

The Wolds Federation of Schools

Computing Curriculum



Technology is best when it brings people together

Matt Mullenvey

Computing with its deep links to science, maths and DT, prepares children to take a full part in an increasingly technological future. It supports children to think logically and solve problems. As both intensively creative but challenging subject computing supports the development of a rounded and well- balanced learner. If children are to act as agents for change for themselves they need access to a broad and balanced computing curriculum and the knowledge and skills to access the next step in their learning journey.

The Computing curriculum is divided up into three strands: Information Technology, Computer Science and Digital Literacy. This curriculum is implemented throughout the Federation from the Early Years Foundation Stage through to Year 6 through the use of Teach computing and Project Evolve. Computing is taught in a blocked subject in order to make the best use of the hardware available.

KS1

In KS1 there is a two-year cycle with two units per term. Careful consideration has been given to the order of the units to build upon previous learning and to make sure there is progression in the mixed age classes. Online safety is golden thread through our computing curriculum so the children our always learning how to keep themselves safe online.

KS2

In KS2 it we also deliver the curriculum on a two-year rolling programme, so there is a two-year programme for lower KS2 and a programme for upper KS2. The teachers in Beswick and Bishop Wilton carefully plan their delivery of these units so that there is an appropriate progression in knowledge and skills across the whole of KS2. In this way computing is unique of the foundation subjects but it was vital to ensure the highest standards for all children. Again, online safety is threaded through all the units of work.

Evidence of work

Computing is evidenced is two ways through our online platform teams and where appropriate in computing books.

Assessment

In computing every lesson includes formative assessment opportunities for teachers to use. These opportunities are listed in the lesson plan and are included to ensure that misconceptions are recognised and addressed if they occur. They vary from teacher observation or questioning, to marked activities. These assessments are vital to ensure that we as teachers are adapting our teaching to suit the needs of the pupils that we work with. The learning objective and success criteria are introduced in the slides at the beginning of every lesson. At the end of every lesson, pupils are invited to assess how well they feel they have met the learning objective using thumbs up, thumbs sideways, or thumbs down. This gives pupils a reminder of the content that has been covered, as well as a chance to reflect. It is also a chance for teachers to see how confident the class is feeling so that they can make changes to subsequent lessons accordingly.

For KS2 every unit includes a summative assessment framework in the form of either a multiple-choice quiz (MCQ) or a rubric. All units are designed to cover both skills and concepts from across the computing national curriculum. Units that focus more on conceptual development include an MCQ. Multiple choice quiz (MCQ) Each of the MCQ questions has been carefully chosen to represent learning that should have been achieved within the unit. In writing the MCQs, we have followed the diagnostic assessment approach to ensure that the assessment of the unit is useful to determine both how well pupils have understood the content, and what pupils have misunderstood, if they have not achieved as expected. Each MCQ includes an answer sheet that highlights the misconceptions that pupils may have if they have chosen a wrong answer. This ensures that teachers know which areas to return to in later units.

This is the long-term plan for computing across KS1 and KS2

		Autumn		Spring		Summer	
		Term 1 Technology all around us	Term 2 Creating Media	Term 3 Creating Media	Term 4 Data and Information	Term 5 Programming A	Term 6 Programming B
Y1/2	Cycle A	Technology around us (Y1)	Digital Painting (Y1)	Digital Photography (Y2)	Grouping Data (Y1)	Moving Robot (Y1)	Robot Algorithms (Y2)
	Cycle B	IT Around Us (Y2)	Digital Writing (Y1)	Digital Music (Y2)	Pictograms (Y2)	Programming Animations (Y1)	Programming Quizzes (Y2)

		Autumn		Spring		Summer	
		Term 1 Technology all around us	Term 2 Creating Media	Term 3 Creating Media	Term 4 Data and Information	Term 5 Programming A	Term 6 Programming B

Y3/4	Cycle A	Connecting Computers (Y3)	Stop Frame Animation (Y3)	Audio Production (Y4)	Branching databases (Y3)	Sequencing Sounds (Y3)	Repetition in Shapes (Y4)
	Cycle B	The Internet (Y4)	Desktop publishing (Y3)	Photo Editing (Y4)	Data Logging (Y4)	Events and Actions (Y3)	Repetition in Games (Y4)

		Autumn		Spring		Summer	
		Term 1 Technology all around us	Term 2 Creating Media	Term 3 Creating Media	Term 4 Data and Information	Term 5 Programming A	Term 6 Programming B
Y5/6	Cycle A	Communication and Collaboration (Y6)	Video Production (Y5)	Web Page Creation (Y6)	Spreadsheets (Y6)	Selection in Physical Computing (Y5) Crumble	Variables in Games (Y6)
	Cycle B	Systems and Sharing (Y5)	Introduction into Vector Graphics (Y5)	3D Modelling (Y6)	Flat- File Databases (Y5)	Selection in Quizzes (Y5)	Sensing Movement (Y6) Microbit

Explicit opportunities to develop SMCS	Social development – understanding environment, communicating	Cultural development – showing creative flair	Cultural development – showing creative flair	Cultural development – grouping and understanding the world		
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Progression in substantive and disciplinary knowledge, topic by topic

Year 1

Computing systems and networks – Technology around us

Vocabulary	Topic specific vocabulary	Technology, Computer, mouse, trackpad, keyboard, screen, double-click, typing, click, drag, program, type, save, edit, file, cursor, delete, text, log in, username, password, log out, save
Key concepts	Technology around us	
<u>Key Outcomes</u>		• To explain that technology is something that can help us • To identify examples of technology • To explain how examples of technology help us • To recognise that a computer is an example of technology • To recognise that choices are made when using technology • To explain why rules are needed when using technology

Year 1

Creating Media- Digital Painting

Vocabulary	Topic specific vocabulary	paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool, Henri Matisse, shape tool, fill tool, Wassily Kandinsky, tools, feelings, colour, brush style, Georges Seurat, pointillism, brush size, pictures, painting, computers, like, prefer, dislike
Key concepts	Digital Painting	
<u>Key Outcomes</u>		• To explain what different freehand tools do • To recognise computers can be used to create art • To decide when it's appropriate to use each tool • To consider impact of choices made • To compare painting using a computer with painting using brushes

Year 1

Programming A- Moving a robot

Vocabulary	Topic specific vocabulary	Instruction, algorithm, program, debug, direction, arrow, undo, forward, backwards, right turn, left turn, clear, go, commands, plan, route
Key concepts	Moving a robot	
<u>Key Outcomes</u>		• To recall words that can be enacted • To match a command to an outcome • To understand that a program is a set of commands that a computer can run • To recall that a series of instructions can be issued before they are enacted

Year 1

Data and Information- Grouping Data

Vocabulary	Topic specific vocabulary	Sort, criteria, data, collate, object, label, search, image, group, colour, size, shape, value, data set, more, less, most, fewest, same
Key concepts	Grouping Data	
<u>Key Outcomes</u>		• To identify that objects can be counted • To recognise that information can be presented • To recognise that information can be presented in different ways

Year 1

Creating Media- Digital Writing

Vocabulary	Topic specific vocabulary	Numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, font, format, compare, typing, writing
Key concepts	Digital Writing	
<u>Key Outcomes</u>		• To recognise that a keyboard is used to enter text into a computer • To recognise that the Shift key changes the output of a key • To recognise that text can be changed • To recognise that text can be edited • To recognise that the appearance of text can be changed • To consider the impact of choices made

Year 1

Programming B- Programming Animations

Vocabulary	Topic specific vocabulary	ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area block, joining, start block, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions, appropriate, design
Key concepts	Programming Animations	
<u>Key Outcomes</u>		• To recall words that can be enacted • To predict the outcome of a command on a device • To match a command to an outcome • To recognise how to run a command (press a button) • To understand that a program is a set of commands a computer can run • To recall that a series of instructions can be issued before they are enacted • To build a sequence of commands in steps • To combine commands in a program

Year 2

Computing Systems and Network- IT Around Us

Vocabulary	Topic specific vocabulary	Information technology (IT), computer, barcode, scanner/scan
Key concepts	IT Around Us	
<u>Key Outcomes</u>		• To recognise different types of computers used in school • To identify that a computer is a part of information technology • To recognise the features of information technology • To say how rules for using information technology can help us • To talk about uses of information technology • To explain how information technology benefits us • To recognise that choices are made when using information technology

Year 2

Creating Media- Digital Photography

Vocabulary	Topic specific vocabulary	Device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, framing, lighting
Key concepts	Digital Photography	
<u>Key Outcomes</u>		• To recognise that some digital devices can capture images using a camera • To talk about how to take a photograph • To recognise that photographs can be saved and viewed later • To make choices when composing my photograph • To recognise features of 'good' photographs • To identify how a photograph could be improved • To explain the effect of light on a photograph • To recognise that photographs can be change after they have been taken • To recognise that some images are not accurate

Year 2

Programming A- Robot Algorithms

Vocabulary	Topic specific vocabulary	Instruction, sequence, clear, unambiguous, algorithm, program, order, algorithm, prediction, artwork, design, route, mat, debugging, decomposition
Key concepts	Robot Algorithms	
<u>Key Outcomes</u>		• To describe that a series of instructions is a sequence • To explain what happens when we change the order of instructions • To recall that a series of instructions can be issued before they are enacted • To recognise that you can predict the outcome of a program

Year 2

Data and Information- Pictograms

Vocabulary	Topic specific vocabulary	More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, data, tally chart, compare, objects, count, explain, more, less, most, least, more common, least common, attribute, group, same, different, object, most popular, least popular, conclusion, tally chart, pictogram, block diagram, common, sharing, data
Key concepts	Pictograms	
<u>Key Outcomes</u>		• To use a tally chart to collect data • To compare objects that have been grouped by attribute • To suggest appropriate headings for tally charts and pictograms • To suggest appropriate headings for tally charts and pictograms • To construct (complete) a given comparison question • To use a computer program to present information in different ways • To explain that we can present information using a computer • To give simple examples of why some information should not be shared

Year 2

Creating media- Digital Music

Vocabulary	Topic specific vocabulary	Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, pattern, rhythm, pulse, pitch, tempo, rhythm, notes, instrument, create, emotion, beat, open, edit
Key concepts	Digital Music	
<u>Key Outcomes</u>		• To identify that computers can be used to play sounds of different instruments • To identify that the same pattern can be represented in different ways • To identify that the same pattern can be represented in different ways

Year 2

Programming B- Programming Quizzes

Vocabulary	Topic specific vocabulary	Sequence, command, program, run, start, outcome, predict, program, blocks, Sprite, algorithm, design, actions, project, modify, change, build, match, compare, debug, features, evaluate
Key concepts	Programming Quizzes	
<u>Key Outcomes</u>		• To describe a series of instructions as a 'sequence' • To recall that a series of instructions can be issued before they are enacted • To use logical reasoning to predict the outcome of a program

Year 3

Computing Systems and Networks- Connecting Computers

Vocabulary	Topic specific vocabulary	Digital device, input, process, output, program, digital, non-digital, connection, network, network switch, server, wireless access point, network cables, network sockets
Key concepts	Connecting Computers	
<u>Key Outcomes</u>		• To describe what an input is • To explain that a process acts on the inputs • To explain that an output is produced by a process • To identify that changing the process can affect the output • To know that a network is made up of a number of computers joined together • To explain how information is passed through multiple connections • To identify the benefits of computer networks

Year 3

Creating Media- Stop-Frame Animation

Vocabulary	Topic specific vocabulary	Animation, flip book, Stop-frame animation, frame, sequence, image, photograph Setting, character, events, stop-frame animation, onion skinning, consistency evaluation, animation, delete, media, import, transition
Key concepts	Stop-Frame Animation	
<u>Key outcomes</u>		• Storyboard has a clear beginning, middle, and end • Movement is smooth • The animation follows the storyboard • Make improvements based on evaluation • Add some additional media

Year 3

Programming A- Sequencing Sounds

Vocabulary	Topic specific vocabulary	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, sequence, event, task, design, code, run the code, order, note, chord, Sprite, stage, costume, backdrop, algorithm, bug, debug, logic, move, resize, extension block, pen up, set up, pen, action, debugging, errors, setup, events
Key concepts	Sequencing Sounds	
<u>Key Outcomes</u>		• Choose a name that describes the action of the sprite • Choose relevant backdrops and costumes • Create an algorithm for each sprite • Adapt their code for additional named sprites • Run their code and identify if it meets the requirements of the task

