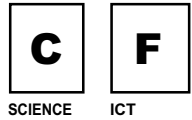


ICT ACTIVITY 15

Sensing experiments to revise science concepts.

Year Group: Year 6



Resources

Philip Harris First Sense Unit, spreadsheets

Context (Pupils' prior experience)

The pupils have already covered the topics being revisited in these lessons and have used ICT to represent and interpret data. This series of lessons was written to increase the attainment of pupils identified at level 3b a term before the Year 6 SATs. The intention was that by working through this series of lessons the pupils would have time to revisit some of the concepts they had learned about in Years 3 to 5 and develop their data handling skills at the same time.

Task Description

Lesson 1: Using spreadsheets to make charts from data.

Lesson 2: Using sensors to monitor temperature.

Lesson 3: Use sensors to monitor sound.

Lesson 4: Using sensors to monitor the effects of different sound proofing materials.

Lesson 5: Using sensors to monitor light.

Learning Intentions

SCIENCE: Knowledge and Understanding	ICT: Skills, Knowledge and Understanding	ICT Level		
		KS1	KS2	KS3
They make relevant observations and measure quantities, such as length or mass, using a range of simple equipment.	They use sequences of instructions to control devices and achieve specific outcomes.	w/1	2/3	4/5
They select suitable equipment and make a series of observations and measurements that are adequate for the task.	They use ICT to control events in a predetermined manner and to sense physical data.	1/2	3/4	5/6
They select apparatus for a range of tasks and plan to use it effectively.	They understand how ICT devices with sensors can be used to monitor and measure external events.	2/3	4/5	6/7
Science POS related to task: Sc1, 2f, 2h	ICT POS related to task: 1c, 2b.			

Teaching Approach

These lessons were taught by one adult working with a group of 5 children.

Links with other curriculum areas

Numeracy: pupils were processing, representing and interpreting data.

Subject Learning Gains (Science)

ICT provided the opportunity to learn science concepts in a 'different' way. This meant pupils were more motivated to engage in science revision. Using datalogging equipment removes the need to manually record results, which means pupils are 'freed-up' to think about the science underpinning the experiment.

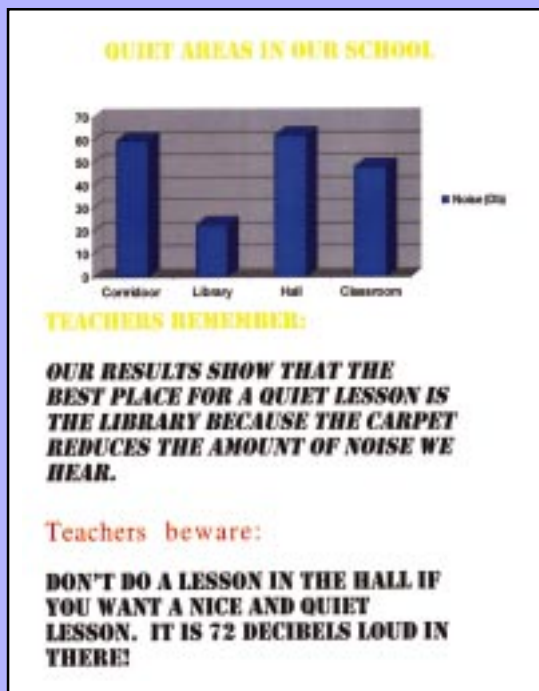


These pupils were able to use the equipment independently and understood how datalogging equipment could be used to measure the results of a range of experiments.

These pupils have reached ICT Level 4

Teachers' Assessment

- ### Using the sensors
1. Before you turn the laptop on, connect it to the Universal Interface.
 2. Log on and start the Datadisk Explore software.
 3. Plug the sensor into the Universal Interface.
 4. Set the logging interval or duration to the time required.
 5. Set up the experiment and then press the start logging button.
 6. Once the experiment is complete press the stop recording button.
 7. Set up the next experiment.
 8. Click yes when asked; 'Do you want to record again on the same graph?'
 9. When all recordings have been taken save the data.
 10. Go to Graph, Scale y-axis to make the graph easier to read.
 11. To find readings at specific points, Click on the cursor button on the left hand side of the graph and point to anywhere on the graph.



Pupils' Work

Key stage 2

Computer Diary

Name _____ Date _____

> What was my task?

To work out which material reflected the most light and to put the others in order.

> What software did I use?

> Who did I work with?

> Who helped me?

> What did I do?

We connected the equipment and tested each material. We wrote down the results and decided that a bar graph was best it wasn't continuous data.

> What did I learn?

That shiny surfaces reflect more light than dull surfaces and that light colours reflect more light than dark surfaces.

> What will I improve/change next time?

I would try some rougher surfaces and it would be better to do things like mirrors or lamp shades where reflection is important.

> How do I feel about my computer work?

Pupils' Evaluation

ICT Teacher Evaluation

Teacher _____ Date of Activity _____
Class _____

Teacher Confidence and Competence
What was your own level of ICT confidence before the activity?
I regularly teach ICT skills to pupils and feel confident working with computers, but I hadn't used sensors with pupils before.
Do you feel you have gained in confidence and why?
Yes, because I can now use the sensors adequately and feel that this has opened up a new way for me to support the learning that is taking place in the science lessons.
Do you feel able to teach the lesson yourself?
Yes
Is there anything you wished to have learnt but did not?
No.
What would you do differently next time you carry out the task with a class?
I think the pupils would have benefitted from being able to try out the sensing equipment before the first lesson to familiarise themselves with it.

Pupils Confidence and Competence
Did the pupils learn what you expected?
Yes
Were there any unexpected learning outcomes?
The pupils are able to identify when it would be appropriate to use the sensors in the science activities.
Did the pupil complete the task?
Yes.
Was it a suitable task for the pupils age/abilities?
Yes. All the pupils felt that they had met the success criteria at the end of the session.

Hardware and Software Issues
What hardware or software problems did you experience?
None.
Would you like further training on how to use either of these?
No.
Were there any resources issues?
No.
Are there any other comments?
I enjoyed carrying out the activity with the pupils. Even though they had to learn a lot of new ICT skills, it was the science learning that they focussed on and spent time discussing during the sessions.

Teachers' Evaluation