National Centre for Computing Education

Raspberry Pi

Year 4 – Data logging

Lesson	Brief overview	Learning objectives
1 Answering questions	Learners will consider what data can be collected and how it is collected. They will think about data being collected over time. Learners will also think about questions that can and can't be answered using available data, and reflect on the importance of collecting the right data to answer questions.	To explain that data gathered over time can be used to answer questions • I can choose a data set to answer a given question • I can suggest questions that can be answered using a given data set • I can identify data that can be gathered over time
2 Data collection	Learners will build on the idea of collecting data over time, and be introduced to the idea of collecting data automatically using computers such as data loggers. They will also be introduced to the concept that computers can capture data from the physical world using input devices called 'sensors'. Learners will establish that sensors can be connected to data loggers, which can automatically collect data while not attached to a computer.	To use a digital device to collect data automatically • I can explain what data can be collected using sensors • I can use data from a sensor to answer a given question • I can identify that data from sensors can be recorded
3 Logging	Learners will explore how data loggers work. They will record data at set moments in time and draw parallels with the data points that a data logger captures at regular	To explain that a data logger collects 'data points' from sensors over time

	intervals. Learners will use data loggers away from a computer, then they will connect the loggers to a computer and download the data.	• I can recognise that a data logger collects data at given points • I can identify the intervals used to collect data • I can talk about the data that I have captured
4 Analysing data	Learners will open an existing data file and use software to find out key information. They will analyse a data file which shows hot water cooling over time.	To recognise how a computer can help us analyse data • I can view data at different levels of detail • I can sort data to find information • I can explain that there are different ways to view data
5 Data for answers	Learners will think about questions that can be answered using collected data. They will choose a question to focus on and then plan the data logging process that they need to complete. After learners have completed their plan, they will set up the data loggers to check that their plan will work. This setting up is designed to ensure that the data collection will work, and that learners will have data to use in the next lesson.	To identify the data needed to answer questions • I can propose a question that can be answered using logged data • I can plan how to collect data using a data logger • I can use a data logger to collect data
6 Answering my question	Learners will access and review the data that they have collected using a data logger. They will then use the data collected to answer the question that they selected in the previous lesson. Learners will also reflect on the benefits of using a data logger.	To use data from sensors to answer questions • I can interpret data that has been collected using a data logger • I can draw conclusions from the data that I have collected • I can explain the benefits of using a data logger