Year 3

Data and Information- Branching Databases

Vocabulary	Topic specific vocabulary	Attribute, value, questions, table, objects, branching database, database, questions, objects, equal, even, separate, attribute, value, questions, structure, compare, order, organise, question, selecting, information, decision tree
Key concepts	Branching Databases	
<u>Key Outcomes</u>		• To investigate questions with yes/no answers • To identify attributes that you can ask yes/no questions about • To select an attribute to separate objects into two similarly sized groups • To explain that a branching database is an identification tool • To recognise that a data set can be structured using yes/no questions • To explain that a well-structured branching database will enable you to identify objects using fewer questions • To relate two levels of a branching database using AND

Year 3

Creating Media- Desktop Publishing

Vocabulary	Topic specific vocabulary	Text, images, advantages, disadvantages, communicate, font, font style, template, landscape, portrait, orientation, placeholder, template, layout, content, desktop publishing, copy, paste, layout, purpose, desktop publishing, benefits
Key concepts	Desktop Publishing	
<u>Key Outcomes</u>		• Describe how different challenges require different solutions • Choose an appropriate layout for a given scenario • Use placeholders appropriately to divide the page (magazine) • Add text and images • Format some of the text

Year 3

Programming B- Events and Actions in Programmes

Vocabulary	Topic specific vocabulary	Motion, event, sprite, algorithm, logic, move, resize, algorithm, extension block, pen up, set up, design, event, action, debugging, errors, setup, code, setup, test, debug
Key concepts	Desktop Publishing	
<u>Key Outcomes</u>		• To explain that programs start because of an input • To explain what a sequence is • To identify that a program includes sequences of commands • To identify that the sequence of a program is a process • To explain that the order of commands can affect a program's output • To identify that different sequences can achieve the same output • To identify that different sequences can achieve different outputs

Year 4

Computing Systems and Networks- The Internet

Vocabulary	Topic specific vocabulary	Internet, network, router, network security, network switch, server, wireless access point (WAP), website, web page, web address, routing, web browser, World Wide Web, internet, content, links, files, use, content, download, sharing, ownership, permission, information, sharing, accurate, honest, adverts
Key concepts	The Internet	
<u>Key Outcomes</u>		• To describe how networks connect to other networks • To outline how information can be shared via the World Wide Web • To explain that the global interconnection of networks is the internet • To recognise the need for security on the internet • To explain how the content of the World Wide Web is created, owned, and shared by people • To explain that the internet enables us to view the World Wide Web • To explain that the World Wide Web comprises of websites and web pages • To describe the current limitations of World Wide Web media • To evaluate the reliability of content and the consequences of unreliable content

Year 4

Creating Media- Audio Production

Vocabulary	Topic specific vocabulary	audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim, align, layer, import, record, playback, edit, selection, load, save, export, MP3, audio, editing, evaluate, feedback
Key concepts	Audio Production	
<u>Key Outcomes</u>		• Explain the key information that the podcast will include • Identify the types of sound that will be included • Include intro, main content, and outro sections in the plan • Voice recordings are clear and relevant • Appropriate audio is imported • Use editing tools to remove some unneeded sounds or pauses • Additional audio is appropriately placed to play alongside the voice recording • Appropriate volume is set on all tracks

Year 4

Programming A- Repetition in Shapes

Vocabulary	Topic specific vocabulary	Program, Turtle, Commands, Code snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure
Key concepts	Repetition in Shapes	
<u>Key Outcomes</u>		• To identify everyday tasks that include repetition as part of a sequence, e.g. brushing teeth, dance moves • To explain that we can use a loop command in a program to repeat instructions • To identify a loop within a program • To explain that in programming there are indefinite loops and count-controlled loops • To justify when to use a loop and when not to • To explain the importance of instruction order in a loop • To recognise that not all tools enable more than one process to be run at once

Year 4

Data and Information- Data Logging

Vocabulary	Topic specific vocabulary	data, table, layout, input device, sensor, data logger, logging, data point, interval, analyse, data set, import, export, logged, collection, analyse, review, conclusion
Key concepts	Data Logging	
<u>Key Outcomes</u>		• Suggests questions that require data from at least one sensor to answer them • Suggests questions that require data to be collected over time to answer them • Identifies in which time frame to collect data to answer their question • Identifies where the data logger needs to be placed to answer their question • Identifies which sensor(s) needs to be used to answer their question

Year 4

Creating Media- Photo Editing

Vocabulary	Topic specific vocabulary	image, edit, digital, crop, rotate, undo, save, adjustments, effects, colours, hue, saturation, sepia, vignette, edit, retouch, clone, select, copy, paste, combine, made up, real, composite, cut, alter, background, foreground, rotate, crop, zoom, undo, font
Key concepts	Photo Editing	
<u>Key Outcomes</u>		• Identify the types of image needed in relation to their chosen theme • Outline how the images will be used together • Suggest colours and effects that might suit their scene • Select images and combine them into one • Use a range of tools to create their image • Add relevant text to their publication

Year 4

Programming B- Repetition in Games

	Topic specific vocabulary	scratch, programming, sprite, blocks, code, loop, repeat, value, forever, infinite loop, count-controlled loop, costume, repetition, animate, event block, duplicate, modify, design, sprite, algorithm, debug, refine, evaluate
Key concepts	Repetition in Games	
<u>Key Outcomes</u>		• Choose relevant sprites and backdrops for a game • Create an algorithm that includes show, hide, and move blocks • Create an algorithm that includes relevant sound blocks • Create additional sprites and copy code over to those sprites • Modify their code for additional sprites • Run their code and identify whether it meets the requirements of the task

Year 5

Computing Systems and Networks- Systems and Searching

Vocabulary	Topic specific vocabulary	System, connection, digital, input, process, output, search, search engine, refine index, crawler, bot, search engine, ordering, ranking, links, algorithm, search engine optimisation (SEO), searching, web crawler, content creator, selection, ranking
Key concepts	Systems and Searching	
<u>Key Outcomes</u>		• To relate that search engines are examples of large IT systems • To explain why search engines create indices, and that they are different for each search engine • To explain the role of web crawlers in creating an index • To explain how search results are selected • To explain that ranking orders search results to make them more useful • To explain why the order of results is important and to whom • To identify some of the limitations of search engines

Year 5

Creating Media- Video Production

Vocabulary	Topic specific vocabulary	video, audio, camera, talking head, panning, close up, video camera, microphone, lens, close up, mid-range, long shot, moving subject, side by side, high angle, low angle, normal angle, static camera, zoom, pan, tilt, storyboard, filming, review, import, split, trim, clip, edit, reshoot, delete, reorder, export, evaluate, share
Key concepts	Video Production	
<u>Key Outcomes</u>		• Show sequence and progression with a clear beginning, middle, and end • Use appropriate filming techniques and capture the scenes from the storyboard • Captured audio is clear • Edit the video to join scenes, matching the storyboard

Year 5

Programme A- Selection in Physical Computing

Vocabulary	Topic specific vocabulary	Microcontroller, components, connection, infinite loop, output component, motor, repetition, count-controlled loop, crumble controller, switch, LED, sparkle, crocodile clips, connect, battery box, program, condition, input, output, selection, condition, action, repetition, debug
Key concepts	Selection in Physical Computing	
<u>Key Outcomes</u>		• Construct a wiring diagram to show how components will be connected • Build a model that supports the hardware that will be used in the task • Write an algorithm that uses selection to control a sequence using output devices • Combine appropriate blocks to implement their algorithm • Suggest a strategy to fix the code when it is not working • Test their code with their model

Year 5

Data and Information- Flat- file Databases

Vocabulary	Topic specific vocabulary	Database, data, information, record, field, sort, order, group, search, value, search, criteria, graph, chart, axis, compare, filter, presentation
Key concepts	Flat- file Databases	
<u>Key Outcomes</u>		• To explain that a computer program can be used to organise data • To explain that tools can be used to select data to answer questions • To outline how ordering data allows us to answer some questions • To outline how operands can be used to filter data • To outline how 'AND' and 'OR' can be used to refine data selection • To explain that computer programs can be used to compare data visually • To explain that we present information to communicate a message

Year 5

Creating Media- Introduction to Vector Graphics

Vocabulary	Topic specific vocabulary	vector, drawing tools, object, toolbar, vector drawing, move, resize, colour, rotate, duplicate/copy, zoom, select, rotate, object, align, resize, modify, layers, order, copy, paste, group, ungroup, duplicate, reuse, reflection
Key concepts	Introduction to Vector Graphics	
<u>Key Outcomes</u>		• Add and remove objects to create a drawing of a chosen artefact • Use copy and paste to maintain consistency within the drawing • Manipulate an object's size, colour, and proportion to represent a chosen artefact • Purposefully position and rotate objects • Move objects to different layers to create a specific aspect of a drawing • Manipulate multiple objects concurrently • Group objects to make them easier to work with

Year 5

Programming B- Selection in Quizzes

Vocabulary	Topic specific vocabulary	selection, condition, true, false, count-controlled loop, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input, condition, implement, test, run, setup
Key concepts	Selection in Quizzes	
<u>Key Outcomes</u>		• To explain that a condition can only be true or false • To relate that a count-controlled loop contains a condition • To compare a count controlled loop with a condition-controlled loop • To explain that a condition-controlled loop will stop when a condition is met • To explain that when a condition is met a loop will complete a cycle before it stops • To explain that selection can be used to branch the flow of a program • To explain that a loop can be used to repeatedly check whether a condition has been met • To explain the importance of instruction order in 'if... then... else...' statements

Year 6

Computing Systems and Networks- Communication and Collaboration

Vocabulary	Topic specific vocabulary	communication, protocol, data, address, Internet Protocol (IP) address, Domain Name Server (DNS), packet, header, data payload, chat, explore, slide deck, reuse, remix, collaboration, internet, public, private, one-way, two-way, one-to-one, one-to-many
Key concepts	Communication and Collaboration	
<u>Key Outcomes</u>		• To recognise that data is transferred across networks using agreed protocols (methods) • To recognise that connections between computers allow access to shared stored files • To explain that data is transferred in packets • To recognise computers connected to the internet allow people in different places to work together • To discuss the opportunities that technology offers for communication and collaboration • To explain which types of media can be shared through the internet • To explain that communicating and collaboration using the internet can be public or private

Year 6

Creating Media- Webpage Creation

Vocabulary	Topic specific vocabulary	website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, purpose, copyright, fair use, home page, preview, evaluate, device, Microsoft Sway, breadcrumb trail, navigation, hyperlink, subpage, evaluate, implication, external link, embed
Key concepts	Webpage Creation	
<u>Key Outcomes</u>		• Layout contains multiple sections • Layout relates to a relevant purpose/audience • Use copyright-free images • Design is clear and organised • Add subpages • Add internal and external hyperlinks • Suggest some improvements • Design considers how the page will look on different devices

Year 6

Programming A- Variables in Games

Vocabulary	Topic specific vocabulary	variable, change, name, value, set, design, event, algorithm, code, task, design, artwork, program, project, test, debug, improve, evaluate, share
Key concepts	Variables in Games	
<u>Key Outcomes</u>		• To define and identify a 'variable' as something that is changeable in a program • To define a program variable as a placeholder in memory for a single value with a name • To recognise that the value of a variable can be used by a program and updated • To identify that variables can hold numbers (integers) or letters (strings) • To define the way that a variable is changed • To recognise that a variable can be set as a constant (fixed value)

		• To explain the importance of setting up a variable at the start of a program (initialisation) • To explain that there is only one value for a variable at any one time • To explain that if you change the value of a variable, you cannot access the previous value (cannot undo) • To explain that if you read a variable, the value remains • To explain that the name of a variable is meaningless to the computer • To explain that the name of a variable needs to be unique
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Year 6

Data and Information- Introduction to Spreadsheets

Vocabulary	Topic specific vocabulary	data, collecting, table, structure, spreadsheet, cell, cell reference, data item, format, formula, calculation, input, output, calculate, operation, range, duplicate, sigma, propose, question, data set, organised, chart, evaluate, results, comparison, software, tools
Key concepts	Introduction to Spreadsheets	
<u>Key Outcomes</u>		• To identify questions that can be answered using spreadsheet data • To explain what an item of data is in a spreadsheet • To outline that there are different software tools to work with data • To explain how the data type determines how a spreadsheet can process the data • To explain that formulas can be used to produce calculated data • To recognise cells can be linked • To explain why data should be organised in a spreadsheet • To recognise that a cell's value automatically updates when the value in a linked cell is changed • To evaluate results in comparison to the question asked

