



## Vocabulary progression

### Computing

#### Making Concepts Easier to Understand

Experts and beginners think about things in different ways. Beginners like to use simple words and examples they can see. They find it easier to understand ideas when they are told in a straightforward way. Experts, on the other hand, often use more complex and precise language to explain the same ideas.

To help students learn better, teachers can simplify the language they use. This means taking complicated words and using easier ones. For example, a teacher might use the word 'repeat' instead of 'iteration' or 'decision' instead of 'selection'. This helps beginners grasp the main ideas without getting lost in difficult words.

**Once students understand the simpler terms, it's important to go back to the original, more accurate terms. This way, they can connect the easy words with the more complex ones.**

Another way teachers help students understand ideas is by using real-life examples or activities. This strategy helps students see how a concept works in a clear way. However, if students only focus on these specific examples, they might struggle to see the bigger picture. It's important for them to step back and think about the idea in a more general way.

In the learning process, it's also important for students to look at technical words like 'algorithm'. They should explore when the simpler examples work well and when they do not. This helps their understanding grow from simple ideas to more complex ones, allowing them to see the full picture.

NOTE: Words which are identified as especially important for pupils to understand to develop an understanding of the substantive concepts are highlighted in pink.

# Year 1

| Disciplinary knowledge   | Computing Knowledge   |   |
|--|---|---|
| Computational Thinking   | Autumn Term 1 Online Safety   | Autumn Term 2 Digital Art   |
| Algorithm<br>Code<br>Code snippet<br>Command<br>Debugging<br>Object<br>Program<br>Run  | Copyrights<br>Filename<br>Filters<br>SMART rules<br>Online<br>Offline<br>Email<br>Personal information  | Tools<br>Freehand tools<br>Shape tool<br>Brushes<br>Primary Colours<br>Line, shape, fill<br>Undo<br>Erase |
| Information Technology and Digital literacy  | Spring Term 1 On the Move Discovery   | Spring Term 2 Data and Information  |
| Attribute<br>Computer<br>Data<br>Information<br>Information Technology<br>Property<br>Technology<br>Device<br>Digital Content<br>Create<br>Online Safety<br>Personal Information<br>Respectfully | Run<br>Execute<br>Program<br>Instructions<br>Action<br>Objects  | Data<br>Label objects<br>Properties<br>Grouping<br>Data set<br>Dragging and dropping<br>Pictogram         |
|  | Summer Term 1 Creating Media  | Summer Team 2 Simple Inputs Discovery   |
|  | Media<br>Text<br>Word Processor<br>Shift/Caps lock/Enter/Spacebar/Backspace<br>Bold/Italic/Underline<br>Clicking and Dragging<br>Font<br>Undo | Code<br>Object<br>Action<br>Click<br>Start<br>Event<br>Click Event<br>Action<br>Object                    |

# Year 2

| Disciplinary knowledge   | Computing Knowledge   |   |
|--|---|---|
| Computational Thinking   | Autumn Term 1   | Autumn Term 2   |
| Algorithm<br>Code<br>Code snippet<br>Command<br>Debugging<br>Object<br>Program<br>Run                              | Digital Footprint<br>Internet<br>Online<br>Personal Information<br>Private<br>Search<br>Website | Digital photography<br>Capture<br>Landscape/portrait layout<br>Composition<br>Blur<br>Effects (light/colour)<br>Tools<br>Adjust |
| Information Technology and Digital literacy  | Spring Term 1   | Spring Term 2   |
| Attribute<br>Computer<br>Data<br>Information<br>Information Technology<br>Property<br>Technology<br>Digital Device | Run<br>Execute<br>Program<br>Instruction<br>Action<br>Object/s                                  | Pictogram<br>Data<br>Attribute<br>Block Diagrams<br>Tally Charts<br>Totals<br>More than/Less than<br>Most/Least<br>Conclusion   |
|  | Summer Term 1   | Summer Term 2   |
|  | Digital Music<br>Pattern<br>Rhythm<br>Pitch<br>Sequence<br>Notes<br>Review<br>Refine            | Object<br>Actions<br>Button<br>Input<br>Run<br>Execute<br>Control<br>Click<br>Algorithm   |

