

Data Handling

Levelled Examples



Context:

Children were asked to design an information system to give a weather forecast for hill walkers.

What the children did:

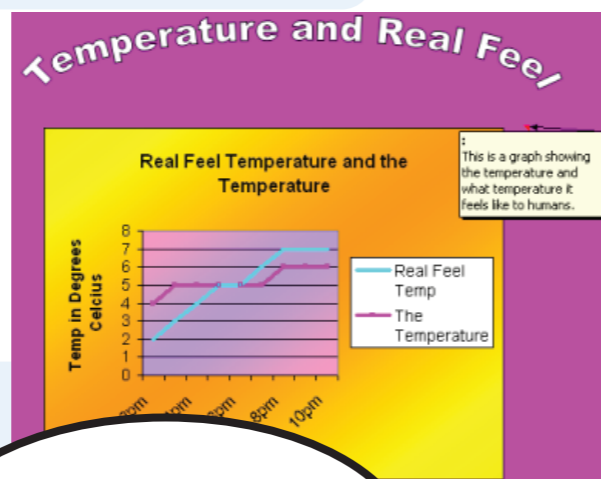
Children were shown how to use a web query in Excel to import data from a weather website onto their spreadsheet. They then used this information to create a series of graphs. They used 'IF' statements to display messages about the weather.

e.g. 'Don't expect to get a suntan!'

What the children said:

Let's create graphs to show the temperature, wind speed and sun index.

We need to make it easy to read for the hill walkers.



Pupils should:

- Know how to interpret and analyse information in graphs.
- Be able to explain and present findings from an investigation.
- Be able to collate evidence to support an hypothesis.
- Be able to select appropriate tools, information and processes to achieve a particular outcome.
- Be able to ensure that the data presented is accurate.
- Use logical and appropriate structures to organise and process data.

Next steps:

- Devise a data handling solution to test hypotheses that uses techniques to reduce input errors.
- Plan and develop solutions which show efficiency and integration of ICT tools and techniques.
- Use criteria and feedback to improve the effectiveness and efficiency of solutions.
- Explore the impact of the use of ICT in work, leisure and home.

Suggested resources:

- Database software e.g. 2Investigate Junior Viewpoint, Information Workshop, Information Magic, Textease Database
- Spreadsheet software e.g. Microsoft Excel, Textease Spreadsheet, 2Investigate, 2Calculate, Number Magic

Example Cross Curricular Activities:

- Design a database to catalogue dinosaurs in a museum (Science).
- Create a spreadsheet comparing the weather in different countries around the world and use charts and graphs to test hypotheses (Geography).
- Develop a database to record leisure activities in the local area, test and refine the database based on feedback from peers (Geography).
- Use a questionnaire to collect and analyse data relating to pupils' favourite leisure activities (PSHE).
- Create a database structure to record information about the solar system (Science).

Attainment target for ICT

Level 4

Pupils understand the need for care in framing questions when collecting, finding and interrogating information. They interpret their findings, question plausibility and recognise that poor quality information leads to unreliable results. They add to, amend and combine different forms of information from a variety of sources. They use ICT to present information in different forms and show they are aware of the intended audience and the need for quality in their presentations. They exchange information and ideas with others in a variety of ways, including using email. They use ICT systems to control events in a predetermined manner and to sense physical data. They use ICT based models and simulations to explore patterns and relationships, and make predictions about the consequences of their decisions. They compare their use of ICT with other methods and with its use outside school.

Level 5

Pupils select the information they need for different purposes, check its accuracy and organise it in a form suitable for processing. They use ICT to structure, refine and present information in different forms and styles for specific purposes and audiences. They exchange information and ideas with others in a variety of ways, including using email. They create sequences of instructions to control events, and understand the need to be precise when framing and sequencing instructions. They understand how ICT devices with sensors can be used to monitor and measure external events. They explore the effects of changing the variables in an ICT based model. They discuss their knowledge and experience of using ICT and their observations of its use outside school. They assess the use of ICT in their work and are able to reflect critically in order to make improvements in subsequent work.

Level 6

Pupils develop and refine their work to enhance its quality, using information from a range of sources. Where necessary, they use complex lines of enquiry to test hypotheses. They present their ideas in a variety of ways and show a clear sense of audience. They develop, try out and refine sequences of instructions to monitor, measure and control events, and show efficiency in framing these instructions. They use ICT based models to make predictions and vary the rules within the models. They assess the validity of these models by comparing their behaviour with information from other sources. They discuss the impact of ICT on society.