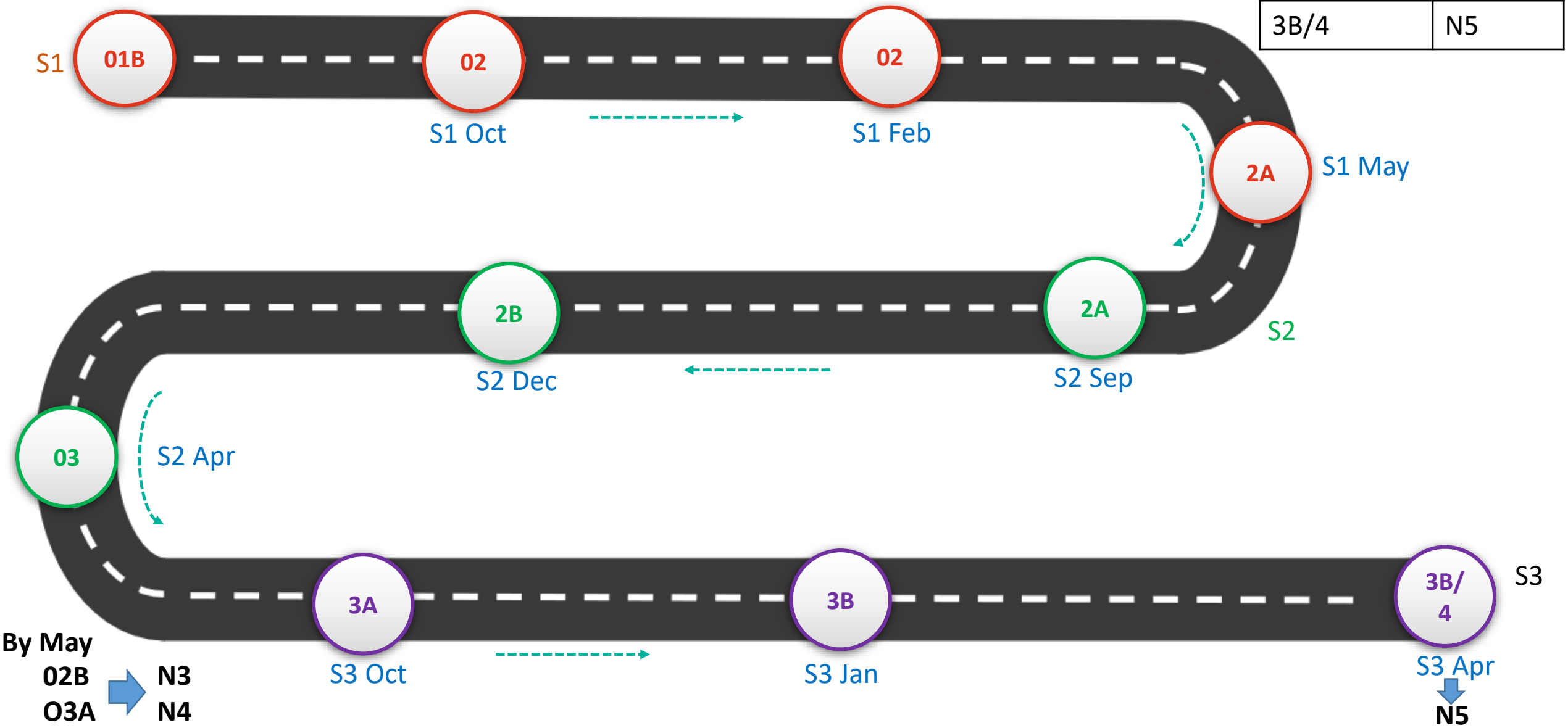
BGE Progression Framework to N5

Subject: ICT\Computing Science

Next >

By April S3	Pathway
2B	N3
3A	N4
3B/4	N5



< Back

Next >

Year	Period	Course Overview
S1	August - January	**Digital Literacy:** File Handling / Cloud Storage / Research Report **Scratch Programming**: Input+Ouput/ Variables / Arithmetic Operations / selection (IF)
	January - April	**Online Safety:** Cyber Threats / Passwords / Social Media / Cyberbullying **Web Development**: HTML Introduction / CSS Introduction **Spreadsheets**: Structure / Formatting / Formula / Functions
S2	May - October	**Robomind:** Move, IF, Loop **Programming:** Livecode UI / Input+Ouput / IF command / Quiz
	November - April	**Microbits:** Input+Ouput / Sensors / Robots. **Web Development 2:** HTML / CSS / JS Intro
S3	May - October	**Programming:** Variables/Arithmetic Operations / Selection **Computer Systems:** Data Representation / Computer Structure / Encryption
	November - May	**Web Development 3 :** HTML / CSS / JavaScript / Multimedia **Programming 2:** Fixed Loops / Conditional Loops / Standard Algorithms **Databases:** Database Design / SQL

