4.4 Data and information – Data logging – Knowledge Organiser

Year↗ ↖ Topic number Hyperlink to planning↑

Key prior learning is highlighted in green, but must be revisited and reinforced during this teaching sequence.

Overview

Arduino Science Journal App

Data Logging

-Data is raw numbers and figures. Information is what we can understand from analysing data.

-There are lots of different ways that we can collect, log and interpret data, including by using data loggers.

-Data loggers and logging software can be used to automatically capture data. We can then draw conclusions in answer to our research questions.

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.

	23/02/16	01/03/16	08/03/16
Seb	NP	NP	P
Anusha	P	NP	P
Belle	P	P	P
Patrick	NP	NP	P
Reece	P	NP	P
Ollie H	P	NP	P
Ollie	P	NP	P
Oliver D	P	P	P

-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 such as:

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

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. IPADS can also help us to record, collect and show data – using APPS like Arduino.

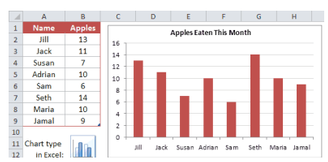
-An advantage of this is that IPADS and computers can record data automatically, meaning that someone does not need to sit waiting for a long period of time. Data loggers can be set to measure at different intervals (points in time).

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

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 clearly.



Answering Questions

-Remember that data should be collected for a reason: to answer questions.

-Make sure 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 think carefully about what your data shows.

Input device Sensor Data logger Logging Data point Interval Analyse Data set Import Export Logged Collection Review Conclusion