National Centre for Computing Education

Raspberry Pi

Year 3 – Connecting computers

Lesson	Brief overview	Learning objectives
1 How does a digital device work?	This lesson introduces the concepts of input, process, and output and how to protect devices using secure passwords. These concepts are fundamental to all digital devices.	To explain how digital devices function • I can explain that digital devices accept inputs • I can explain that digital devices produce outputs • I can follow a process • I can explain what makes a secure password
2 What parts make up a digital device?	Learners will develop their knowledge of the relationship between inputs, processes, and outputs and apply it to devices and parts of devices that they will be familiar with from their everyday surroundings.	To identify input and output devices • I can classify input and output devices • I can describe a simple process • I can design a digital device
3 How do digital devices help us?	Learners will apply their learning from Lessons 1 and 2 by using programs in conjunction with inputs and outputs on a digital device. They will create two pieces of work with the same focus, using digital devices to create one piece of work, and non-digital tools to create the other. Learners will then compare and contrast the two approaches.	To recognise how digital devices can change the way that we work • I can explain how I use digital devices for different activities

		• I can recognise similarities between using digital devices and using non-digital tools • I can suggest differences between using digital devices and using non-digital tools
4 How am I connected?	Many digital devices are now connected to other digital devices, e.g. computers through wires, tablets through Wi-Fi, and smartphones through mobile phone networks. The benefit of connecting digital devices is that it allows information to be shared between users and systems. This lesson introduces the concept of connections and moving information between connected devices. Learners will learn to explain how and why computers are joined together to form networks.	To explain how a computer network can be used to share information • I can recognise different connections • I can explain how messages are passed through multiple connections • I can discuss why we need a network switch
5 How are computers connected?	This lesson introduces key network components, including a server and wireless access points. Learners will examine each device's functionality and look at the benefits of networking computers.	To explore how digital devices can be connected • I can recognise that a computer network is made up of a number of devices • I can demonstrate how information can be passed between devices • I can explain the role of a switch, server, and wireless access point in a network

6 What does our school network look like?	Learners will further develop their understanding of computer networks. They will see examples of network infrastructure in a real-world setting and relate them to the activities in Lesson 5.	To recognise the physical components of a network • I can identify how devices in a network are connected together • I can identify networked devices around me • I can identify the benefits of computer networks