Assessment Calendar

< Back

Type of Assessment

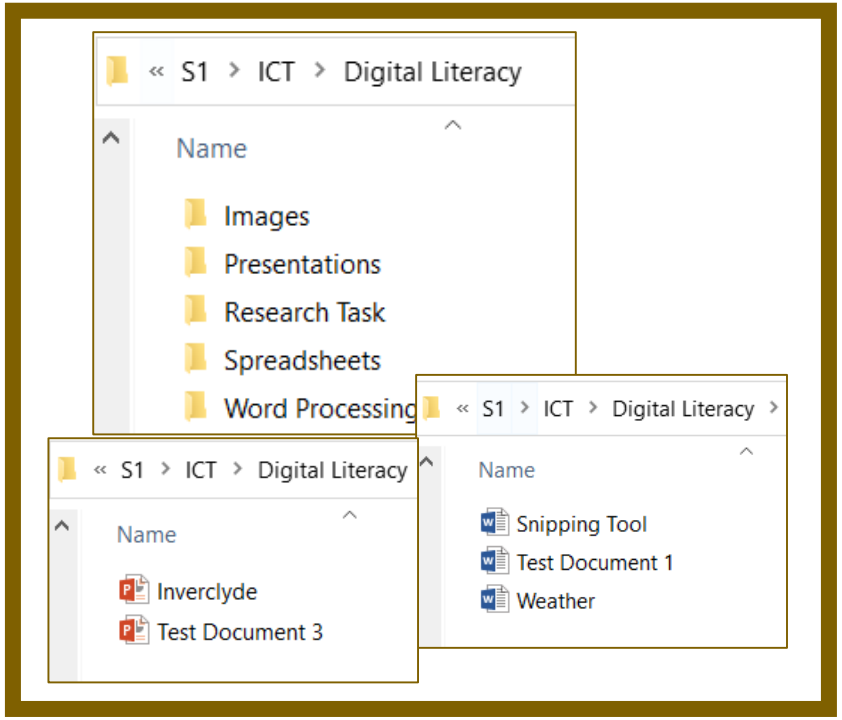
On-Going | High Quality | Periodic

Year Group	May	Jun	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
S1			File Handling \ Cloud		Research Report	Scratch Coding Challenges	Coding Quiz	Online Safety	Web Challenges Zoo Website	Spreadsheet Challenges	
S2	Robomind Challenges		Livecode Challenges		Coding Quiz	Microbit Challenges		Web Challenges	Own Website		
S3	Livecode Challenge Tasks			LiveCode Practical Assessment Coding Written Assessment		Systems Assessment	Own Website Checklist		Web Assessment	Livecode Challenge Tasks Coding Written Assessment	

S1 ICT

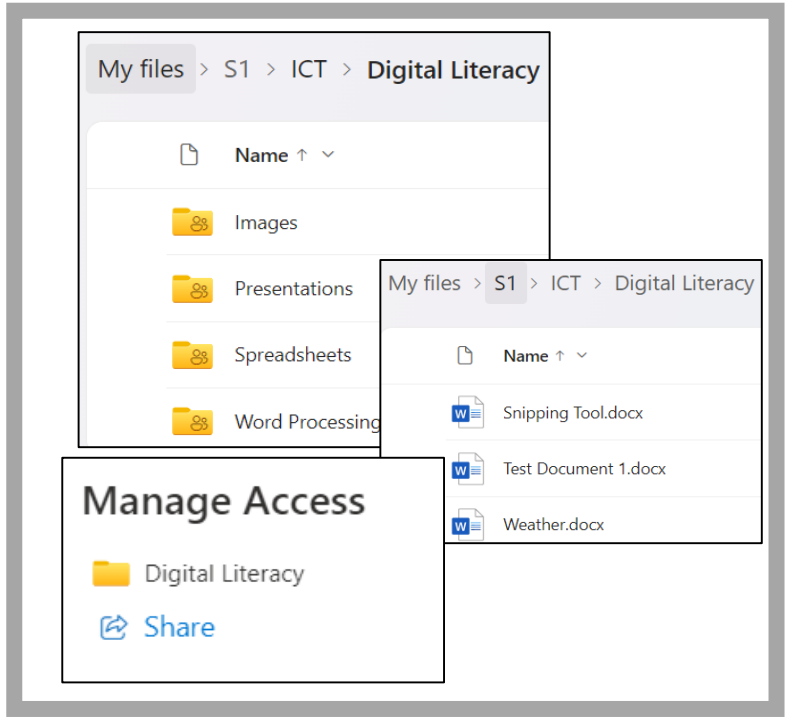
S1 Aug-Jan
(Digital Literacy: Organised Working)