Year 6

Creating Media- 3D Modelling

Vocabulary	Topic specific vocabulary	2D, 3D, shapes, select, move, perspective, view, handles, resize, lift, lower, recolour, rotate, duplicate, group, cylinder, placeholder, hollow, 3D shapes, choose, combine construct, evaluate, modify
Key concepts	3D Modelling	
<u>Key Outcomes</u>		• Explain shapes that are representative of a real-world object to make a model • Recognise that changing perspective does not change the position of objects • Position 3D objects to create a chosen artefact • Accurately resize objects • Create holes in objects • Use and combine variations of one 3D shape

Year 6

Programming B- Sensing Movement

Vocabulary	Topic specific vocabulary	Micro:bit, MakeCode, input, process, output, flashing, USB, trace, selection, condition, if then else, variable, random, sensing, accelerometer, value, compass, direction, navigation, design, task, algorithm, step counter, plan, create, code, test, debug
Key concepts	Sensing Movement	
<u>Key Outcomes</u>		• Describe what will be shown if someone has walked more than a set number of steps • Identify what will be displayed and how the user will see it • Choose an appropriate name for a variable • Choose when and where to set a variable • Create an algorithm to describe how the program will process each input • Combine appropriate blocks to implement their algorithm • Run their code on the emulator to test their program • Propose a strategy to fix the code if it is not working

Learning Graphs for each topic (Teach Computing)

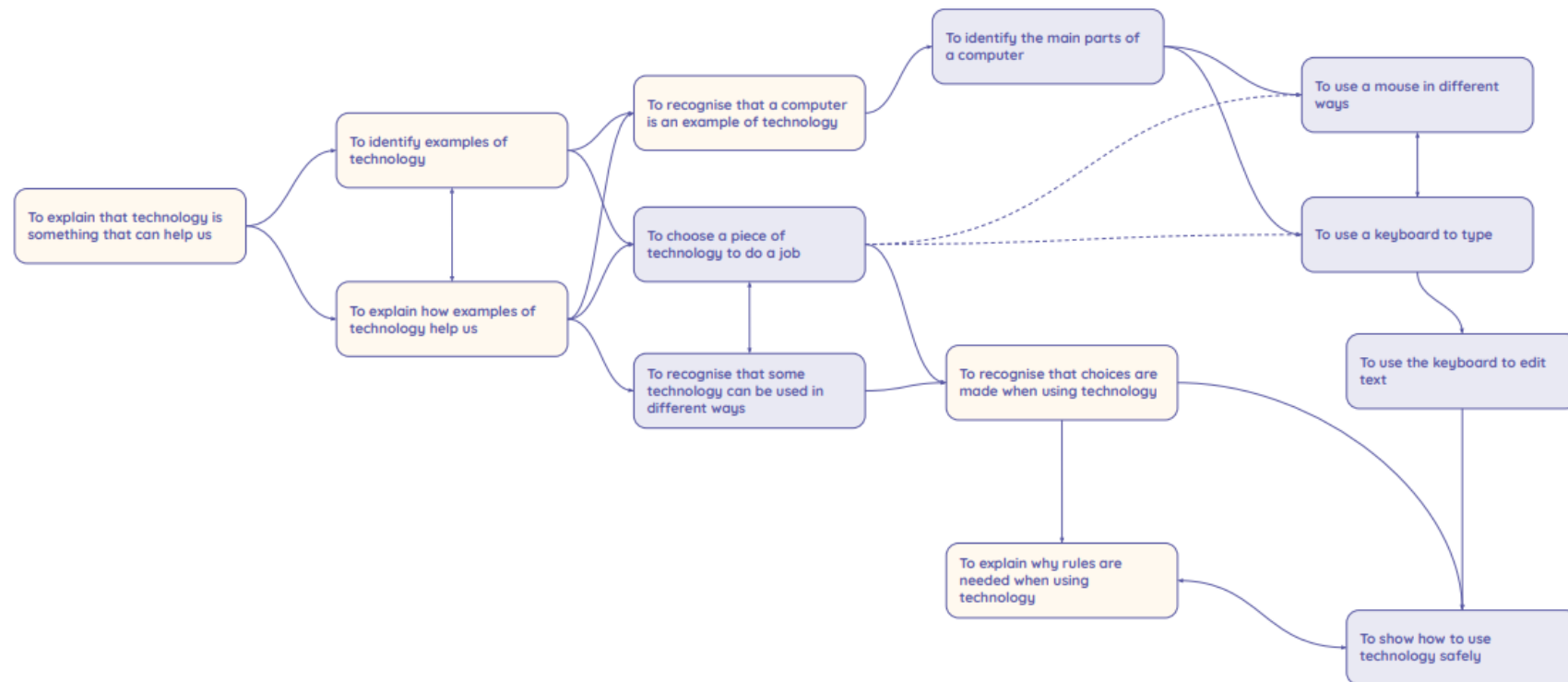
Pink= Concept (Substantive) Blue= Skill (Disciplinary)

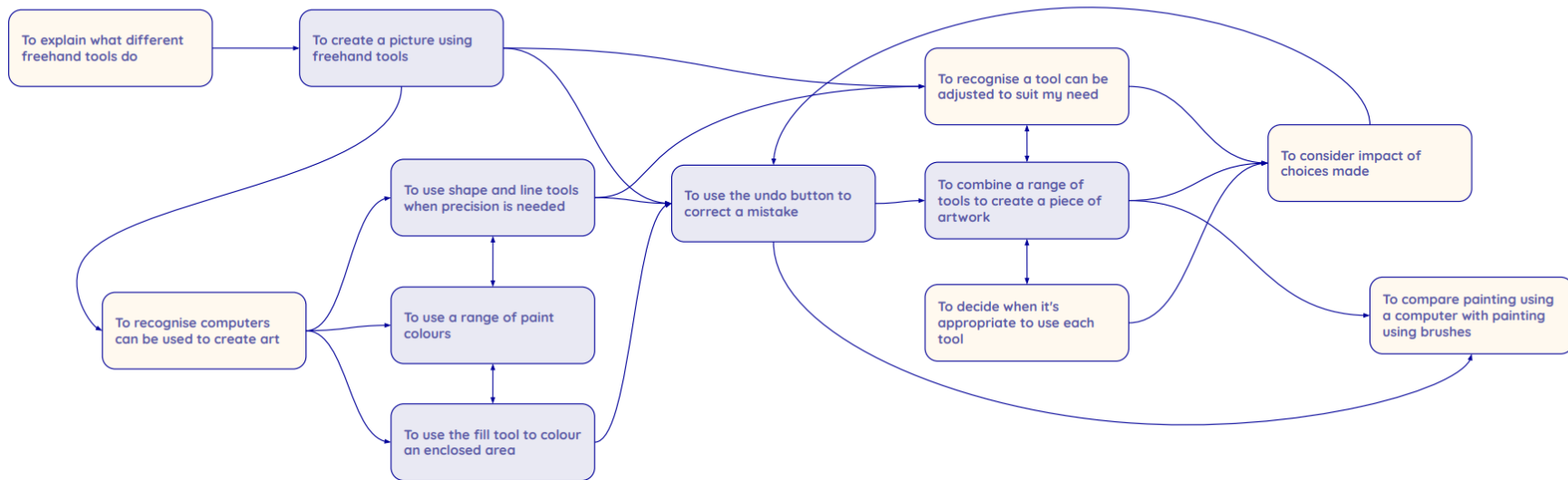
Year 1

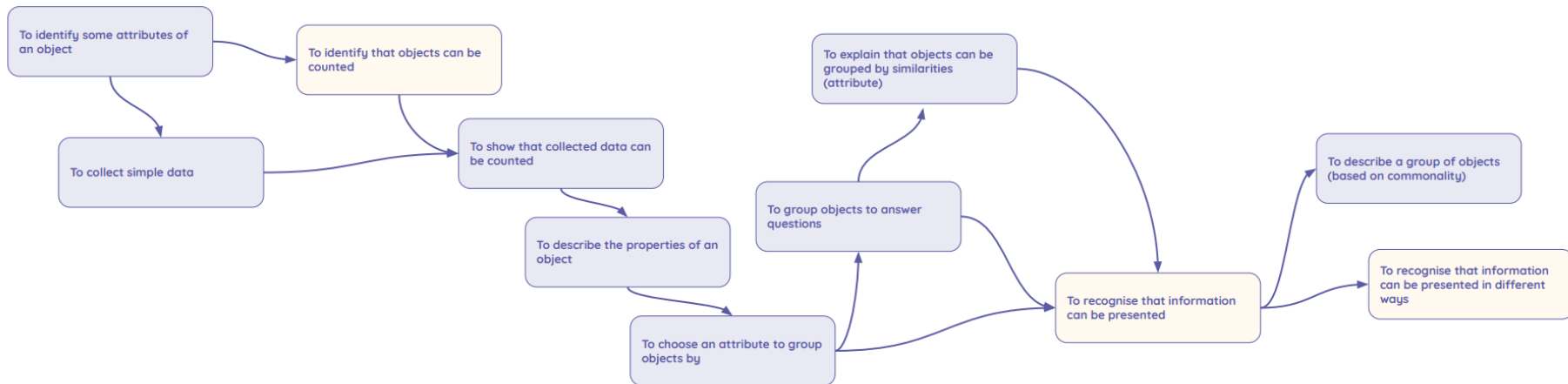
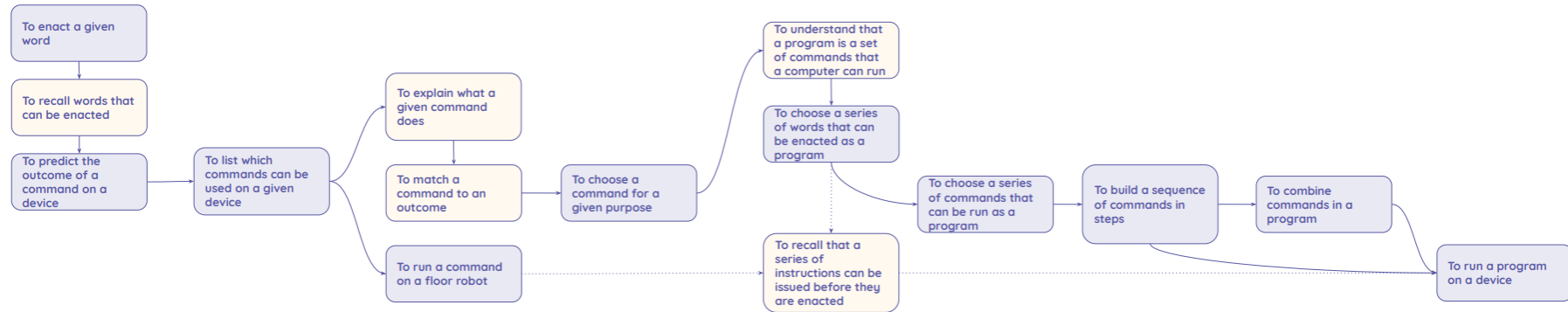


