Activity 5a

What to do

Look at this scenario and decide what you need to put in place to ensure that the lesson is successful for the pupils involved:

Note
Who will supervise them during this activity?

scenario

During work in Science on electricity, pupils in Year 6 have wired up simple circuits with a battery and explored how changing the number of components can make bulbs brighter or dimmer. The question of automating this sort of process arose and you have decided to use this opportunity to introduce pupils to a control interface attached to the computer.

The children will need to make a set of disco lights by fixing lamp holders to a back-board of mdf or plywood. They will then fix a cardboard cover over this, with holes cut in the appropriate places, and fit coloured cellophane 'lenses' in the holes. Each lamp will have to be tested in turn, connected to the control interface and a note should be made of which channel controls each lamp. Both an LSA and a parent are available at different times during the week.

Note
Would they work individually, in groups or pairs?

The pupils will decide on a set of possible patterns that the lights can display, e.g. flash together, flash in sequence, flash in pairs.

They will have to learn first of all to use the necessary commands in the software supplied with the control interface in order to switch each light on and off.

A sample procedure (the commands will vary according to the software) to make 3 lights switch on and off
Switch on 1
Wait 10
Switch off 1
Switch on 2
Wait 10
Switch off 2
Switch on 3
Wait 10
Switch off 3
End Procedure

The next stage will be to create a sequence of instructions (or procedure) for each pattern. They test each sequence to see if it does what they intended and edit it as necessary.

You will need to show them, how to create a master procedure, which calls all the procedures in turn to give the desired disco effect.

To make three lights switch on and off 4 times
Repeat 4
Switch on 1
Wait 10
Switch off 1
Switch on 2
Wait 10
Switch off 2
Switch on 3
Wait 10
Switch off 3
End Repeat
End Procedure

As a follow up, connecting a microphone to the analogue input socket of the interface could give them the opportunity to write procedures which make the lights respond to the beat and volume of the music.

Note
This is similar to using Logo. Would you give a whole class demonstration or show it to each group in turn?