< Back



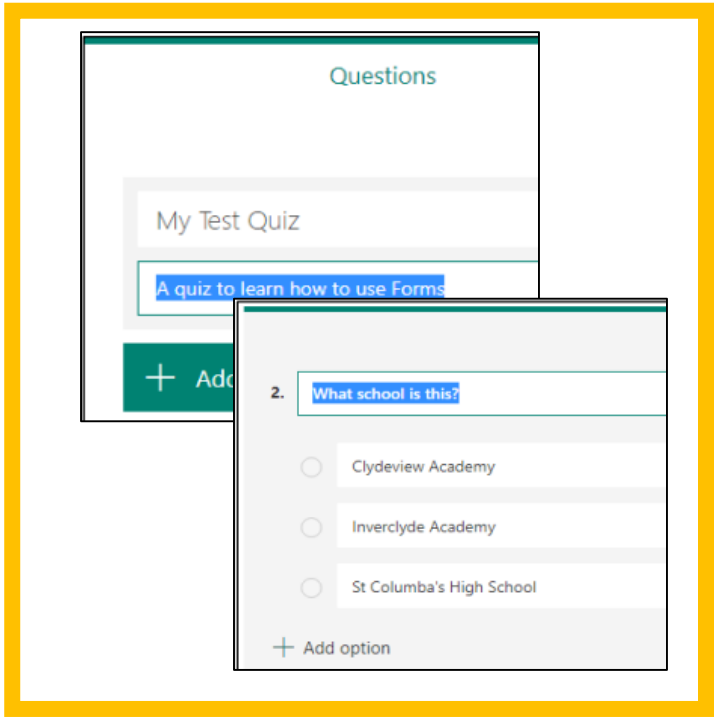
Everyone will have…

- **Add** folders within other folders to **create** an organised filing structure.
- Use the most appropriate applications to create documents.
- Save documents with sensible names to appropriate folders



Most people will also have…

- **Create** cloud folder structure to store documents online.
- Upload documents to the cloud and store in appropriate folders.
- Share folders and documents using appropriate permissions.