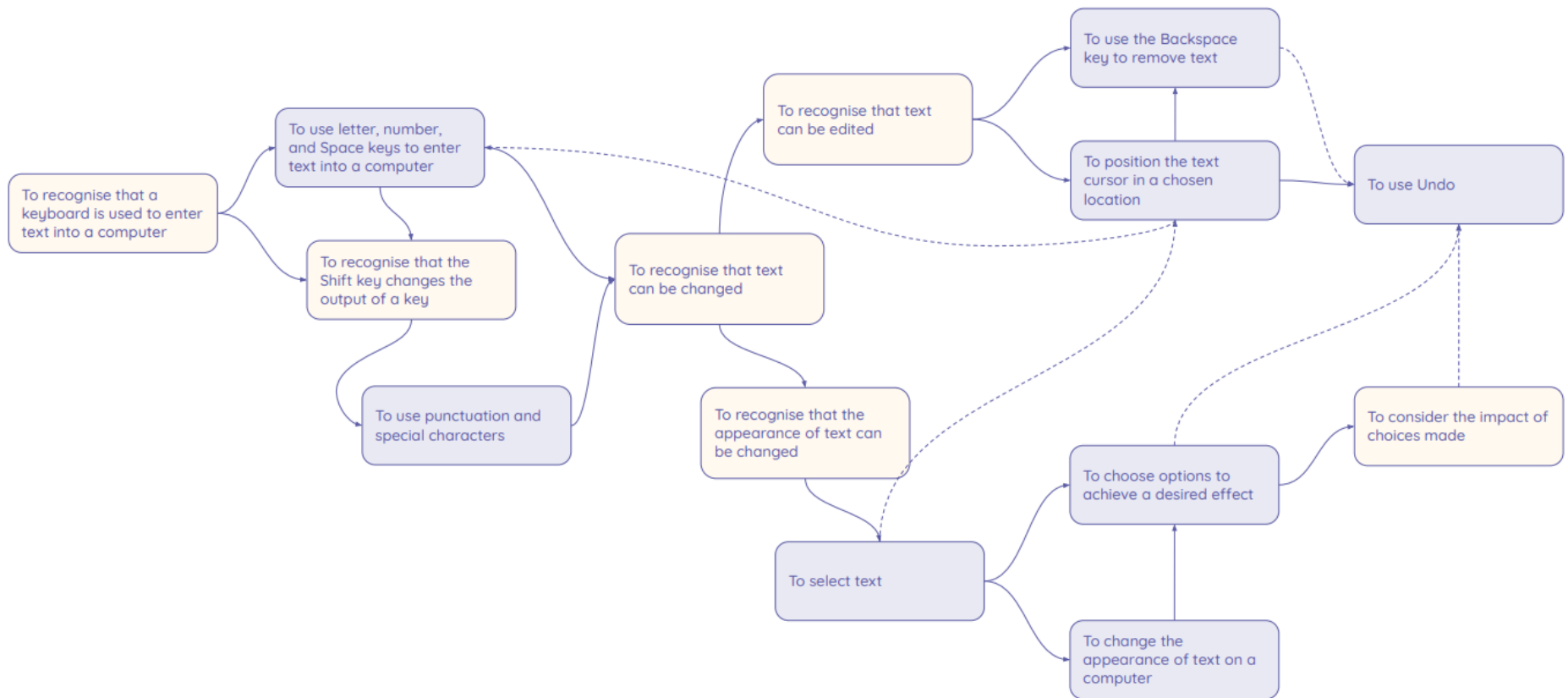
Raspberry Pi

Learning graph
Year 1 – Technology around us



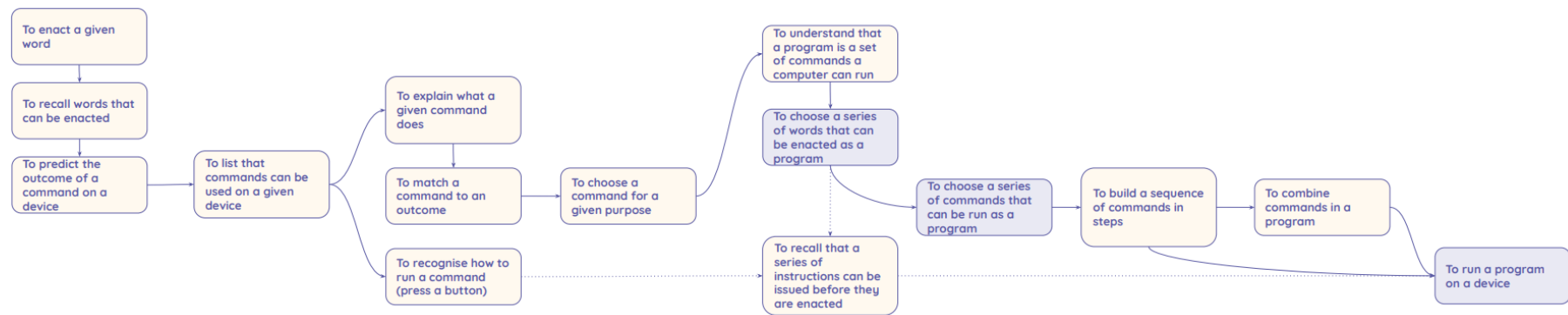




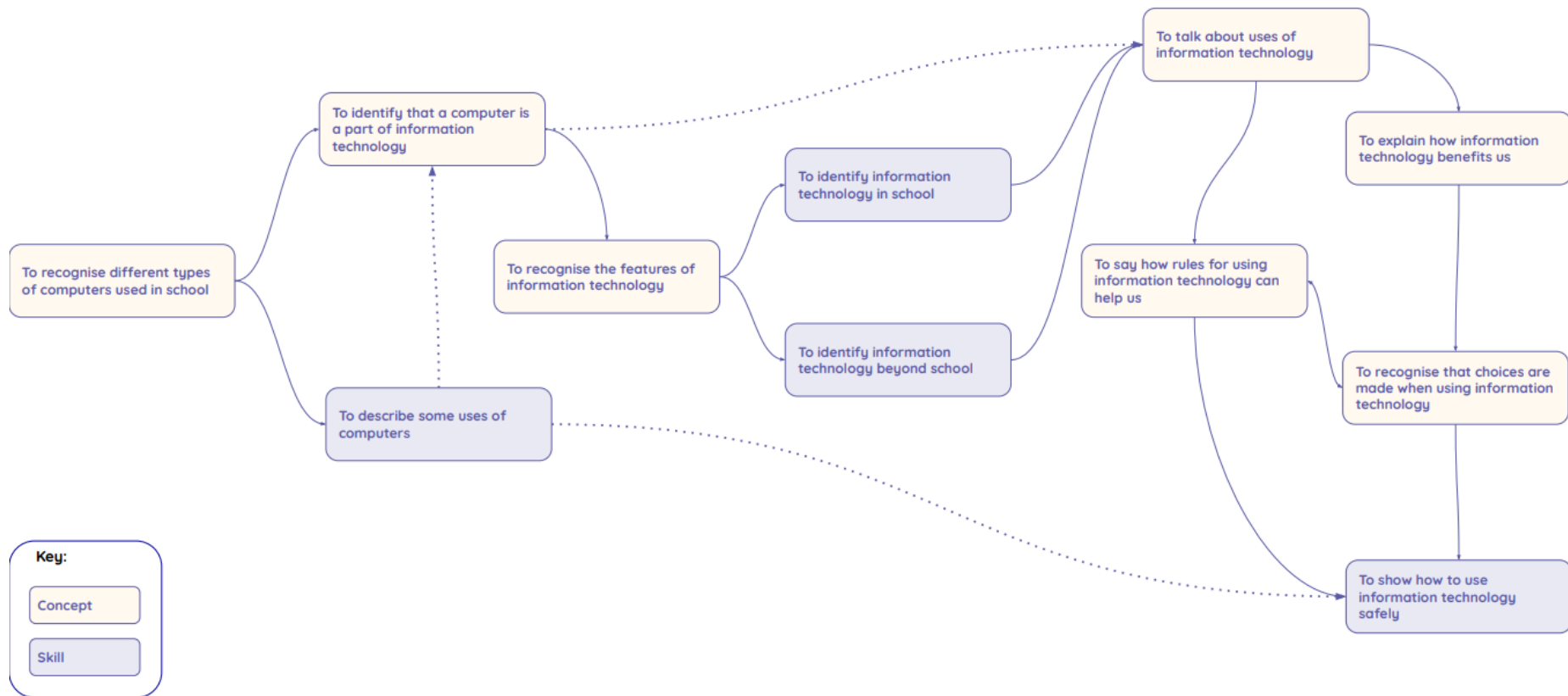


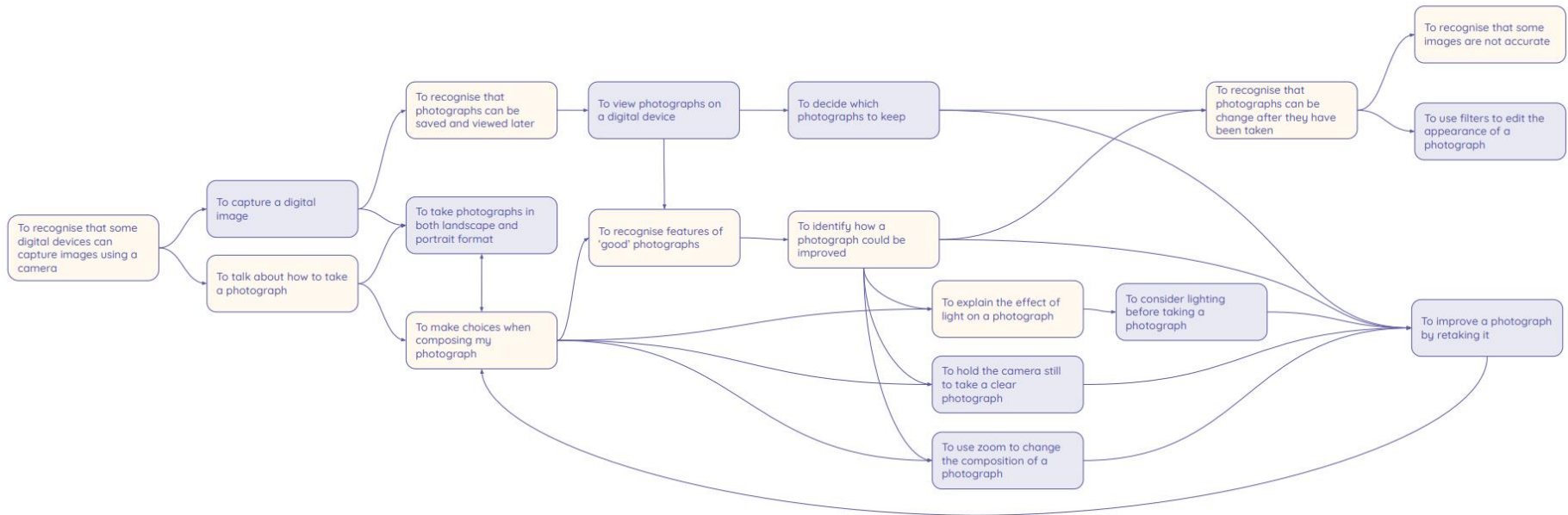
