Key Knowledge, Vocabulary and Questions

Computing: Computing Systems and Networks - Systems and Searching

Year 5

Key knowledge

- Know that computers can be connected together to form systems.
- Know the difference between physical and electronic connections.
- Know how search engines select results.
- Know why the order of web results is important, and to whom.






Key vocabulary

System	A device that can accept, store and retrieve, process and output information.
Input	Data that is sent to a program to be processed. (Recapped from Y3)
Output	The result of data processed by a computer.
Digital	Information stored in number form in a computer. (Electronic connection)
Analogue	Physical information, harder to store on a computer. (Physical connection)
Search engine	A website that allows us to search through websites.
Web crawler	Used by search engines to examine all the information on a site and categorise it.
Index	The information captured by a web crawler is stored in an index.
Selection	The websites a search engine chooses to display.
Ranking	The order in which web pages are displayed by a search engine.

Key questions

1	What is the input and output of a washing machine system?
2	What is the difference between analogue and digital?
3	What is the difference between a search engine and a web browser?
4	What causes a website to be closer to the top of the search results on a search engine.

Key Knowledge, Vocabulary and Questions

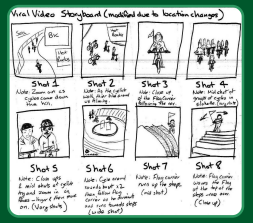
Computing: Creating Media - Video Production

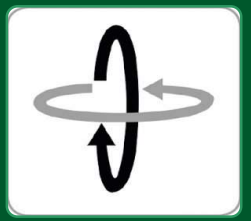
Year 5

Key knowledge

- Know what makes a video effective.
- Know which digital devices can record video.
- Know a range of video capture techniques.
- Know what storyboard is and why one is used.
- Know that video can be improved through reshooting and editing.





Key vocabulary

Video	A visual media format.
Fixed position	Camera is still on a stand.
Hand-held	Camera is held by a person.
Talking head section	Part of a video where you can see a person's head and body.
Panning section	Part of a video where the camera angle changes to show different things.
Zoomed in section	When the camera zooms towards something to show finer detail.
Close up	Subject close to the camera.
Mid-range	Subject further away.
Long shot	Subject distant from the camera.
Storyboard	A plan for a video.
Pan/Tilt	Pan is move right and left. Tilt is move up or down.
Reshoot	Do rerecord a scene from a video that you are unhappy with.

Key questions

1	Looking at a video. Can you tell which type of shot this is?
2	Is the camera fixed or hand-held?
3	What are the sections of a video called?
4	Which device would you use to make a video like this?
5	Which words would you use to describe how far the camera is away from the subject?
6	What do video creators use storyboards for?
7	What is the difference between pan and tilt?
8	What are reshoots when making a video?

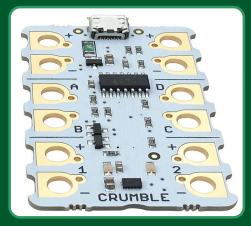
Key Knowledge, Vocabulary and Questions

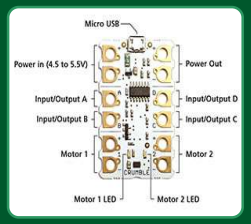
Computing: Programming A – Selection in Physical Computing

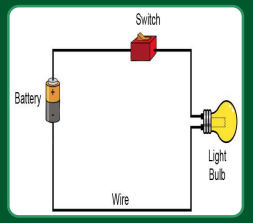
Year 5

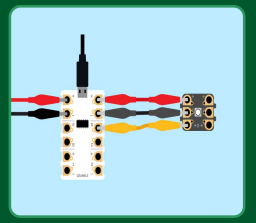
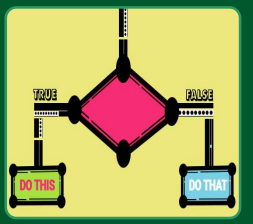
Key knowledge

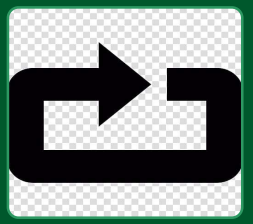
- Know what a microcontroller is and what it does.
- Know what a count-controlled loop is.
- Know what a conditional loop is.
- Know the meaning of selection in programming.







Key vocabulary

Microcontroller	A small device that can be programmed to control components that are connected to it.
Crumble	A type of microcontroller.
Sparkle	A programmable light that can be connected to a Crumble.
Circuit	A complete circular path that electricity flows through.
LED	The light in a sparkle and many other components. Stands for light-emitting diode.
Count-controlled loop	A command that repeatedly runs a defined section of code a predefined number of times. (Recapped from Y4)
Loop (condition-controlled)	A command that repeatedly runs a defined section of code until a condition is met. (In Scratch this is repeat/until)
Selection	Part of a program where if a condition is met, then a set of commands is run.
Condition	A statement that can be either True or False.

Key questions

1	What does a microcontroller do?
2	Which microcontroller have you used?
3	What is the name of the light you attach to it?
4	What is a circuit? How does it relate to Crumbles?
5	What does LED stand for?
6	What is a count-controlled loop?
7	Why would you use a conditional loop?
8	What does selection mean in coding?
9	What is a condition?

