

Ashwell Primary School
Design & Technology Curriculum
Skills & Knowledge Organiser – Digital World



Digital World – Key Stage 2

		Year 3 – Wearable technology	Year 6 – Navigating the world
Skills	Design	<ul style="list-style-type: none"> ▪ Problem solving by suggesting which features on a Micro:bit might be useful and justifying my ideas. ▪ Drawing and manipulating 2D shapes, using computer-aided design, to produce a point of sale badge. ▪ Developing design ideas through annotated sketches to create a product concept. ▪ Developing design criteria to respond to a design brief. 	<ul style="list-style-type: none"> ▪ Writing a design brief from information submitted by a client. ▪ Developing design criteria to fulfil the client's request. ▪ Considering and suggesting additional functions for my navigation tool. ▪ Developing a product idea through annotated sketches. ▪ Placing and manoeuvring 3D objects, using CAD. ▪ Changing the properties of, or combining one or more 3D objects, using CAD.
	Make	<ul style="list-style-type: none"> ▪ Following a list of design requirements. ▪ Writing a program to control (button press) and/or monitor (sense light) that will initiate a flashing LED algorithm. 	<ul style="list-style-type: none"> ▪ Considering materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo). ▪ Explaining material choices and why they were chosen as part of a product concept. ▪ Programming an N, E, S, W cardinal compass.
	Evaluate	<ul style="list-style-type: none"> ▪ Analysing and evaluating wearable technology. ▪ Using feedback from peers to improve design. 	<ul style="list-style-type: none"> ▪ Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool. ▪ Developing an awareness of sustainable design. ▪ Identifying key industries that utilise 3D CAD modelling and explaining why. ▪ Describing how the product concept fits the client's request and how it will benefit the customers. ▪ Explaining the key functions in my program, including any additions. ▪ Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool. ▪ Explaining the key functions and features of my navigation tool to the client as part of a product concept pitch. ▪ Demonstrating a functional program as part of a product concept pitch.
Knowledge	Technical	<ul style="list-style-type: none"> ▪ To understand that, in programming, a 'loop' is code that repeats something again and again until stopped. ▪ To know that a Micro:bit is a pocket-sized, codeable computer. ▪ To know that a simulator is able to replicate the functions of an existing piece of technology. 	<ul style="list-style-type: none"> ▪ To know that accelerometers can detect movement. ▪ To understand that sensors can be useful in products as they mean the product can without human input.
	Additional	<ul style="list-style-type: none"> ▪ To know what the 'Digital Revolution' is and features of some of the products that have evolved as a result. 	<ul style="list-style-type: none"> ▪ To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request.

	<ul style="list-style-type: none"> ▪ To understand what is meant by 'point of sale display.' ▪ To know that CAD stands for 'Computer-aided design'. ▪ To know what a focus group is by taking part in one. 	<ul style="list-style-type: none"> ▪ To know that 'multifunctional' means an object or product has more than one function. ▪ To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing.
<p>Key Vocabulary</p>	<p>Analogue, analyse, annotate, badge, computer-aided design (CAD), control, design criteria, develop, digital, digital revolution, digital world, display, electronic, electronic products, fastening, feature, feedback, form, function, initiate, layers, monitor, net, opinion, point of sale, product, product design, program, sense, simulator, smart, technology, test, user</p>	<p>application (apps), biodegradable, Boolean, cardinal compass, client, corrode design brief, design criteria, duplicate, environmentally friendly, equipment, function, GPS tracker, if statement, lightweight, loop, mouldable, navigation, pedometer, product lifecycle, product lifespan, program, recyclable, replica, smart, smartphone, sustainable design, value, variable</p>