Pre-sequence – single command

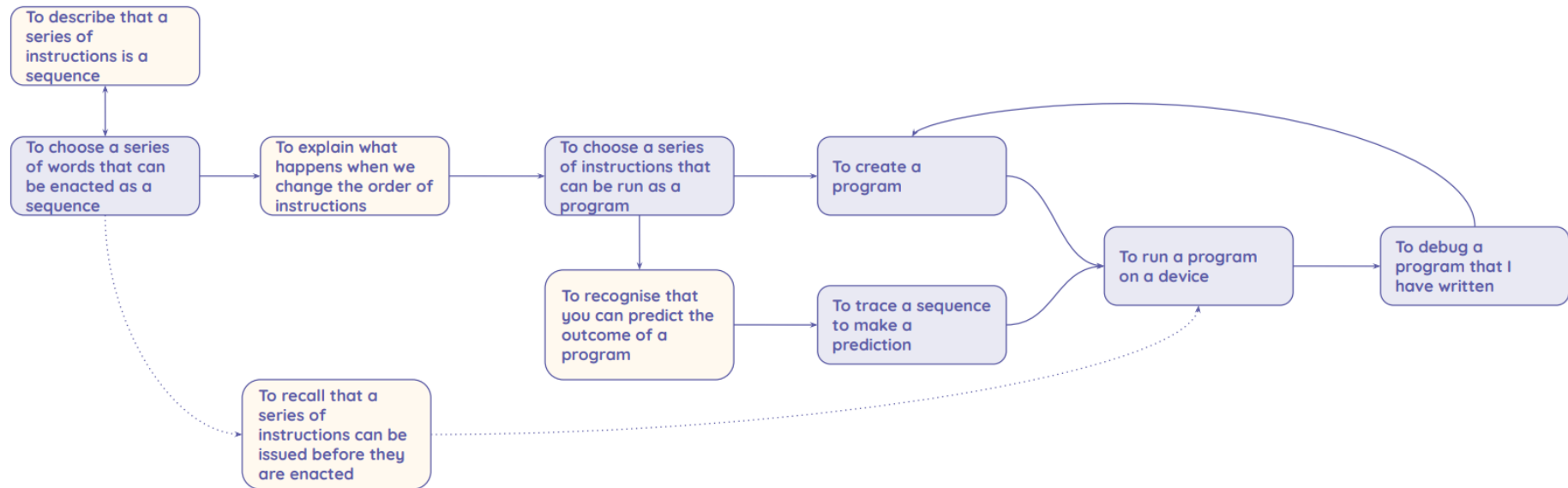
Sequence

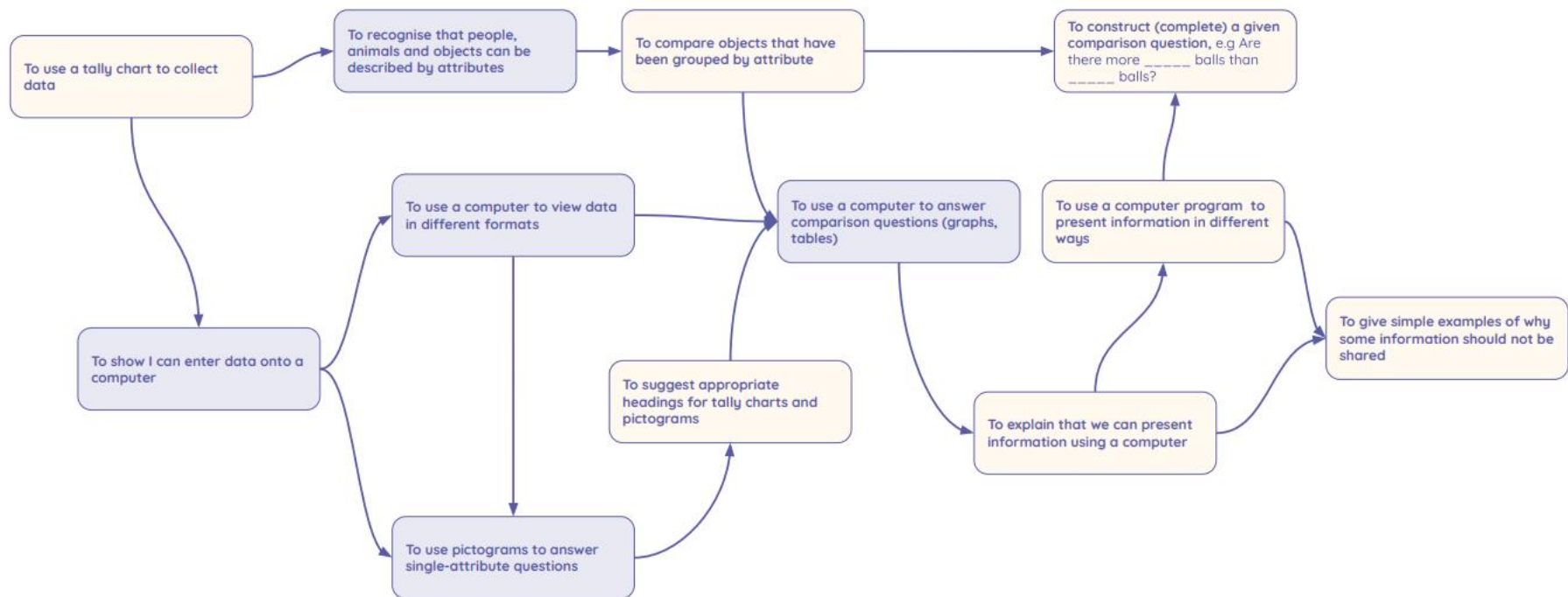


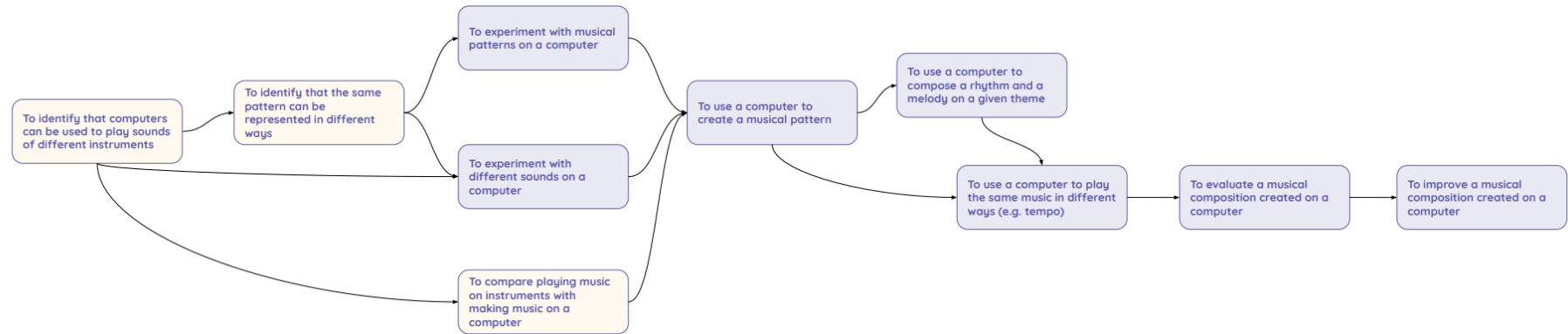
Year 2

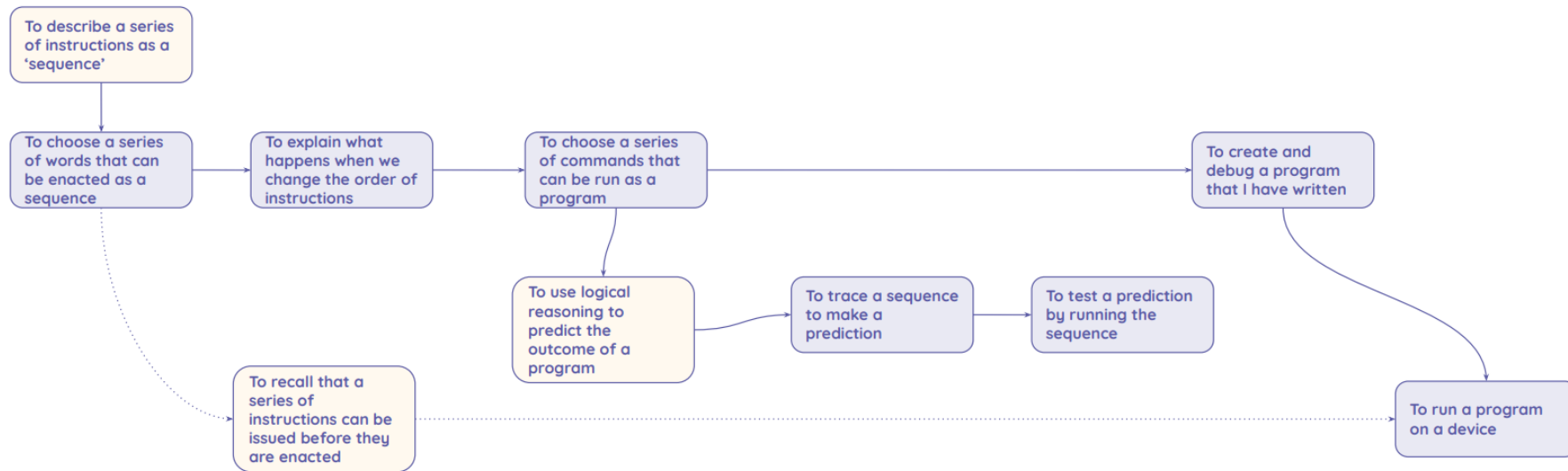




