



SUPER 6

- I know that being able to follow and give simple instructions is important in computing
- I am able to follow and give simple instructions to a game or activity
- I understand that it is important for instructions to be in the right order
- I understand why a set of instructions may have gone wrong
- I am beginning to make corrections in instructions that may have gone wrong
- I can explain what inputs and outputs are

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In this unit, you will learn how to follow and give instructions. You will learn how to spot mistakes (**bugs**) in instructions and correct (**debug**) them.

I can use common words and phrases relating to computing

instruction		A set of commands or directions about how to do something
direction		One part of an instruction
program		A set of instructions for a computer



What is happening in this set of pictures?  
Can you **predict** what will the **output** be?  
Are there any steps (or **directions**) that are missing?



What is happening in this set of pictures?  
Can you **predict** what will the **output** be?  
Are there any steps (or **directions**) that are missing?  
Are the directions in the correct order?  
Could you **debug** these instructions?

Other words or phrases I may use...

...for programming		robot, instruction, program, turtle, control, rule, coding, design, up, down, underneath, centre, (anti)clockwise, position, direction, above, below
...for hardware, systems, etc.		network, internet, web, computer, app, Google, search engine, gif, digital
...for controls		keyboard, double-click, mouse, right-click, left-click, screen, touchscreen, shut down, start, menu
...for talk about IT		research, search



An **output** is something that is created when a set of instructions are followed.  
A meal is the **output** of a recipe.



A set of instructions for a computer is called a **program**. People who create programs are called **programmers**.



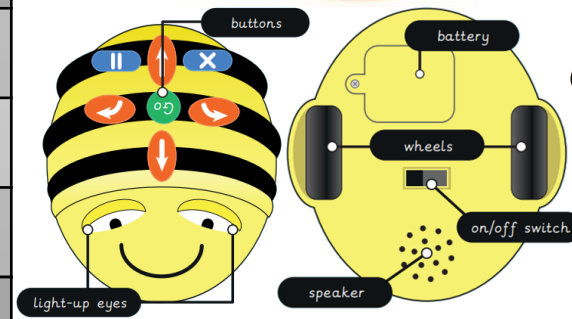
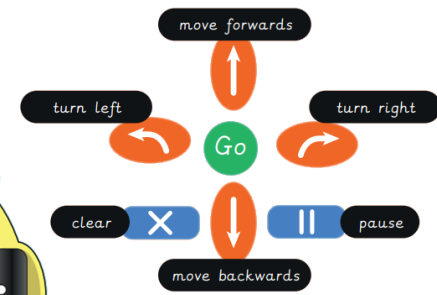
SUPER 6

- I recognise cause and effect when pressing buttons on a Bee-Bot
- I can discuss and demonstrate how the Bee-Bot works
- I can record video, ensuring everyone is in the shot
- I can give several clear instructions in sequence
- I can program a Bee-Bot to reach a destination
- I can identify and correct mistakes in my programming

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In this unit, you will learn how to program a **Bee Bot**; an exciting programmable robot



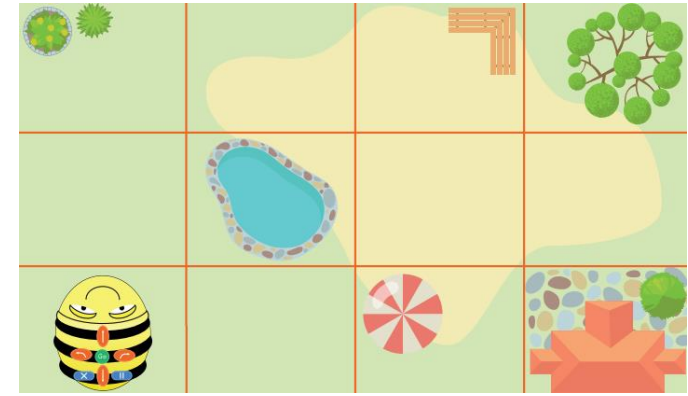
Use the buttons to **input directions and commands**. Directions and commands together are called a **program**

**I can use a wide variety of everyday computing terms**

code		Words, numbers and symbols that make a computer language
predict		To make a guess about what will happen
inputting		Putting information or code into a computer

**Other words or phrases I may use...**

...for programming		sprite, (de)bug, data, information, object, model, process, horizontal, vertical, diagonal (i.e. sloped), symmetrical, reflect, left, right
...for hardware, systems, etc.		device, application, tool, file, drive, disk, (sub)folder, save, save as, internet search, video, audio, text, image, hardware, editing, presentation software, window, material
...for controls		shift, control, caps lock, password, return, enter, backspace, delete, open, close, select, zoom, highlight
...for talk about IT		similarity, difference, landscape, portrait



Can you **predict** where the Bee Bot will go if it follows this **program**?

Could you **input** your own **code** to make the Bee Bot travel to the large tree?