Some people will also have…

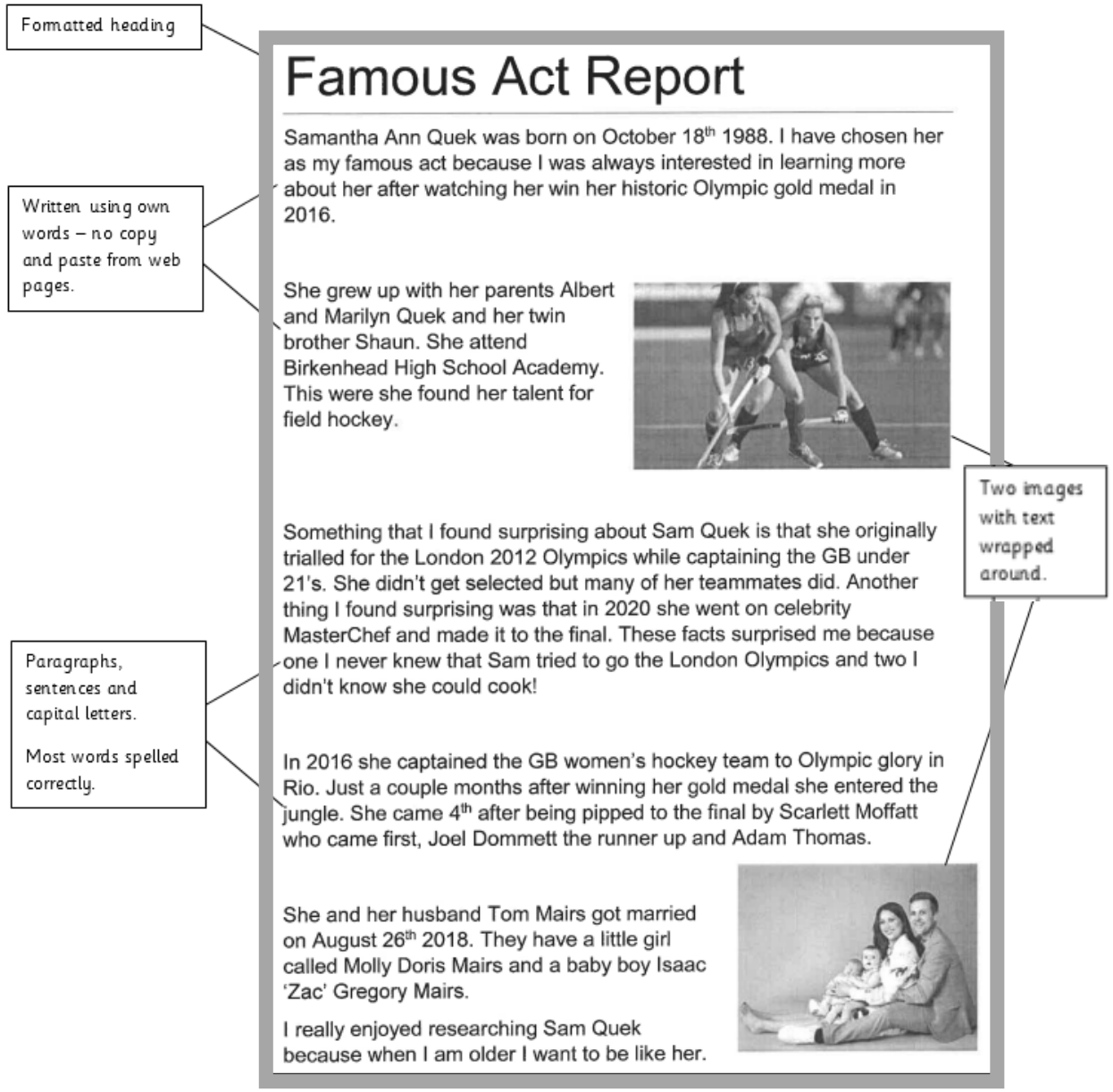
- Use unfamiliar software to **create** a useful application (quiz).

S1 Aug-Jan
(Digital Literacy: Online Research and Reporting)

< Back

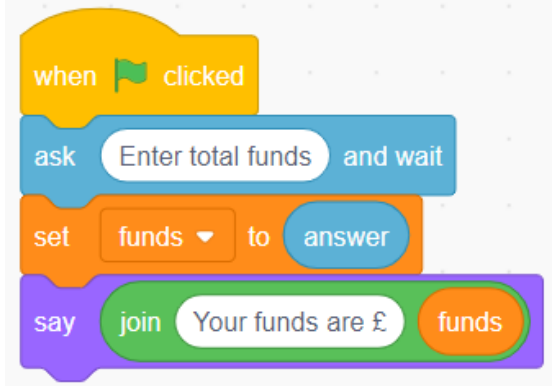
Most people will also have…

- Document created with **formatted** heading.
- Research notes used to present information using **own words**.
- Paragraphs, sentences and correct punctuation.
- Most words spelled correctly.



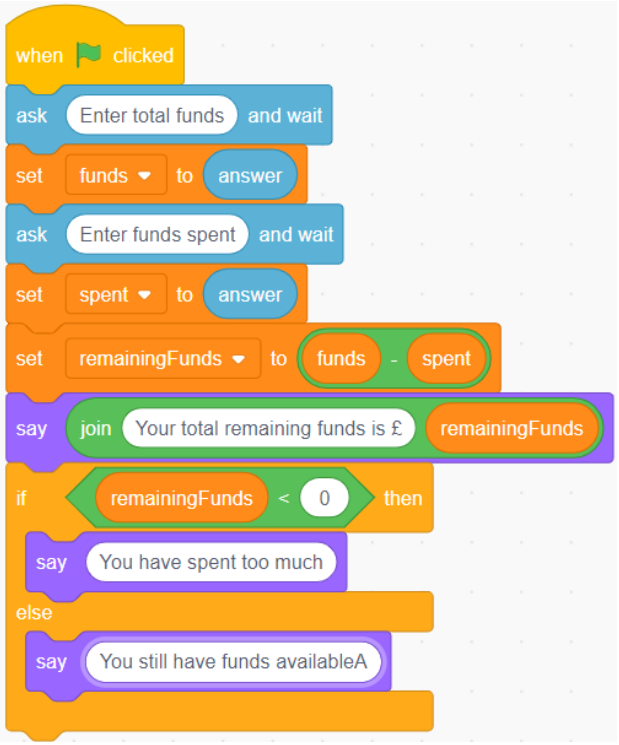
S1 Aug-Jan
(Scratch Programming)