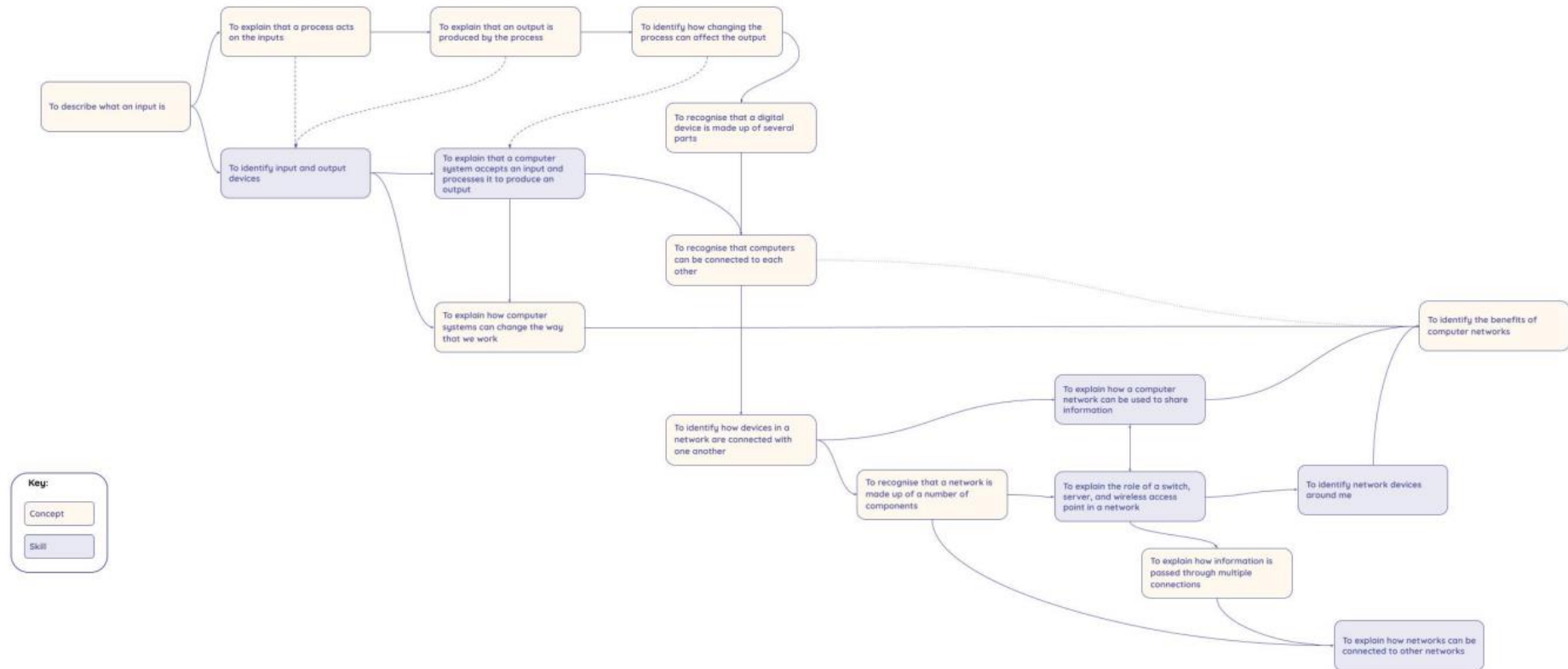


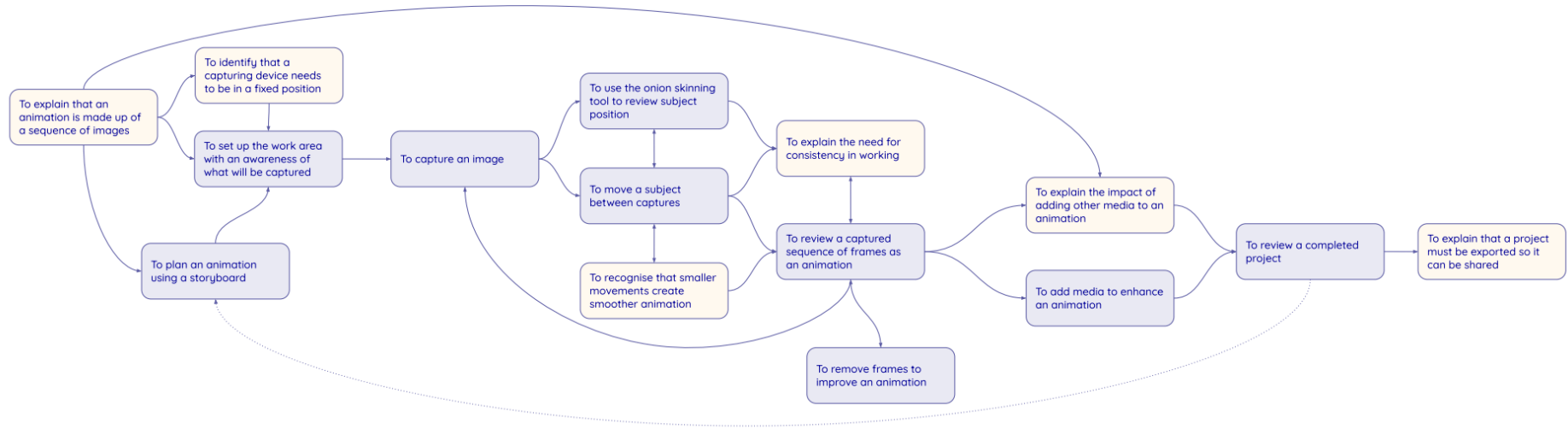


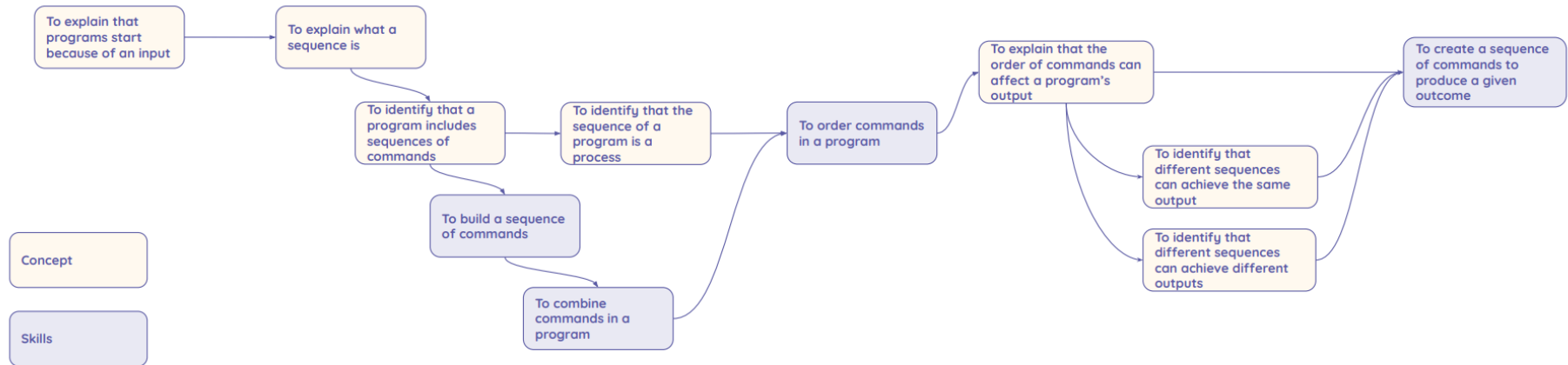


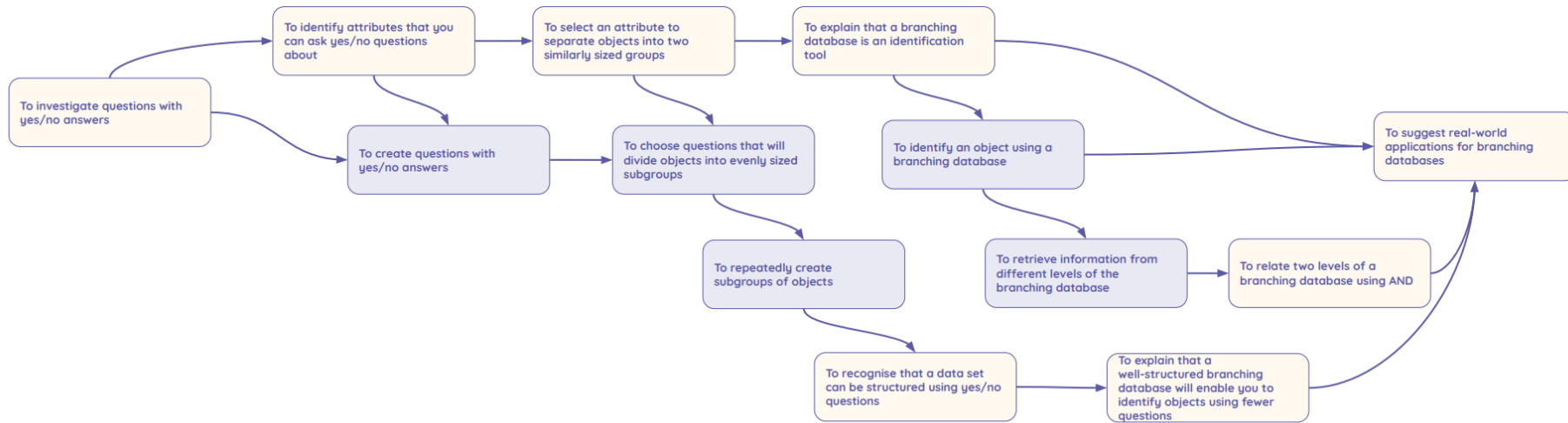


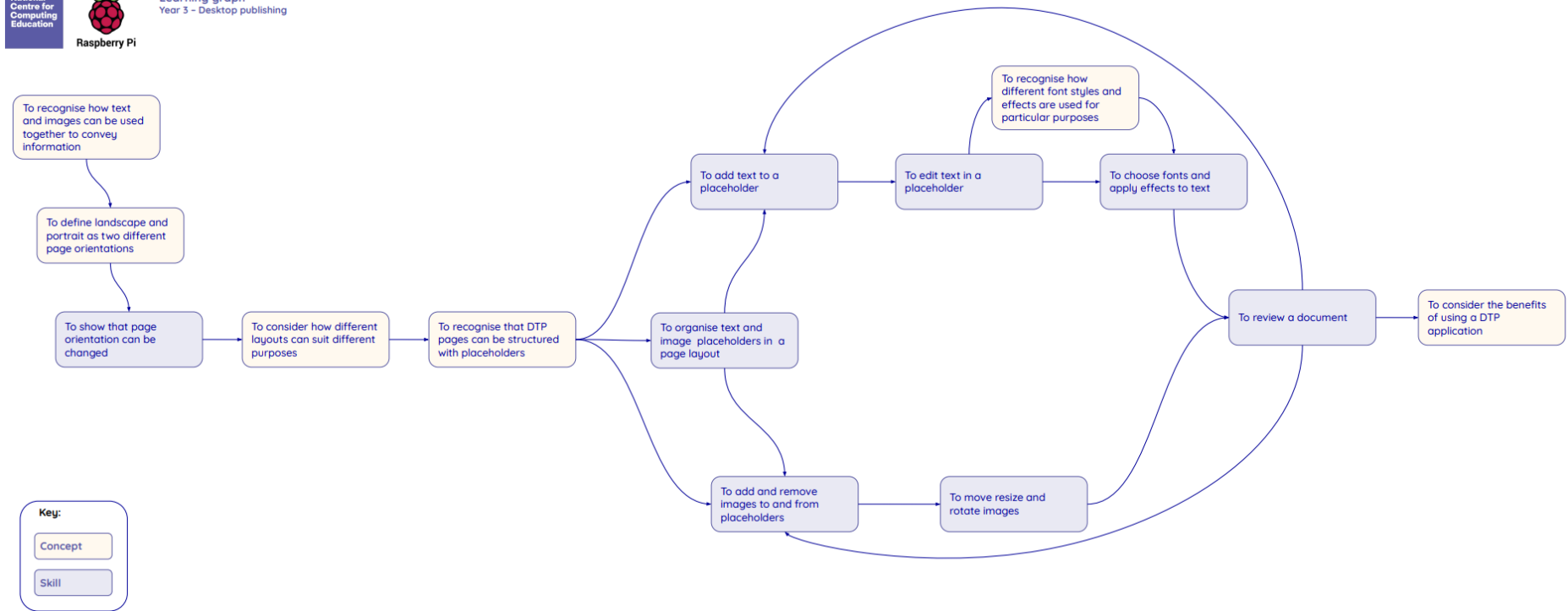
