

Bomere and the XI Towns Federation Knowledge Organiser - Computing

Topic: Data and information – Data logging

Class/Year Groups: Stiperstones

Term: Spring

What you already know?

This unit progresses childrens' knowledge and understanding of data and how it can be collected over time to answer questions. Specifically, it builds on the concept of answering questions with data which is first introduced in the KS1 data and information units. The unit also introduces the idea of automatic data collection. Children are also introduced to data in tables and graphs, knowledge they will build on in the Year 5 unit (flat file databases) and the Year 6 unit (spreadsheets).

What you will learn:

Data Recording

-One way for us to record data is by writing it down. Some data loggers can also record data themselves, which we can download later. Computers can also help us to record data, e.g. by connecting our data loggers to computers and opening data logging software.



-An advantage of this is that computers can record data automatically, meaning that someone does not need to sit waiting for a long period of time. Data loggers can be set to measure at different intervals (points in time).

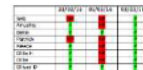


-Data logger software can also be used to show different charts and graphs. This can save the user a lot of time!



Data Collection

Asking Questions: Data gathered over time can be used to answer important questions. For example, the class register can be used to answer questions about children's attendance. Before collecting data, we need to carefully consider which questions we are trying to answer.



-Sensors: Our senses (sight, hearing, smell, taste, touch) detect things in our environment. Computers have input device sensors which help them to sense things.

Some examples are:

- Microphones (sound)
- Camera (light)
- Touchscreen (touch)



- Data Loggers: Data loggers have sensors built into them. They can be used to detect and record data. Data loggers often contain:

- A heat sensor (to record the temperature)
- A light sensor (to record brightness)
- A sound sensor (to record the noise).

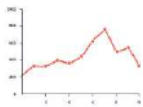


Vocabulary:

data	numbers and figures
information	what we understand from analysing data
data logger	used to detect and record data
sensor	input device sensors that help computers sense things

Analysing Data

-When scientists collect data, they usually store it so that it can be analysed at any time. The data can also be shared so that other scientists can use it.
-Tables and graphs can be used to present the data in a useful way for reading and understanding it. It is important to be able to see trends as clearly as possible.



Answering Questions

-Remember that data should be collected for a reason: to answer questions.
-It is very important to ensure that the testing that you do is fair and reliable, otherwise the data that you get back may not give you the accurate answers that you need.
-It is important to interpret your data carefully. You can then write a report detailing what your conclusions are.

National Curriculum Objectives:

Computing – Key stage 2

- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information

Science – Lower key stage 2/Year 4

- Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.
- They should learn how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data.

