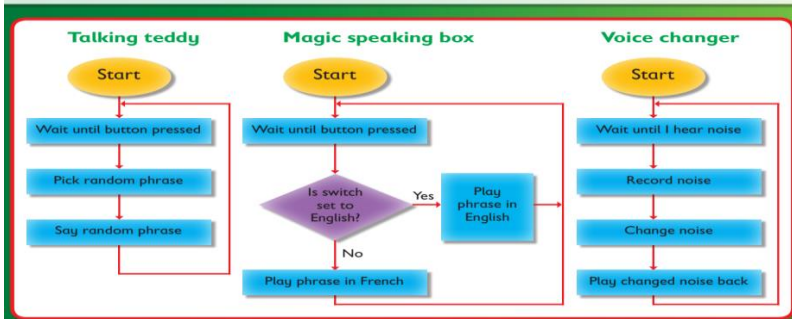In this unit, the children work together to design a simple toy that incorporates sensors and outputs and then create an on-screen prototype of their toy in Scratch.

Computer Science

Prior Knowledge

Children will already know how to design, write and debug simple programs that accomplish specific goals.

Toys and algorithms

Computing Key Vocabulary	
Algorithm	A clear set of rules or a precise step-by-step guide to solve a problem or achieve a particular objective.
Computer	An electronic device for storing and processing data
Debug	To fix the errors in a program
Input	An input is data that a computer receives.
Interactive	nteractive refers to software which accepts and responds to input from people
Output	An output is data that a computer sends.
Prototype	An early sample of a product or program built to test the concept.
Proximity Sensor	A sensor able to detect the presence of nearby objects without any physical contact.
Pseudocode	A simplified programming language, used in program design.
Sensor	A sensor is a device that detects and responds to some type of input from the physical environment.
Simulation	Using a computer to model the state and behaviour of real-world (or imaginary) systems/products.

E-safety: To compare and contrast the ways messages were sent before and after the internet.

SWITCHEDON
Computing

This half term we will be using…	
Hardware	**Software/Apps**
Chromebooks	Scratch

SCRATCH

Blinking teddy

Sprite 1

when I receive message1
switch costume to costume2
wait 0 secs
switch costume to costume1
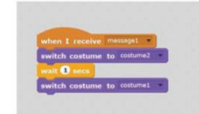
What happens?
When Sprite 1 receives message 1 from sprite 2, it changes costumes to show eyes blinking.

Common Input Devices of Computer

Keyboard | Mouse | Joystick | Trackball
Scanner | Touchscreen | Webcam | Microphone

Common Output Devices of Computer
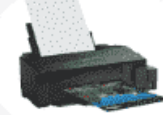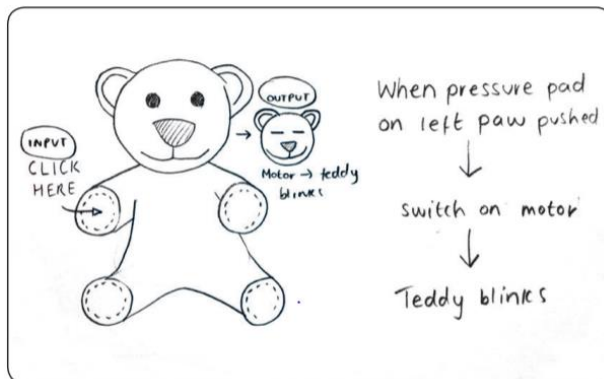
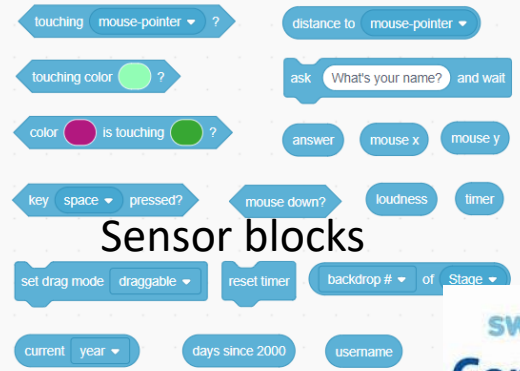Monitor | Printer | Speakers | Headphones
Projector | Touchscreen | Plotter | GPS

INPUT
CLICK HERE

OUTPUT

Motor → teddy blinks

When pressure pad on left paw pushed
↓
switch on motor
↓
Teddy blinks

Prototype

touching mouse-pointer ?
touching color ?
color is touching ?
key space pressed?
set drag mode draggable

distance to mouse-pointer
ask What's your name? and wait
answer   mouse x   mouse y
mouse down?   loudness   timer

Sensor blocks

reset timer   backdrop # of Stage

current year   days since 2000   username

SWITCHED ON
Computing