Using IT in... sound

Which sound maker is the loudest?

How do the strings on an elastic-band guitar affect the sound?

How does the size of the guitar box affect the sound?

Which rice shaker is the loudest?

What makes a noisy shaker?

Does the amount of rice in a shaker affect the noisiness?

If you drop something from higher up does it make a louder sound?

Can you trust your ears to measure sound?

What makes a good drum sound?

Who has the quietest shoes?

The children can investigate making sounds. They can use string, percussion or wind instruments looking at how to make the sound and how to change the pitch or volume. After this initial work, you can introduce the pupils to the **sound sensor**- a device which allows them to measure, rather than guess-at how loud a sound is. They can display the readings on the screen to get a more easily understood measure of volume.
The questions above provide some ideas to investigate. They should try to predict sound levels - you might draw a 'noise line' and ask them to write where along it the sound might sit. Although they might test large drums and small drums, sand filled drums and empty drums, large tappers and small tappers, paper skin or plastic skin - they should learn to look at one thing at a time. Note: The sound sensor responds to all noise, so do this somewhere quiet.

Note: The sound sensor responds to different frequencies unevenly and in a way unlike the human ear. For this reason, results should be seen as 'rough and ready'.

IT: Measuring
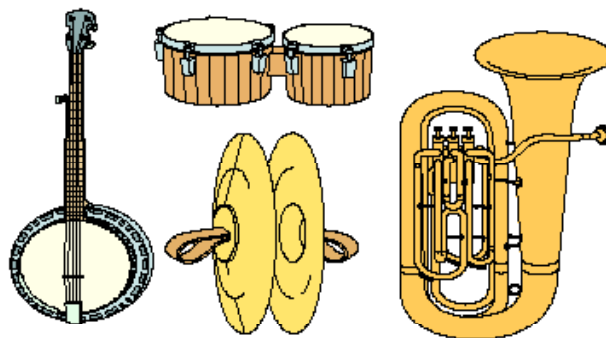
Can you describe the sound?

Get a cassette tape with different sounds on it and ask a group to describe each sound. Do a brainstorm on the describing words they could use, like banging or clanging, and put the list up on the board. If you have a '**Clicker' grid** you can prime your **word processor** with such words and the children can use them at the press of a button.

The children can use a 'branching database' program to build up a 'key' to identify each sound. You prime the computer with a couple of instruments - the children add the rest. They will learn how to sort things and observe carefully.

You can create a database of musical instruments. The exercise gets children to organise their data: they will need to record what the instrument is, what family it belongs to, how it makes sound, what types of music it is used for and what country it comes from. Books as well as the **Internet** provide plenty of information.

IT: Handling information

Which sounds stop quickly and which stop slowly?

Most brands of **sound sensor** are quite good at showing how fast a sound grows and fades away. This 'attack' and 'decay' idea helps us to distinguish a drum sound, which is short from a flute sound, which is long. Get your sensor software to show a line graph as you make the sounds. Set it to read over a 10 second timespan, as this will show a more detailed graph. The children can look at the graphs and consider: do sounds that last longer have anything else in common? Do the sounds that grow quickly have anything in common? Do high sounds stop more quickly than low sounds?