# Year 3

| Disciplinary knowledge   | Computing Knowledge  |   |
|--|--|---|
| Computational Thinking   | Autumn Term 1  | Autumn Term 2   |
| Algorithm<br>Code<br>Code snippet<br>Command<br>Tinkering<br>Debugging<br>Object<br>Program<br>Run<br>Abstraction<br>Decomposition<br>Evaluate<br>Collaborate                  | Digital Footprint<br>Internet<br>Online<br>Personal Information<br>Private<br>Search<br>Website<br>Cyberbullying<br>Targeted Advert<br>Promote products<br>Email | Animation<br>Stop-frame<br>Story-based amination<br>Media (music/text)<br>Sequence<br>Flip book<br>Storyboard<br>Onion Skinning<br>Evaluate<br>Feedback |
| Information Technology and Digital literacy  | Spring Term 1  | Spring Term 2   |
| Attribute<br>Computer<br>Data<br>Information<br>Information Technology<br>Property<br>Technology<br>Digital Device<br>Online Communication<br>Social Media<br>Privacy settings | Sequence<br>Run<br>Before/After<br>Execute<br>Algorithm<br>Action<br>Debug   | Data<br>Branching Database<br>Attributes<br>Yes/No questions<br>Tree structure<br>Test/Compare<br>Unique<br>Layout<br>Identification Tool               |
|  | Summer Term 1  | Summer Term 2   |
|  | Desktop Publishing<br>Template<br>Page Orientation<br>Placeholders<br>Editing<br>Locations   | Walls<br>Condition<br>Conditional Statement<br>Background<br>Hit Event<br>Direction<br>Input<br>Collide<br>Object                                       |

# Year 4

| Disciplinary knowledge  | Computing Knowledge  |  |
|---|--|--|
| Computational Thinking  | Autumn Term 1  | Autumn Term 2  |
| Algorithm<br>Code<br>Code snippet<br>Command<br>Tinkering<br>Debugging<br>Object<br>Program<br>Run<br>Abstraction<br>Decomposition<br>Evaluate<br>Collaborate   | Digital Footprint – Online profile<br>Trusted Search Engine<br>Website Registration<br>Cyberbullying<br>Targeted Advert<br>Promote products<br>Plagiarism<br>Citation<br>Promote | Audio<br>Audio Production<br>Microphone<br>Output device (Speaker/headphones)<br>Copywrite<br>Duplication<br>Audacity<br>Podcast<br>Tracks |
| Information Technology and Digital literacy   | Spring Term 1  | Spring Term 2  |
| Attribute<br>Data<br>Information Technology<br>Property<br>Technology<br>Digital Device<br>Online Communication<br>Social Media<br>Privacy settings<br>Search Engine Results Page (SERP)<br>Plagiarism<br>Digital Citizen | Variable<br>Click<br>Alert<br>Conditional Event<br>Score Time<br>Hit Event<br>Negative<br>Collide<br>Total/Cost/Set<br>Button<br>Change  | Data Logging<br>Sensors<br>Monitor<br>Captured Data<br>Data Points<br>Data Sets<br>Logging Intervals<br>Analyse Data<br>Sort               |
|   | Summer Term 1  | Summer Term 2  |
|   | Photo Editing<br>Editing<br>Resaved/reused<br>Composition<br>Rotating<br>Crop<br>Colour effects<br>Cloning<br>Combining images   | Repetition<br>Loop<br>Action<br>Efficient<br>Nesting<br>Variable<br>Condition<br>Statement<br>Direction                                    |