< Back



Everyone will have…

- Receive user input into variable.
- Display output by joining a message and a variable



Most people will also have…

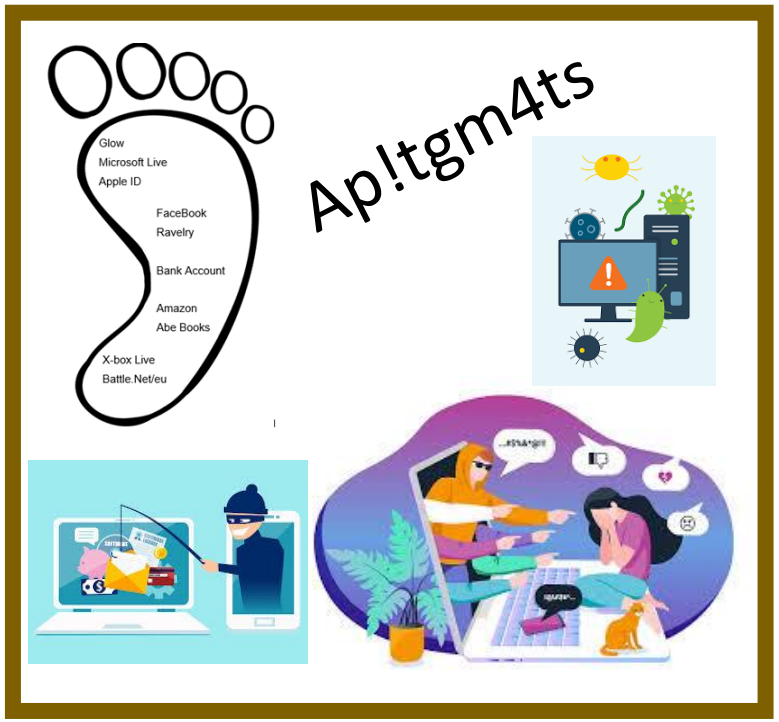
- Receive user inputs into multiple variables.
- Perform calculation and store result using variables.
- Display output by joining message and a variable.
- Use selection (IF) to compare variable values and display different output messages.

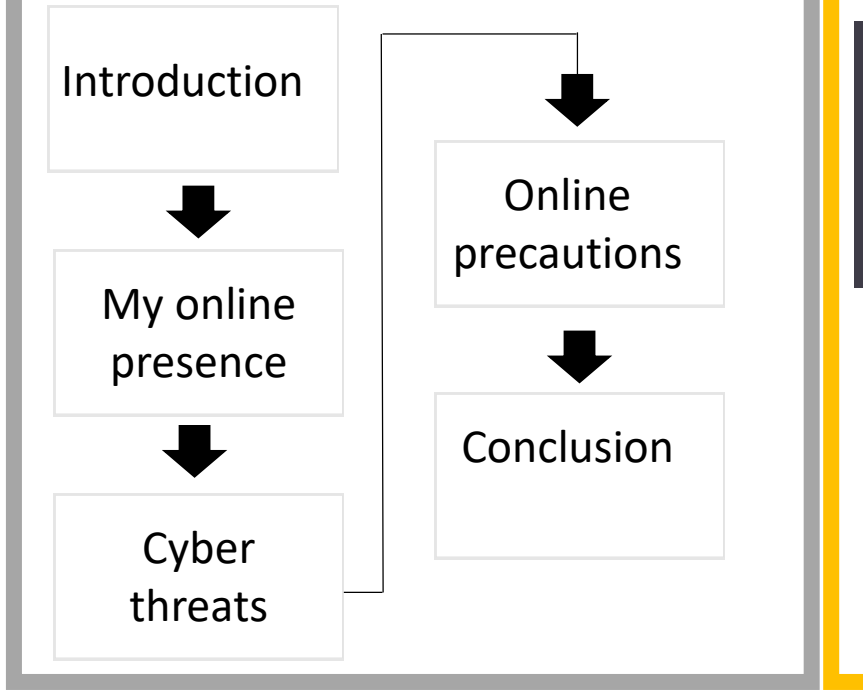
Some people will also have…

- Create programs that use repetition commands (loops).