**Did you know?**

The word **robot** comes from a Czech word **robota**, which means **forced labour** (work); it was first used in a play in 1920



SUPER 6

- I can log in and out of email
- I can edit and send a simple email with a subject plus 'To' and 'From' in the body of the text
- I can type in the email address correctly and send the email
- I can add an attachment to an email
- I can write an email using positive language, with an awareness of how it will make the recipient feel
- I recognise when an email may be fake and explain how I know

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In this unit, you will learn how to send emails to different people

**I can start using specialist vocabulary and computing terms**

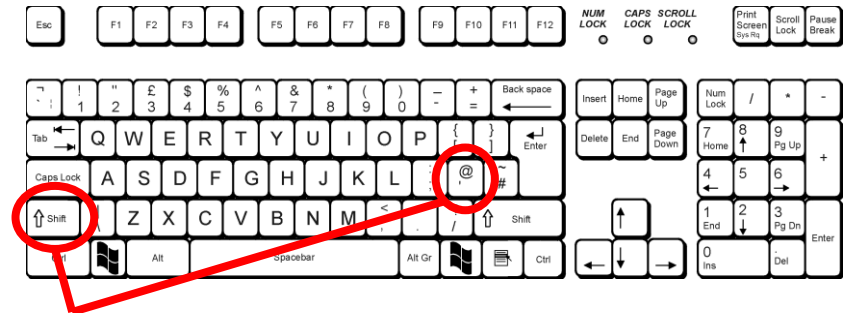
email		Electronic mail which allows us to send messages and files from one account to another over a network
subject bar		Where you put the title of the email so the recipient knows what it is about
compose		To create or write an email
attachment		A function that allows you to add files to an e-mail before sending it

**Other words or phrases I may use...**

...for programming		digitise, algorithm, sequence, series, programming language, purpose, value, perpendicular
...for hardware, systems, etc.		motor, input, output, digital resources, text, post, social media, community, meme, email, blog, vlog, forum, font, URL, word processing, voice recognition, kilobyte, megabyte, tab, control panel, icon, file extension, personal data
...for controls		'control alt', cursor, short cut, drag, drop, cut, copy, paste, crop, rotate, flip, top-and-tail, screengrab, minimise, maximise
...for talk about IT		relevance, retrieve, content, numerical, clarify, opinion, communication

**Carbon copy (Cc)** means you can send an email to more than one person at a time

**Blind carbon copy (Bcc)** means you can send an email to more than one person at a time **and** the recipients cannot see who else has received the email



Press these two keys at the **same** time to type the @ symbol  
You need to be able to type the @ symbol to write an **email address**  
Example year3@whitmore-pri.com

Did you know?  
You should watch out for emails with unknown links or attachments.  
**Do not click or open them!** Inform a trusted adult!





SUPER 6

- I understand what the different code blocks do
- I understand the terms pattern recognition and abstraction, and how they help to solve a problem
- I can create a Scratch program which draws a square and at least one other shape
- I understand how computational thinking can help to solve problems
- I can apply computational thinking to problems I face
- I can create a simple game

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Is this unit, you will learn about many different blocks in Scratch and how to use them

Different colour blocks have different functions

They attach to each other using the bumps at the bottom of blocks and the notches at the tops of blocks



Do you think adults who work as programmers use Scratch? Why or why not?

**I can use specialist vocabulary and computing terms**

broadcast		A message sent from one sprite to another
conditional		Helps the computer decide what to do next based on the user's response
parameters		When a block has a 'gap' for adding data, these gaps are called parameters
variables		A container or holder for storing information that can change; e.g. numbers or text

**Motion:** move  steps

move, turn, slide or point a sprite in different directions.

**Sound:** start sound

play sounds, add effects or change the volume and pitch when a sprite performs an action.

**Looks:** costume

add speech, thought bubbles, change a sprite's size or appearance or switch the background.

**Events:** when  clicked

perform an action when a keyboard key or sprite is clicked or when a condition is met.

**Control:** repeat

loops to repeat code, if statements for when conditions are met or clone code.

**Other words or phrases I may use...**

...for programming		repetition, selection, simulation, pattern, logical reasoning, structure, cause, characteristic, phase, transition, angle
...for hardware, systems, etc.		sensor, physical, system, browser, gigabyte, back up, jpeg, pixel, resolution, quality, Mpeg, wav, pdf
...for controls		control pane animation pane, pop up, publish, share
...for talk about IT		inappropriate, contribution, manipulate, reliability



Did you know?  
There are many different **sprites** (or characters) in Scratch that you can use in your programming



**Operators:**  <  >

maths blocks, e.g. more than, less than, equal to, and, or and not statements; (+, -, x, ÷).

**Sensing:** touching  mouse-pointer ?

respond to certain actions, such as moving the mouse pointer, questions, timers and dates.

**Variables:** set  my variable to

create and manage variables, track a score or remember a user's name.