# Year 5

| Disciplinary knowledge  |   | Computing Knowledge   |  |   |
|---|---|---|--|---|
| Computational Thinking  |   | Autumn Term 1   |  |   |
| Algorithm<br>Code<br>Code snippet<br>Command<br>Tinkering<br>Debugging<br>Object<br>Program<br>Run<br>Abstraction<br>Decomposition<br>Evaluate<br>Collaborate |   | Digital Footprint – Online profile<br>Trusted Search Engine<br>Targeted Advert<br>Promote products<br>Fair Use<br>Plagiarism<br>Citation  | Manipulation (Images)<br>Promote<br>Copywrite<br>Hyperlink<br>Phising<br>SPAM<br>Virus       |   |
|   |   | Autumn Term 2   |  |   |
|   |   | Video Production<br>Capturing<br>Editing<br>Manipulation (Video)<br>Camera angles – High, Normal, Low Angle, Long Shot, Moving Subject, Close Up, Mid-Range.<br>Store, Retrieve and Export<br>Reshooting<br>Edits |  |   |
| Information Technology and Digital literacy   |   | Spring Term 1   |  |   |
| Attribute<br>Data<br>Information<br>Information Technology<br>Technology<br>Digital Device<br>Online Communication<br>Social Media<br>Privacy settings        | Search Engine Results Page (SERP)<br>Plagiarism<br>Digital Citizen<br>Copywrite<br>Virus<br>Phising<br>SPAM | CRUMBLE<br>Component<br>LED<br>Microbit<br>Microcontroller<br>Sparkler/Motor/Buzzer<br>Sequence<br>Block coding   | Infinite Loop<br>Count-controlled Loop<br>Condition Loop<br>Debugging<br>If...then statement |   |
|   |   | Spring Term 2   |  |   |
|   |   | Data<br>Databases<br>Flat file Databases<br>Records<br>Attributes<br>Fields<br>Data set<br>Grouping   |  | Chart<br>Values<br>Sort<br>Filter<br>Refine<br>"AND" "OR"<br>Criteria |
|   |   | Summer Term 1   |  |   |
|   |   | Vector<br>Shape and line tools<br>Object<br>Zoom<br>Resize<br>Duplicate   |  | Rotate<br>Handles<br>Modify<br>Layers<br>Group/ungroup                |
|   |   | Summer Term 2   |  |   |
|   |   | Generate, random, simulate, condition, position, value, x-axis, angle, coordinates, event, hit, heading, variable, degrees, position  |  |   |

