Why sensors?

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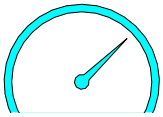
A child might point a light sensor at the window and on the computer screen she might see a rising bar gauge. Although she may not know what the sensor is responding to or be good at numbers, she has begun to explore a tool which will help her to appreciate measurement.

Measurement is a feature of all science work. With a sensor connected to your computer, your software can display the readings as a number, a bar or a time graph. Some programs can even show pictures: an aeroplane for a loud sound, a bird for the quietest sound and so on. Using sensors gives children a much better feel for measurement. The thin line in thermometers, the scales on meters hardly help understanding - they are just tools to give you numbers.

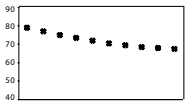
Using sensors, or 'data logging' is a focus for good science.

Bar gauge

Digital display



Analogue meter display



Time graph display

What you need

There are sensors to measure almost anything. You will probably want to measure temperature, sound and light levels and that may be enough. A second temperature sensor will let you compare the temperatures of two things and that is useful. A pair of light switches or light gates can time how quickly things fall, but that is where you might stop, or at least pause.

There are also sensors that measure your pulse or breathing rate and others that monitor the weather: a rotation sensor measures the wind speed and a humidity sensor can measure moisture in the air.

The software is a make-or-break item. It should allow you to display your measurements as numbers, as moving gauges and as a graph against time. It should allow you to measure for as long as you need to - be that a few minutes or a whole day. It should also let you record the readings from two sensors at the same time.

The software should automatically identify which sensors you have plugged in and it should scale the measurements as degrees, sound level or whatever. Good software can ensure that your kit does not spend its life in a cupboard.

If you have a single sensor kit and want to use it around the school a portable computer is invaluable. Most kits work with different computers - for the price of a cable and some more software.

Activities using sensors

The following double-page spreads detail some activities which work with even the most basic software. The 'pupil pages' are purely a guide to the points to make during the activity.

Section 2

See also:
Assessment Page 11
Ideas section Page 69
Reference Page 125