

# Databases for deductive reasoning

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Contained on the CD that accompanies this pack is a database activity called *Crooks!* You may have

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come across a similar idea on the MAPE website, called *Whodunnit?*. The idea is simple enough, a list of potential suspects has been compiled in a database, including information about physical attributes, background, legal history and so on. Would-be detectives are then presented with a series of crimes and they have to use the information contained within the database to identify likely suspects.

This particular pack contains a runtime database ('runtime' simply means that you don't need a database application to run it as it is self-contained and you can copy it onto as many computers as you like!) and a series of printable resources:

- some for the pupils, such as crime notes, a brief introduction to the activity and some information about searching the database,
- some for teachers, such as brief lesson notes and some background information about the activity, how to set it up and so on.

There is also file called 'My Solution' and it is here that the *Crooks!* activity and other related activities such as *Whodunnit?* diverge.

The intended purpose for most similar database activities is to 'find the right answer'. In the *Whodunnit?* database each crime is completed by a message saying 'You have found the culprit.... Next case'. Sometimes the right answer can be found by accident (what some people call the 'lucky keys' approach) or by exploiting the thing that computers are good at, trying roughly the same thing over and over with just a few minor changes to the criteria... good ICT, but not such good thinking skills.

With *Crooks!* a report is completed, highlighting what the detective thinks is information pertinent to the case. In other words, a justification for the conclusion they have reached. This is important because this activity is designed to focus on the deductive reasoning used in reaching a conclusion and this is the end product of this particular activity. By changing the emphasis from the right answer to the reason, pupils have to be more thorough in formulating their conclusions and have to focus on making their thinking overt.

## Talking, thinking and justifying

I used this activity with mixed ability Year 5 pupils over a period of about three one-hour lessons. Initially, as you might expect, the class were very keen on getting the right answer and became quite competitive. At this point it became important to make sure that my responses to their work were clear and consistent. I refused to answer the question, 'Is it...?', instead deflecting the question by asking for a justification, 'Tell me why you think it is...'. Some of the class picked this up quickly and it was interesting to note that the content of their own discussions with their working partners changed significantly. They became far more reflective and began to try to refine their own search criteria and thinking. In short, they began to think critically about the information they were presenting and became more interested in their ability to justify their responses (I used a technique to make sure that all members of a working group were involved in this. I'm sure it has a fancy name, but I don't know what it is called. I made it clear that I was interested in a group response, but wanted a response to be presented by just one member of the team and I would pick a person at random, well, as random as a teacher's choice ever gets!).

It will come as no surprise that others within the groups I worked with did not manage to make the leap from 'answer' to 'response', though almost all made some progress towards this idea and almost all managed to change their approach to the task in the light of the responses I gave. Though it was never a planned element of the activity, the fact that the clues to the crimes become increasingly obscure did help some make this leap. As multiple potential answers seem to apply to simple searches pupils were forced to refine their searches and this often involved detailed debate about criteria to be used. Other times further searching did not help and what was required was careful and reflective reading of case notes in order to make (sometimes extremely tenuous) links.

Extending the activity is relatively easy. I allowed pupils to design their own case notes and try them out on their friends. This might seem like an easy link to make, but it is worth noting what this extension activity revealed. Pupils who focused on answers tended to give clues with only one 'cor-

rect' response and as such their challenges were easily met. Pupils who managed to grasp the purpose of the task a little better spent a lot more time reading notes about the suspects and using clues that had potentially ambiguous meanings or multiple matches. Finding the 'right' answer to these questions contained the same pitfalls as in the original activities, conflicting responses, which extended the thinking and debate. Again, this pushed those obsessed with getting it right to review their approach as well as acting as a fair assessment of progress made.

### **Bridging and transfer**

This activity was 'stand-alone' in the sense that it was a single unit of work for ICT and I was working with pupils who were not in my class. It developed some basic ICT skills such as simple

searching, some knowledge, such as the purpose of databases and some concepts relating to the nature and accuracy of information. We spent some time reflecting on these issues in the plenary for each lesson. However, because this unit was not related to other curriculum contexts, it did lose some of its impact. Bridging skills and concepts into 'real' situations is important and I regret slightly that this work was effectively divorced from reality, both in terms of the ICT skills it developed and in terms of the critical thinking it demanded. That's not to say that it wasn't worthwhile, however. I still get emails (three years on) from pupils using the resources with other teachers asking 'Was it...?'. But I still don't say!

Full notes for the use of the software and activities are included on the CD. They are in *Word* format, so can be edited but, whether adapted or not, they should not be sold. Have fun!

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