Year 3

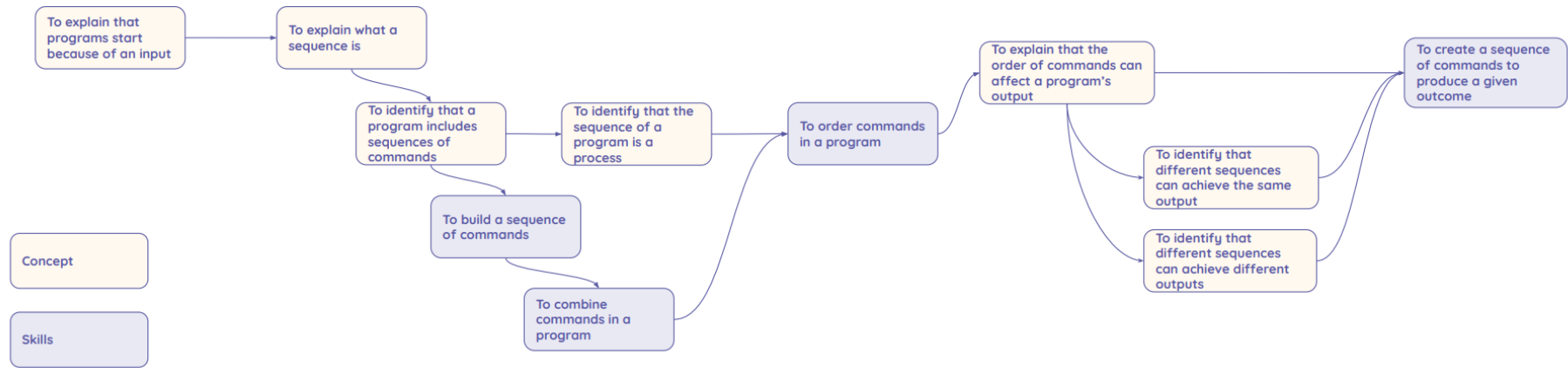




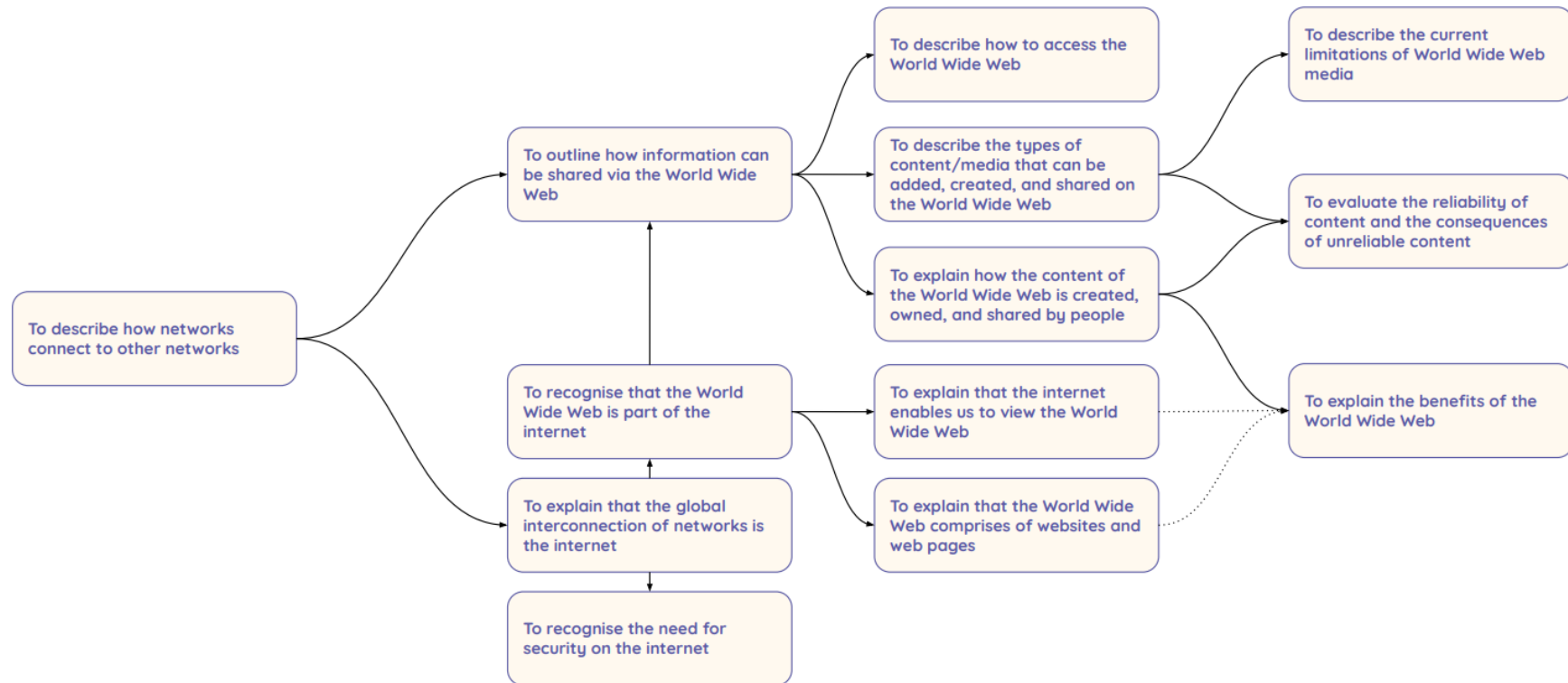


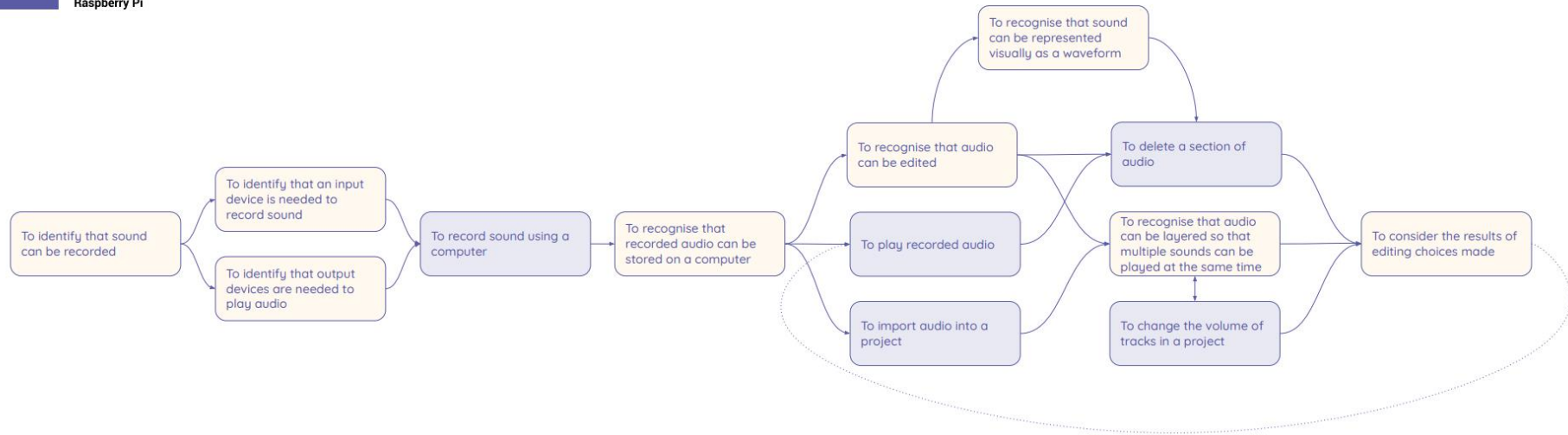


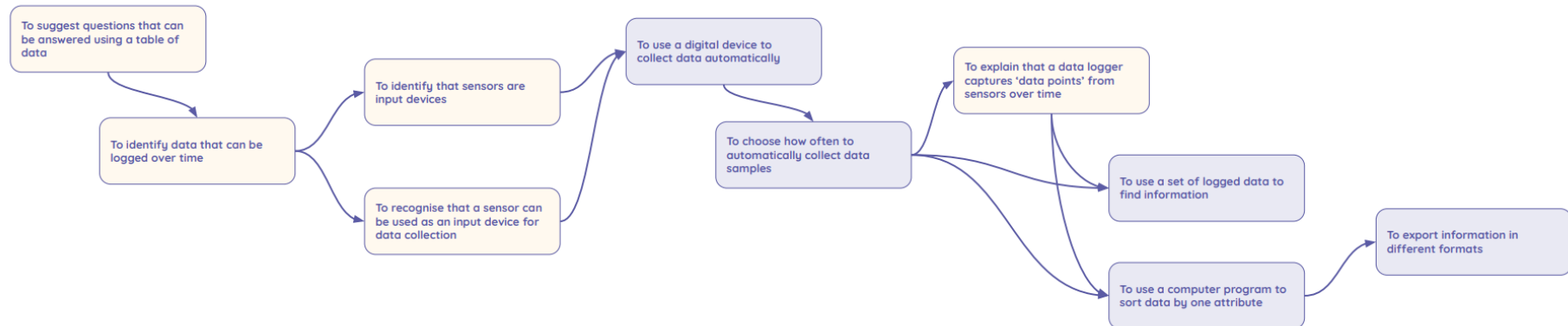
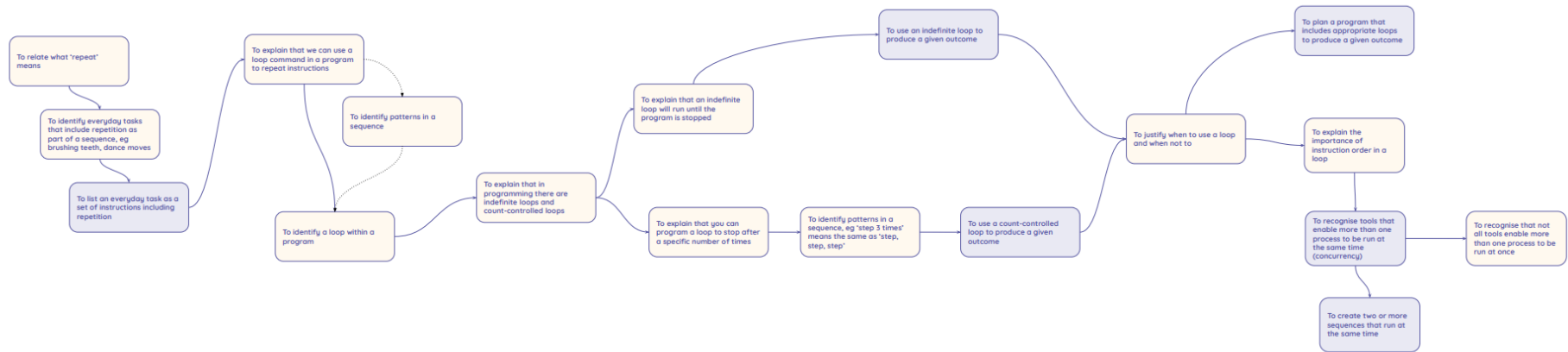