S1 Aug-Jan
(Cyber Security)

< Back





Everyone will have…

- Created a diagram of their own digital footprint.
- Identified the features of a secure password
- Identified cyber threats by their description.
- Identified the features and impact of cyberbullying.

Most people will also have…

- Created a presentation which includes evaluation of online presence, online risks and precautions.
- Created a presentation which is presented in a logical order and makes use of technical vocabulary.

Some people will also have…

- Identified fake news articles by cross-referencing websites
- Investigated news articles about real-life cyber crimes.

S1 Jan-Apr
(Web Development)

< Back

```
<html>
    <head>
        <title>Add a Title</title>
    </head>
    <body>

    <h1>Edit a heading</h1>

    <p> Add a paragraph </p>

    <img src="addAnImage.jpg">

    <a href="newPage">Add a hyperlink</a>


    </body>

</html>
```

Everyone will have…

- **Add** a title, heading, paragraph, image and hyperlink using HTML

```
<html>
    <head>
        <title>Add a Title</title>

        <style>

        body {background-color:red;
              color: black;}

        h1 {text-align:center;
            font-family:"Comic Sans MS";}

        </style>

    </head>
    <body>

        <ul>
        <li> Bullet list item </li>
        <li> Bullet list item </li>
        <li> Bullet list item </li>
        </ul>

    </body>

</html>
```

Most people will also have…

- **Add** HTML bullet point & numbered lists.
- **Edit** CSS styles to change background colour, text colour, alignment and font.

```
<html>
    <head>
        <title>Add a Title</title>

        <style>
        body {background-color:red;
              color: black;}

        h1 {text-align:center;
            font-family:"Comic Sans MS";}
        </style>

    </head>
    <body>
        <h1>A new heading</h1>
        <p>Some information in a paragraph</p>

        <ol>
        <li> Some list info </li>
        <li> Some list info </li>
        <li> Some list info </li>
        </ol>
        <img src="new image.jpg">
        <a href="home.html">Link to homepage</a>
    </body>

</html>
```

Some people will also have…

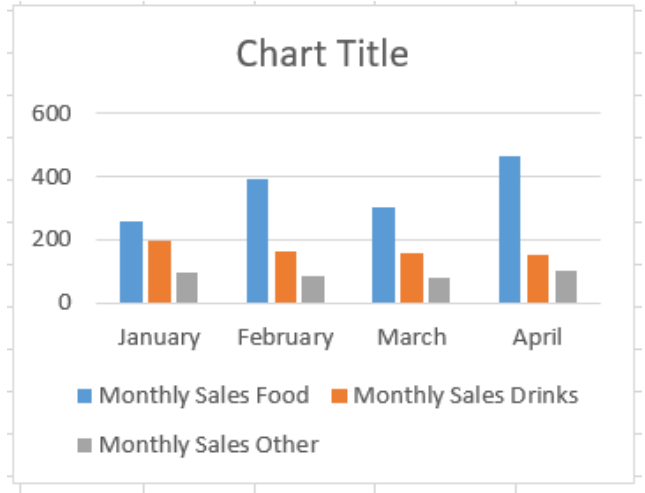
- Use HTML and CSS code to **create** complete web pages by adding all elements.

S1 Jan-Apr
(Spreadsheets)

< Back

	A	B	C	D
1	Monthly Sales			
2		Food	Drinks	Other
3	January	258	198	98
4	February	391	165	82
5	March	305	155	77
6	April	462	149	99

	A	B	C	D
1	Cash Spent			
2		Week 1	Week 2	Total
3	Cinema	25	0	=B3+C3
4	Food	80	75	=B4+C4
5	Shopping	45	23	=B5+C5
6	*Total*	=SUM(B3:B5)	=SUM(C3:C5)	=B6+C6
7	*Average*	=AVERAGE(B3:B5)	=AVERAGE(C3:C5)	
8	*Highest*	=MAX(B3:B5)	=MAX(C3:C5)	
9	*Lowest*	=MIN(B3:B5)	=MIN(C3:C5)	



Everyone will have…

- **Add** data to correct cells**.**
- Change cell formats using font, size, colours, alignment and borders.
- Merge and centre cells

Most people will also have…

- **Add** formula to add, subtract, multiply and divide two values using cell references.
- **Add** functions to find the SUM, AVERAGE, MIN or MAX in a cell range.