**My blocks:** myBlock

create your own coding blocks, give them a name and add instructions.







SUPER 6

- I can iterate ideas, testing and changing throughout the lesson
- I can correct my own simple mistakes
- I can include a repeat and explain its function to enhance music
- I can code a piece of music that combines a variety of structures
- I can use loops in my programming
- I recognise that programming music is a way to apply my skills

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**Block Palette**

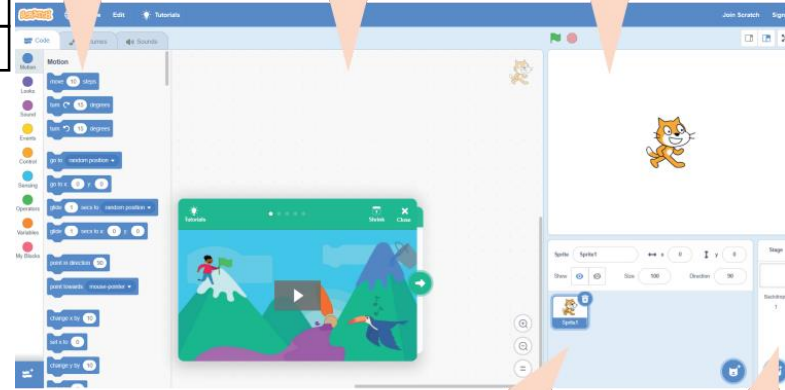
This is where you choose the blocks to use.

**Scripts Area**

This is where you create your program.

**Stage**

This is where you see your program in action.



**Sprites**

This is what characters or objects are called in Scratch

**Backdrop**

Backgrounds for your project.

In what ways is writing with code on a computer easier than using a musical instrument?

What do you need to think about when composing music for a film **soundtrack**?

Different colour blocks have different functions  
Blocks attach using the bumps at the bottom and the notches at the top



**I can use specialist vocabulary and computing terms in appropriate ways**

beat		The basic unit of time, or pulse, of a piece of music
command		Command blocks tell the sprites to do things; e.g. move 10 steps
mind map		A diagram where information is presented visually with the main idea in the centre and other ideas coming off it
tutorials		When you play a game for the first and the program gives you suggestions about how to use each of the functions and controls to teach you how to play
soundtrack		A music recording that accompanies media such as a game, TV show or film

**Other words or phrases I may use...**

...for programming		protocol, deconstruct, improve, efficiency, audience, complex, prior, subsequent
...for hardware, systems, etc.		gateway, hub, router, server, driver, cookies, file directory, send, reply, CC, BCC, reply all, recipient, field, permissions, cache, flash drive, memory stick, HTML, open source, wikis, solid state, fibre optic, identity theft
...for controls		internet/browser history, bookmark, password strength
...for talk about IT		impact, obstacle, crucial, rigorous, verify, context, paraphrase, quote, verbatim



SUPER 6

- I understand why barcodes and QR codes were created then create my own QR code using a QR code generator website
- I can explain how infrared can be used to transmit a Boolean type signal
- I can explain how RFID works, recall a use of RFID chips, and type formulas into spreadsheets
- I can take real-time data and enter it effectively into a spreadsheet
- I can present data I have collected as an answer to a question and recognise the value of analysing real-time data
- I can analyse and evaluate transport data and consider how this provides a useful service to commuters

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**I can use specialist vocabulary and computing terms in sophisticated ways**

barcode		A machine-readable code of lines and numbers, printed on an item and scanned to identify the item and information about it
infrared		The red section of the electromagnetic spectrum; we cannot see it with our eyes, but we can use it to transmit small amounts of data
proximity		Nearness in space, time, or a relationship
RFID		<b>R</b> adio <b>F</b> requency <b>I</b> dentification devices use radio waves to see where someone or something is
transmission		When something is passed to or sent to another place

**Other words or phrases I may use...**

...for programming		binary, functionality, aesthetics, user, interface, deterministic, simultaneous, cumulative, concentric, radial, intersecting
...for hardware, systems, etc.		IP address, phishing, virus, terabyte, metadata, VoIP service
...for talk about IT		controversy, prejudice, authentic, plausible, analyse, discern, copyright, plagiarism

Did you know?

**Infrared** can be used for many different everyday (and not so everyday) uses. Which of these have you encountered before?

Thermal imaging

Night vision

Remote controls for TV/VCR

Cooking

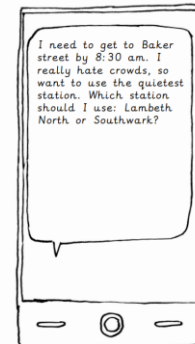
Short range communication

Which of these can send the most information?

QR codes    barcodes

Transport networks worldwide collect huge amounts of **data** (information). They **analyse** this data to help solve problems.

In this unit, you will be **systems/data analysts** and use data to help commuters solve problems.



Most bank cards have an **RFID** chip. This is how 'contactless' payments work.