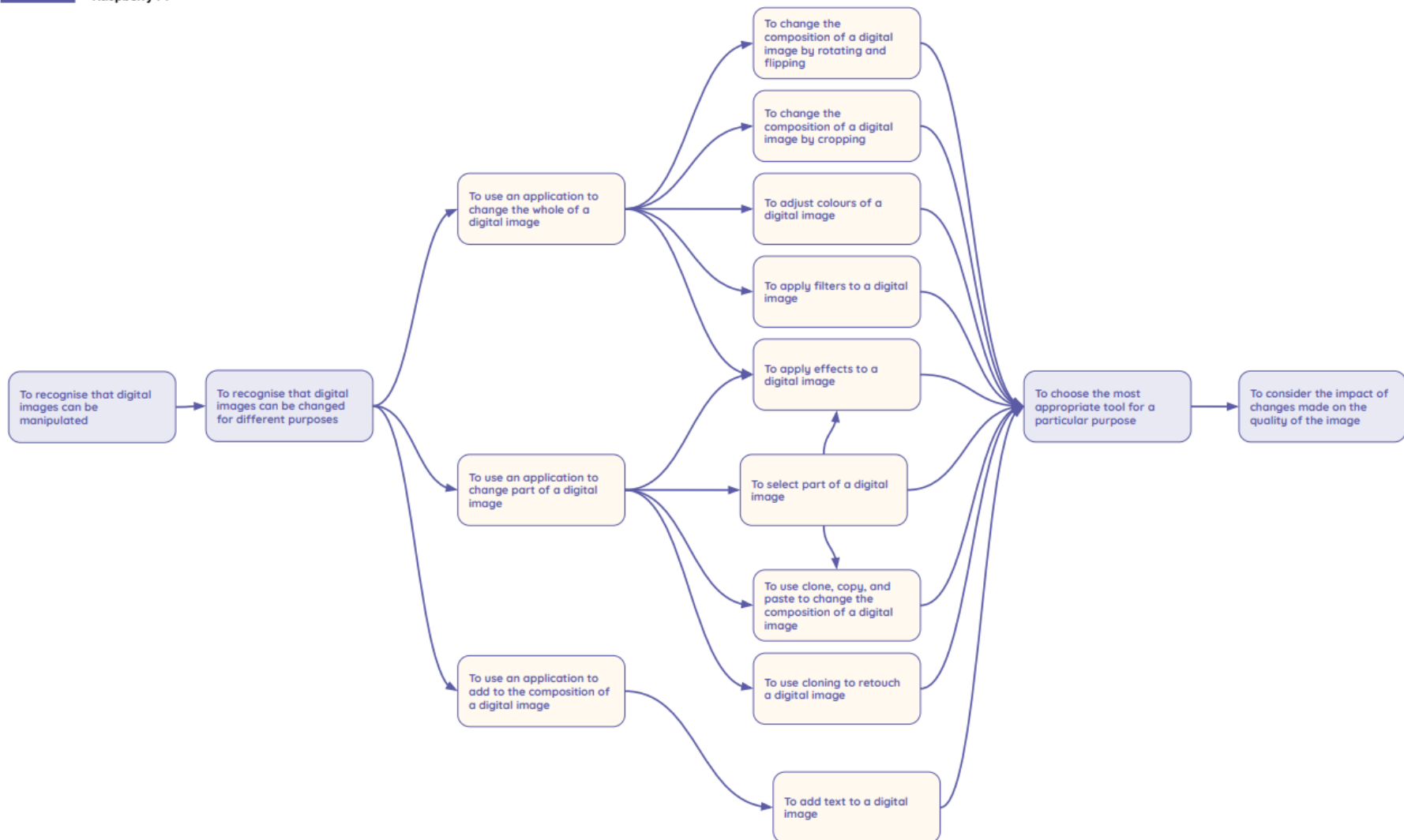


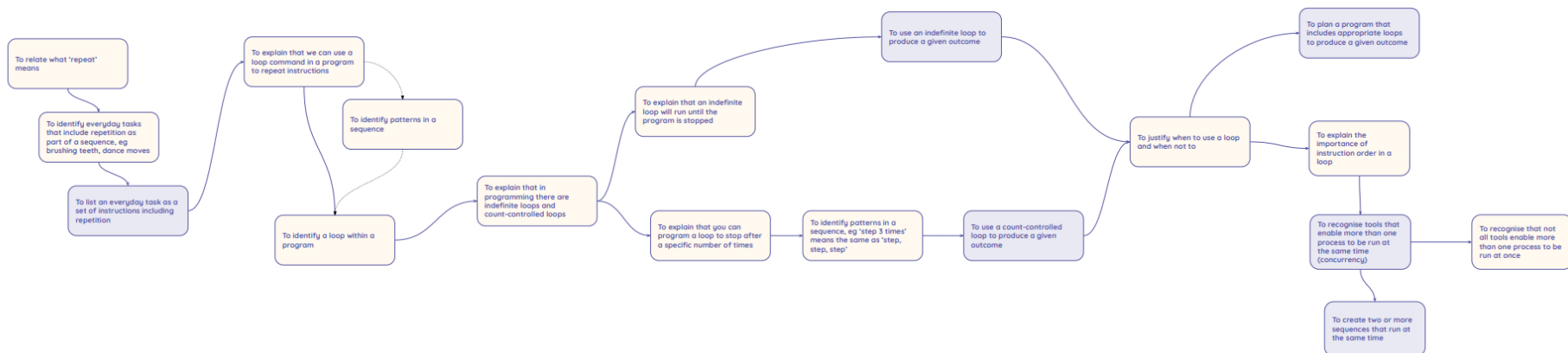
Year 4







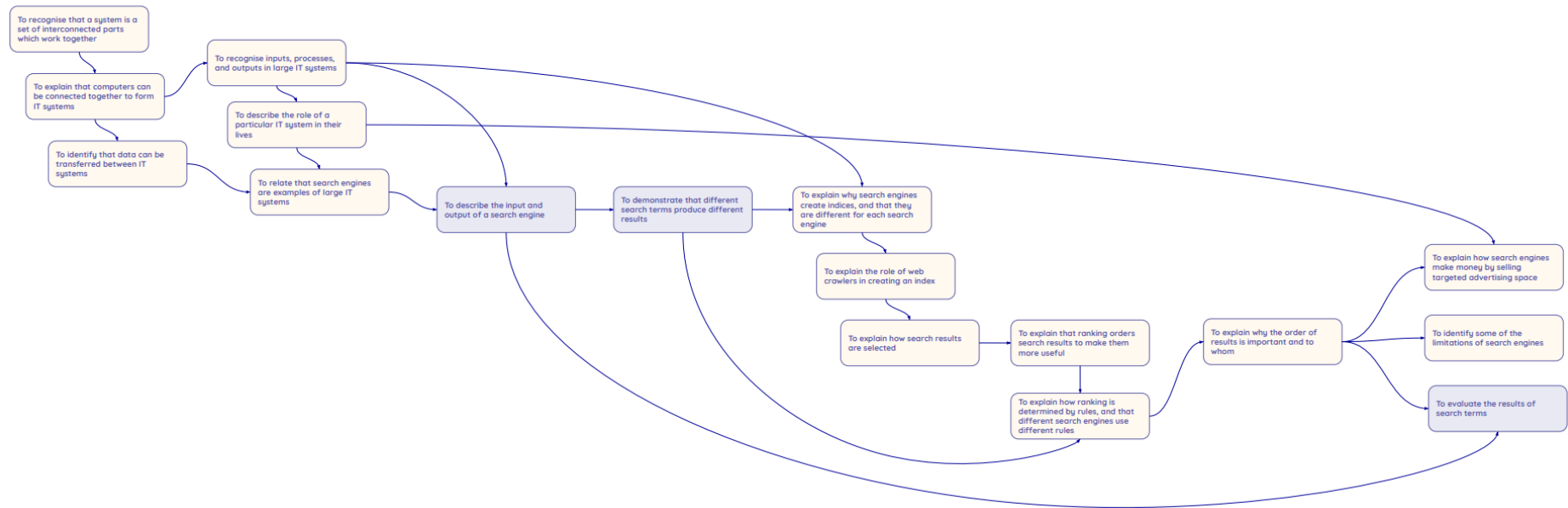


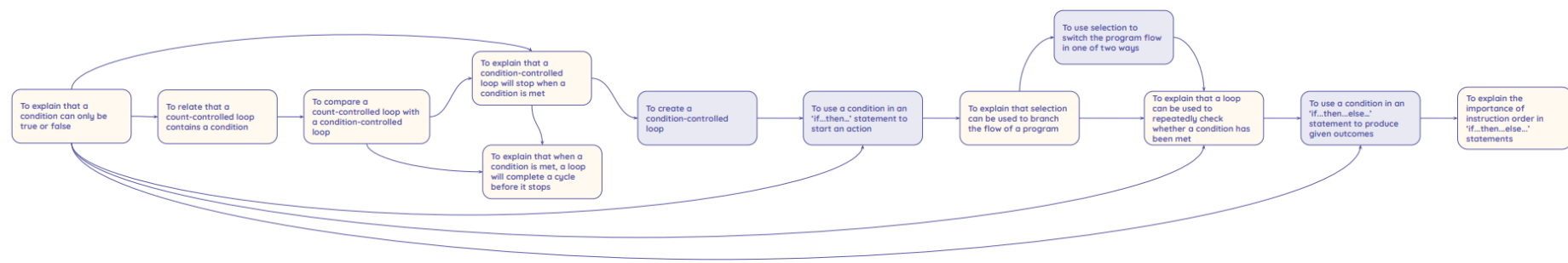
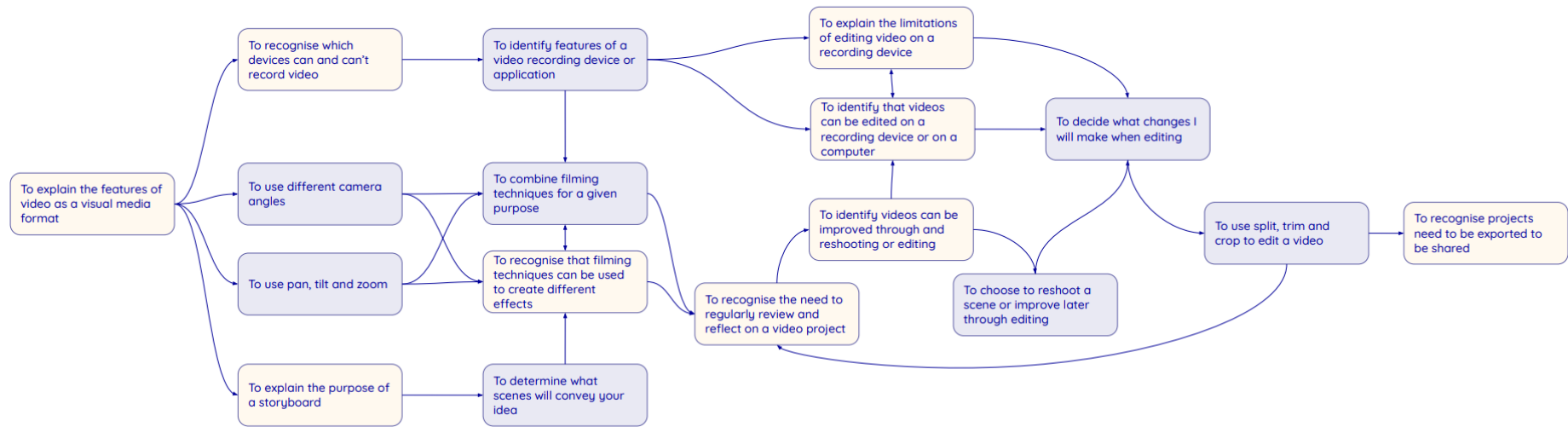


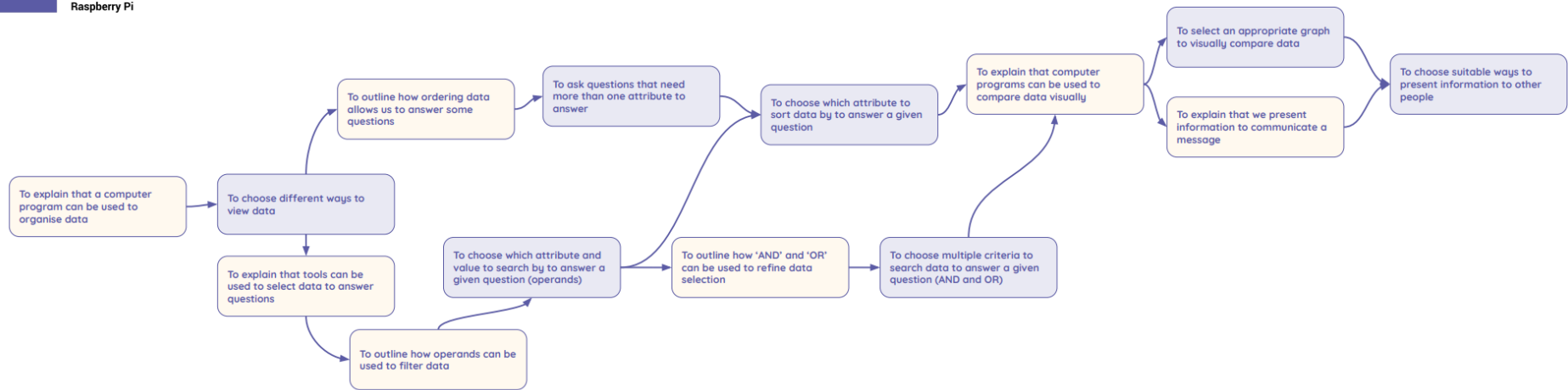
Year 5

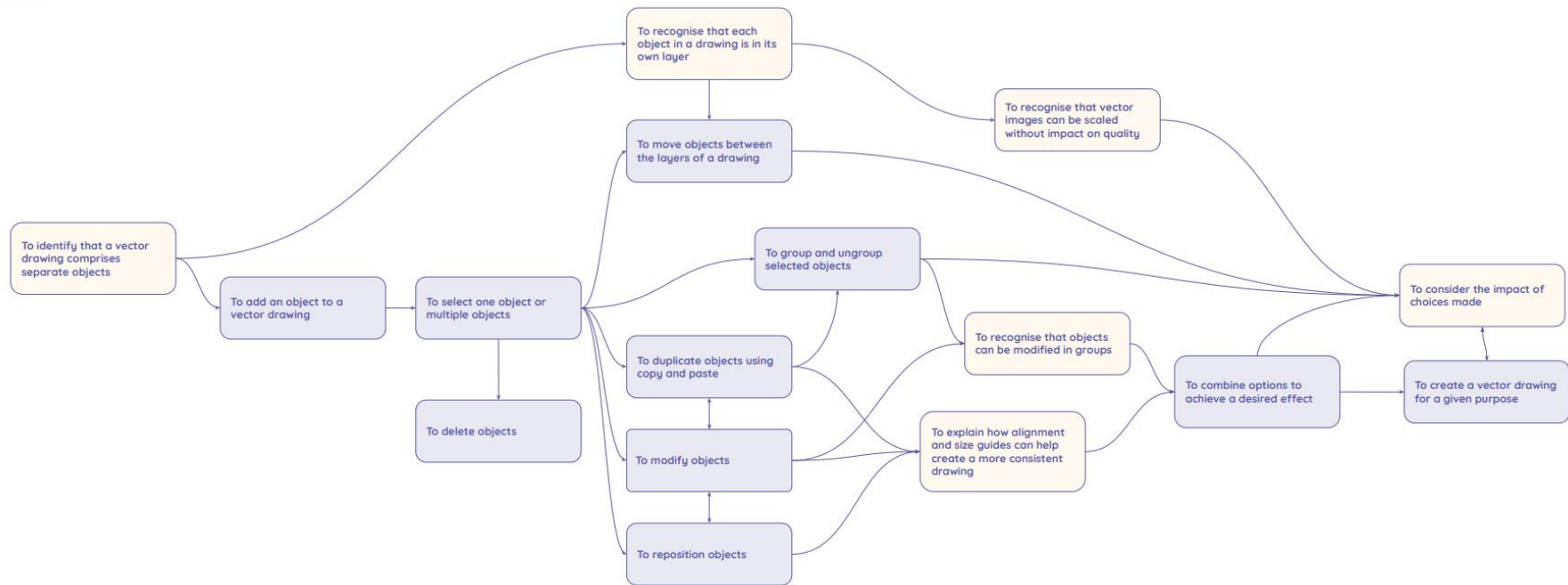


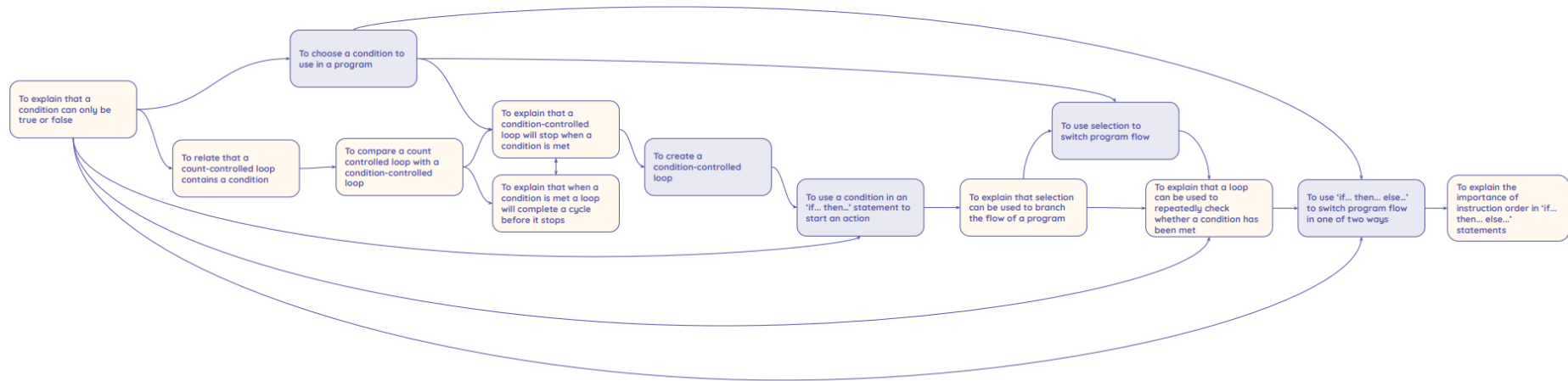
Learning graph
Year 5 - Systems and searching











Year 6



Learning graph
Year 6 - Communication and collaboration