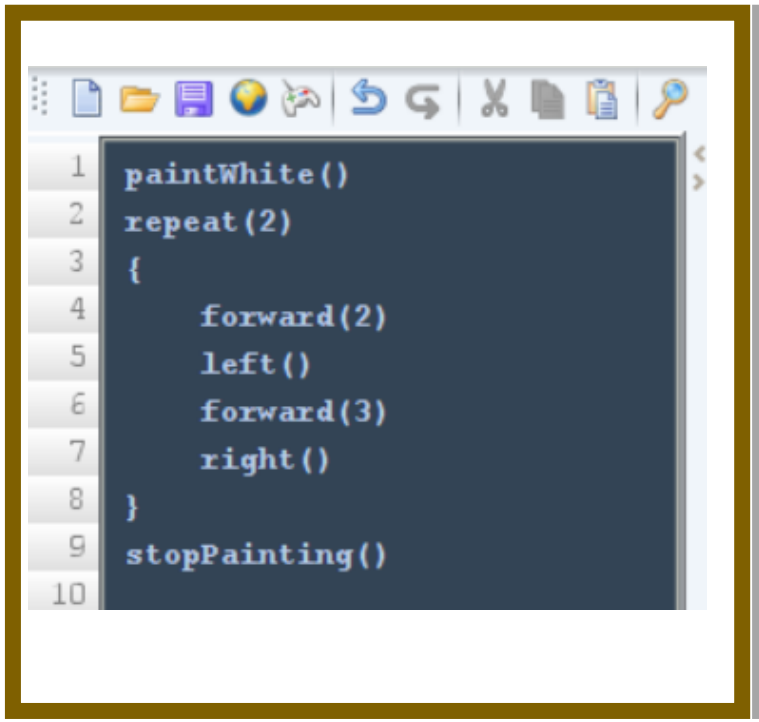
Some people will also have…

- Use cell values to create and edit charts.

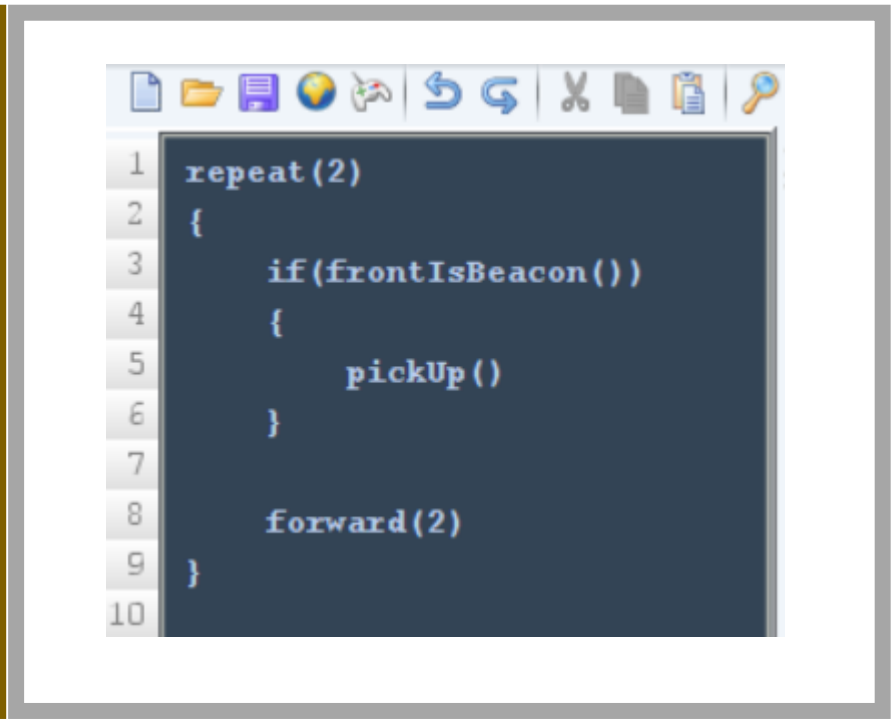
S2 Computing Science

S2 May - Oct
(Robomind)