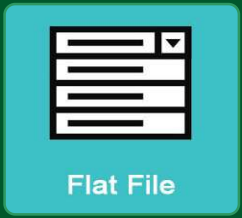
Key Knowledge, Vocabulary and Questions

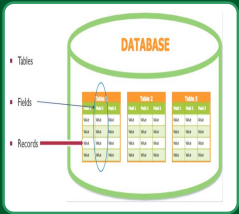
Computing: Data and Information – Flat-File Databases

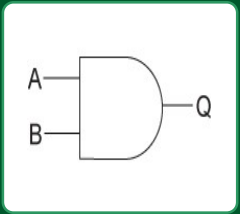
Year 5

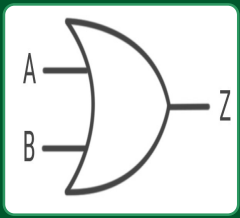
Key knowledge

- Know the difference between data and information.
- Know what a flat file database is and how it is different to a branching database.
- Know that a database consists of records and fields.
- Know the different ways to view records and identify their benefits.
- Know that computer programs can be used to compare data visually.
- To explain that tools can be used to select specific data.









Key vocabulary

Data	Information about something (does not have to have order or meaning). (Recapped from Y1)
Information	Data put into a context that provides meaning. (Recapped from Y1)
Flat file database	Consists of records.
Record	One data set containing fields.
Field	Each piece of data in a record. Every record in a database has the same fields.
Table view	Viewed in a table with many records.
Record view	A single detailed record view.
Chart view	Data shown in a graph or chart.
Criteria	The terms you search for in a database.
AND	Searching for two terms at the same time (data has to match both)
OR	Searching for two terms at the same time (data has to match only one)

Key questions

1	What is the difference between data and information?
2	What is the difference between a flat file database and a branching database?
3	Explain what is meant by field, record and database.
4	What would be the best way to view data comparing the population of countries?
5	In a database about children's favourite colours, what would you search for if you wanted to find all the girls whose favourite colour is red?

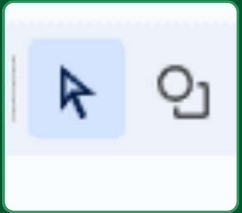
Key Knowledge, Vocabulary and Questions

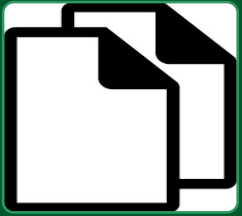
Computing: Creating media – Introduction to vector graphics

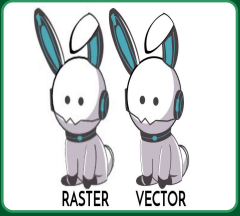
Year 5

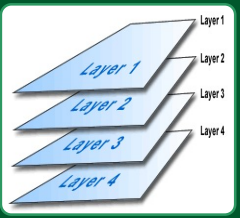
Key knowledge

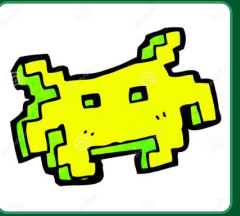
- Know that drawing tools can be used to produce different outcomes.
- Know that vector drawings are made using lines and shapes.
- Know that vector drawings consist of layers.
- Know why we would group shapes together.











Key vocabulary

Tool	A tool used in a drawing package (e.g select or draw a shape).
Shape tool	Used to draw different types of shapes.
Zoom tool	Tool used to make the image look bigger so fine details can be drawn.
Copy	Copies part of a drawing to the clipboard. (ctrl + c)
Paste	Makes another copy of the drawing you copied to the clipboard. (ctrl + v)
Vector	A type of drawing made with lines and shapes. It can be resized without any loss of quality. Opposite of raster.
Raster	Drawings made using dots (pixels).
Layers	The order in which shapes are displayed on a vector drawing package. (ctrl + ↑↓)
Group	A tool to move and edit more than one shape at once by grouping them together.

Key questions

1	What kind of tools could you use in Google drawings?
2	What do they do?
3	What could you draw with the shape tool?
4	What would you use to edit small details?
5	What are the shortcut keys for copy and paste?
6	What is the difference between vector and raster images?
7	What are the benefits of vector / raster?
8	What would you change if something went behind another shape in a vector drawing package?
9	Why would you group shapes together in a vector drawing?
10	What kind of tools could you use in Google drawings?

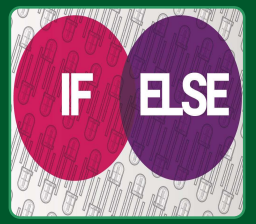
Key Knowledge, Vocabulary and Questions

Computing: Programming B – Selection in Quizzes

Year 5

Key knowledge

- Know how selection is used in computer programs. (Recapped from Y5 Spring 1)
- Know that a conditional statement connects a condition to an outcome.
- Know how selection directs the flow of a program.


Key vocabulary

Loop (condition-controlled)	A command that repeatedly runs a defined section of code until a condition is met. (In Scratch this is repeat/until)
Selection	Part of a program where if a condition is met, then a set of commands is run.
Condition	A statement that can be either True or False.
IF	A type of conditional statement.
THEN	After an IF activates if the condition is met.
ELSE	After an IF activates if the condition is not met.

Key questions

1	Why would you use a conditional loop?
2	What does selection mean in coding?
3	What are the two outcomes of a condition?
4	What does an IF statement/block do in Scratch / coding?
5	What do THEN and ELSE mean in Scratch / coding?
6	Why would you use selection in an algorithm?