrated our knowledge of the tools available for use on an IWB. With a Y6 class that we knew very little about, we decided to plan a lesson exploring the properties of 2D shapes and how these can be used for classifying them.

First thoughts

Our initial aim was to capture the children’s attention, and we felt that this could be achieved through the use of some simple tools:

- Windows Moviemaker – to display our learning objective in the form of a Star Wars-type film credit, complete with the theme tune.
- Ticker tape – scrolling across the IWB when the children entered the room to grab their attention (a great method of crowd control).
- ‘Space’ themed background – ACTIVStudio allows you to use any image as a background for your pages/slides.

Whilst none of these tools actively supported the teaching objective of the lesson, they were effective in captivating and maintaining the children’s attention, whilst not taking up too much planning time.

Mental-oral

As the particular class of children were unknown to us, we decided to use Simon, a memory/sequence game that did not require us to have any knowledge of the children’s mathematical abilities. Using this game familiarised the children with the IWB and the setting.

The mental, oral activity was, intentionally, unrelated to the main lesson objective, and enabled the children to refresh and practise skills that they were already familiar with. The use of such games can be a great way of starting a lesson, especially after playtime! The graphics on Simon are simple and do not distract attention from the activity, as some more ‘busy’ graphics can.

Main teaching

The first part of the main teaching was a review of the properties of 2D shapes. We utilised the ‘spotlight tool’ to focus on small parts of a given
shape, and asked the children to use what they could see to determine the actual shape. This was a very practical way of assessing their understanding of the properties of 2D shapes without having a ‘dry’ recounting of the individual properties.

The next part of the lesson, in preparation for group activities, was to create on the IWB an alien from 2D shapes that conformed to a stated law on the planet; eg, ‘It is illegal to use any shapes other than those which have angles that add up to 180°’. Our use of the ‘hide tool’ ensured that the children’s attention was focused initially on the teacher and then on a revealed section of the IWB page.

During the main activity, the children worked in small groups making aliens from 2D card shapes, which they stuck to their own giant planet. Each group had a different law to abide by. During this phase, groups were invited to create one alien on the IWB according to their law. This allowed for another extremely useful function provided by the IWB to be implemented: the ability to drag, drop, rotate and resize shapes easily. Giving the children full access to the IWB during this part of the lesson allowed them to take ownership of the work that was produced; not individually, but as a class.

During the plenary, children presented their planets as a group and the rest of the children used the aliens displayed on the IWB to work out the law of each planet.

As an additional ICT element, you can nominate a child (or do it yourself if you prefer) to walk around the class during the lesson and take photographs of children engrossed (hopefully!) in their work. These photos can then be viewed either in the plenary or at a later date for further discussion. As you can see, there is no limit to the opportunities for fitting ICT into our lessons!

The IWB can also be effectively used as an aid for classroom and behaviour management. An invaluable tool that we found when using the ACTIVStudio software, was the ‘clock tool’. This function allowed us to set a countdown timer for the amount of time the children had left to complete their work. The constant visual reminder acted as a stimulus for increased work production, as it
encouraged a ‘beat the clock’ environment. Plus, the children enjoyed the sound clip at the end of the countdown timer! (You can use a variety of sounds; either choose one of the ones provided or simply download whatever you like and use that.)

Our use of the IWB for this lesson didn’t go without hitches! By playing around with the tools available on the board, we solved most minor problems we had. However, we did have problems with the use of the ‘ticker tape’ tool, and found that it was easiest to switch it off before changing window or using another page of the flipchart, or else it caused problems with the graphics. We also would have found it helpful if you could have skipped pages in the flipchart, although, when investigating if we could do this, we found another useful tool that allowed you to use page turn effects, just to make your presentations even more exciting.

One thing that we did conclude after the lesson was that we think we tried too hard to get the children up and using the board. During the ‘spotlight’ activity, bringing pupils up to the board to move the spotlight seemed somewhat unnecessary. In fact, at the times when the teacher was moving the spotlight around, the children were just as interested in what was going on. Just because the children are able to use the board doesn’t mean they have to. We also realised that while we consider the tools we have implemented in this lesson simple and easy to use, we tend to forget that we have had many hours of training using computers in this way over the last few years. Tasks such as setting a background on a slide and creating a short video clip in MovieMaker are not simple if the user has no experience of them. Thus, we concluded that it would be very worthwhile for any teacher with an IWB in their classroom to set aside some time for merely playing around with the tools available. Guidance from somebody more experienced would be invaluable, too, as we found out with this lesson. Children quickly become familiar and confident with the use of the board, sometimes more confident than us!

In conclusion, using an IWB enhances lessons, not only in maths but across the curriculum. All IWB arrangements have a vast array of tools available, and the more time that is spent experimenting with and using the board the more valuable its use becomes. ‘Practice makes perfect’, and in our experience this certainly seems to be the case.

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**Line multiplication**

Colin Foster

Here’s a way of doing multiplication that I hadn’t seen until today.

Say you want to work out $43 \times 21$. For 43, draw 4 parallel lines, a gap and 3 parallel lines:

For 21, on the same drawing, but going the other way, make 2 parallel lines, a gap and 1 line:

Then count up the number of crossing points, adding where there are multiple crossings vertically in line:

This works just as well with numbers with three or more digits. And if you have a zero somewhere, just use a dashed line there and count ‘zero’ crossings.

It’s a bit fiddly as an efficient everyday method, but does it have some use as an aid to thinking about multiplication?

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