Digital systems

	Y4	Y6
Term	Autumn 2	Summer 2
Topic or SA		Goss Moor- link to navigating when out walking.
Unit title		Digital Systems- Navigating the World.
Design skills progression **COMMUNICATION** discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern		Creating a design brief submitted from a client (Growing Goss Project). Through annotated sketches, design a box/ container to house the navigational device. Consider the environmental impact of using certain materials and consider more sustainable product choices.
Make skills progression	•	Programme a navigational tool with different functions such as a N,S,E,W cardinal compass using Micro- bit. Learn how to create nets and use them to create boxes which could be use to protect the navigational tool.
Evaluation skills progression		• To present a 'pitch' to a client (Growing Goss). Explain the key functions of my navigational tool. Explain material choices and why they were chosen, describe how the product fits the client's request and how it will benefit the customers • Consider the views of others in improving their work.

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Technical knowledge progression		To know how to program a navigational tool. To know how to troubleshoot any problems.
Sequence of lessons		1) Read the letter from Growing Goss about developing a navigational device to use on Goss Moor. Create a design brief. 2) Using Micro-bit, create a program for a navigational device. 3) Practise the skill of making a box from a net which might be used as a container to protect the navigational device. Consider sustainable and non-sustainable materials 4) Using annotated sketches, develop ideas for what you would like your container to look like. 5) Make the navigational device 6) 'Pitch' your product to the client and evaluate your final product which includes testing it.
vocabulary	torch, light bulb, LED, series circuit, battery, cell, wire, copper, switch, conductor, insulator, component, design, success criteria, target audience, evaluate, test, electricity, electrical item, electronic item, input, recyclable, theme	Design brief, Smart, equipment, compass, pedometer, GPS tracker, tablet, program, code, troubleshoot, input, output, variable, sustainable, non-sustainable, net, annotated sketch, evaluate, test out

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Tools/equipment	wires, bulbs, bulb holders, batteries, battery holders, foam, bubble wrap, tape, tissue paper, string, recyclable materials or objects, reflective material, card/cardboard, scissors, split pins, paper clips	Micro-Bit, nets, card.
Key events and/or individuals	Additional To know facts from the history and invention of the electric light bulb(s) - by Sir Joseph Swan and Thomas Edison	