# Year 6

| Disciplinary knowledge  |  | Computing Knowledge  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
|---|--|--|-----------------------------------|--|------------|-------------------|-----------------|------------------------|-------------|------------|-------|----------------|-----------|----------------------|--------|--------------|--|------------------|--|--|--|---|--|--|-------------|-----------|---------|-------------|-------------------------|--------------|----------|---------------------|----------------|--------|-------|-------------|-------------|--|-------|
| Computational Thinking  |  | Autumn Term 1  |                                   | Autumn Term 2  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Algorithm<br>Code<br>Code snippet<br>Command<br>Tinkering<br>Debugging<br>Object<br>Program<br>Run<br>Abstraction<br>Decomposition<br>Evaluate<br>Collaborate   |  | Digital Footprint – Online profile<br>https, site ,<br>domain<br>browse,<br>address bar,<br>fraud<br>Cyberbullying<br>Secure website<br>Private, personal, instant messaging<br>Privacy policy<br>Gender Stereotypes<br>Attachments, secure, acronym<br>SMART  |                                   | HTML code<br>Page layout<br>Copywrite<br>“fair use”<br>Content and linking content<br>Preview<br>Evaluate<br>Navigation path<br>hyperlinks |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Information Technology and Digital literacy   |  | Spring Term 1  |                                   | Spring Term 2  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| <table border="1"> <tr> <td>Attribute</td> <td>Search Engine Results Page (SERP)</td> </tr> <tr> <td>Data</td> <td>Plagiarism</td> </tr> <tr> <td>Information</td> <td>Digital Citizen</td> </tr> <tr> <td>Information Technology</td> <td>Copywrite</td> </tr> <tr> <td>Technology</td> <td>Virus</td> </tr> <tr> <td>Digital Device</td> <td>Phising</td> </tr> <tr> <td>Online Communication</td> <td>SPAM</td> </tr> <tr> <td>Social Media</td> <td></td> </tr> <tr> <td>Privacy settings</td> <td></td> </tr> </table> |  | Attribute  | Search Engine Results Page (SERP) | Data   | Plagiarism | Information       | Digital Citizen | Information Technology | Copywrite   | Technology | Virus | Digital Device | Phising   | Online Communication | SPAM   | Social Media |  | Privacy settings |  | <table border="1"> <tr> <td>input, variable, property, background, grid, pixel, block, convert, alignment, unit, scale, condition, event,</td> <td>loop, if statement, discount, calculate, total, percentage, Boolean, analogue, digital</td> </tr> </table>  |  | input, variable, property, background, grid, pixel, block, convert, alignment, unit, scale, condition, event, | loop, if statement, discount, calculate, total, percentage, Boolean, analogue, digital | <table border="1"> <tr> <td>Data</td> <td>Formula</td> </tr> <tr> <td>Spreadsheet</td> <td>Input</td> </tr> <tr> <td>Sheets/Excel</td> <td>Output</td> </tr> <tr> <td>Cell</td> <td>Operation</td> </tr> <tr> <td>Format</td> <td>Range</td> </tr> <tr> <td>Calculation</td> <td>Duplication</td> </tr> <tr> <td></td> <td>Chart</td> </tr> </table> |             | Data      | Formula | Spreadsheet | Input                   | Sheets/Excel | Output   | Cell                | Operation      | Format | Range | Calculation | Duplication |  | Chart |
| Attribute   | Search Engine Results Page (SERP)  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Data  | Plagiarism   |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Information   | Digital Citizen  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Information Technology  | Copywrite  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Technology  | Virus  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Digital Device  | Phising  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Online Communication  | SPAM   |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Social Media  |  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Privacy settings  |  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| input, variable, property, background, grid, pixel, block, convert, alignment, unit, scale, condition, event,   | loop, if statement, discount, calculate, total, percentage, Boolean, analogue, digital |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Data  | Formula  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Spreadsheet   | Input  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Sheets/Excel  | Output   |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Cell  | Operation  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Format  | Range  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Calculation   | Duplication  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
|   | Chart  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
|   |  | Summer Term 1  |                                   | Summer Term 2  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
|   |  | <table border="1"> <tr> <td>3 D modelling</td> <td>Recolour</td> </tr> <tr> <td>Computer Assisted</td> <td>Group/ungroup</td> </tr> <tr> <td>Drawing</td> <td>Placeholder</td> </tr> <tr> <td>TinkerCAD</td> <td>Holes</td> </tr> <tr> <td>Project</td> <td>Construct</td> </tr> <tr> <td>Perspectives</td> <td>Modify</td> </tr> <tr> <td>Resize</td> <td></td> </tr> <tr> <td>Lift/lower</td> <td></td> </tr> </table> |                                   | 3 D modelling  | Recolour   | Computer Assisted | Group/ungroup   | Drawing                | Placeholder | TinkerCAD  | Holes | Project        | Construct | Perspectives         | Modify | Resize       |  | Lift/lower       |  | <table border="1"> <tr> <td>MICRO:BIT</td> <td>LED display</td> </tr> <tr> <td>Microcontroller</td> <td>“if...else”</td> </tr> <tr> <td>Variables</td> <td>Inputs</td> </tr> <tr> <td>Algorithm</td> <td>Count trolled iteration</td> </tr> <tr> <td>Counter</td> <td>Function</td> </tr> <tr> <td>Code, Run, Evaluate</td> <td>Visualise Data</td> </tr> </table> |  | MICRO:BIT   | LED display  | Microcontroller  | “if...else” | Variables | Inputs  | Algorithm   | Count trolled iteration | Counter      | Function | Code, Run, Evaluate | Visualise Data |        |       |             |             |  |       |
| 3 D modelling   | Recolour   |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Computer Assisted   | Group/ungroup  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Drawing   | Placeholder  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| TinkerCAD   | Holes  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Project   | Construct  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Perspectives  | Modify   |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Resize  |  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Lift/lower  |  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| MICRO:BIT   | LED display  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Microcontroller   | “if...else”  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Variables   | Inputs   |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Algorithm   | Count trolled iteration  |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Counter   | Function   |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |
| Code, Run, Evaluate   | Visualise Data   |  |                                   |  |            |                   |                 |                        |             |            |       |                |           |                      |        |              |  |                  |  |  |  |   |  |  |             |           |         |             |                         |              |          |                     |                |        |       |             |             |  |       |

## Talk like a computer scientist

The purpose of my project is...

In my opinion, I feel that I can improve this by...

I believe that my program is good/bad because...

I found the process/ skill of... Most challenging because ...

The problems I faced were ... I overcame them by ...

Possible improvement may include...

The computer aided design helped me to...

To create my project, it was essential to understand...

In my opinion, the success of this project was....However...

You could improve this project by... maybe you could try...