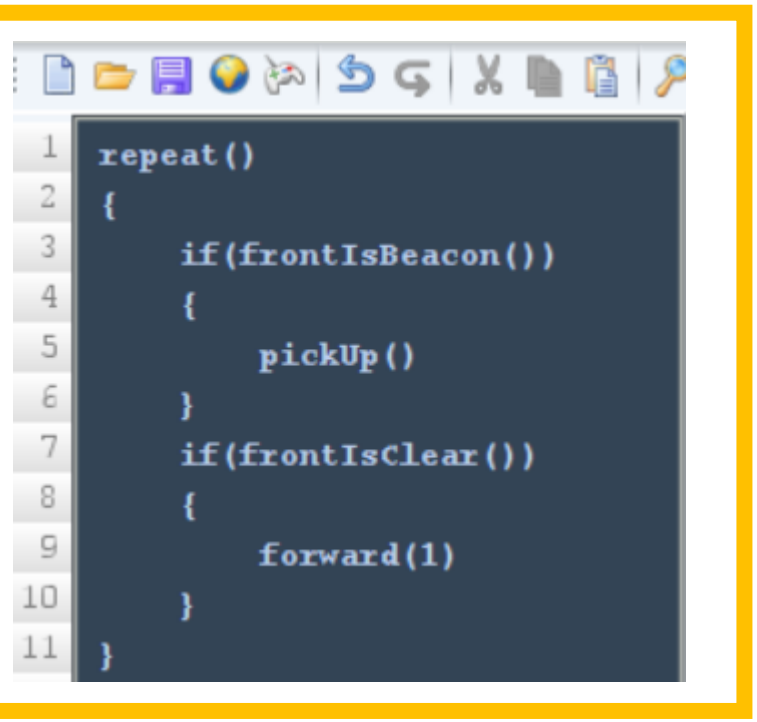
< Back



```
1  paintWhite()
2  repeat(2)
3  {
4      forward(2)
5      left()
6      forward(3)
7      right()
8  }
9  stopPainting()
10
```



```
1  repeat(2)
2  {
3      if(frontIsBeacon())
4      {
5          pickUp()
6      }
7
8      forward(2)
9  }
10
```



```
1  repeat()
2  {
3      if(frontIsBeacon())
4      {
5          pickUp()
6      }
7      if(frontIsClear())
8      {
9          forward(1)
10     }
11 }
```

Everyone will have…

- **Add** code to move a robot in the correct directions to solve problems
- **Add** loop code to make a robot repeat simple patterns.

Most people will also have…

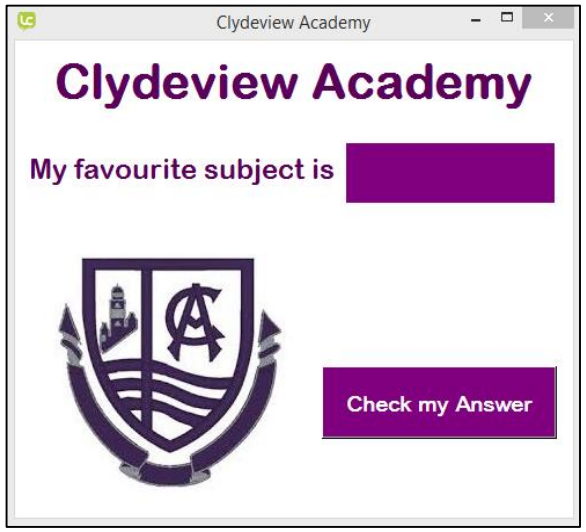
- **Add** code to make robots move beacons to the correct position.
- **Add** loop code to make a robot repeat complex patterns.
- **Add** code using selection (IF) and loop commands to move a robot autonomously.

Some people will also have…

- Create complex instructions using code with selection and loops to make a robot move and collect objects autonomously.

S2 May - Oct
(LiveCode Programming)

< Back




```
on mouseUp
    if field txtQuestion1 = "Sweden" then
        answer "Correct!"
        put empty into field txtQuestion1
        go to next card

    else
        answer "Incorrect, please try again"
    end if
```

```
local song  //string variable

ask "What is your favourite song?"
put it into song

put song & " is a really good song." & return after field output
```

Everyone will have…

- Create a user interface following a given design using a variety of controls including:
  - ✓ Text fields, Labels, Buttons, Images

Most people will also have…

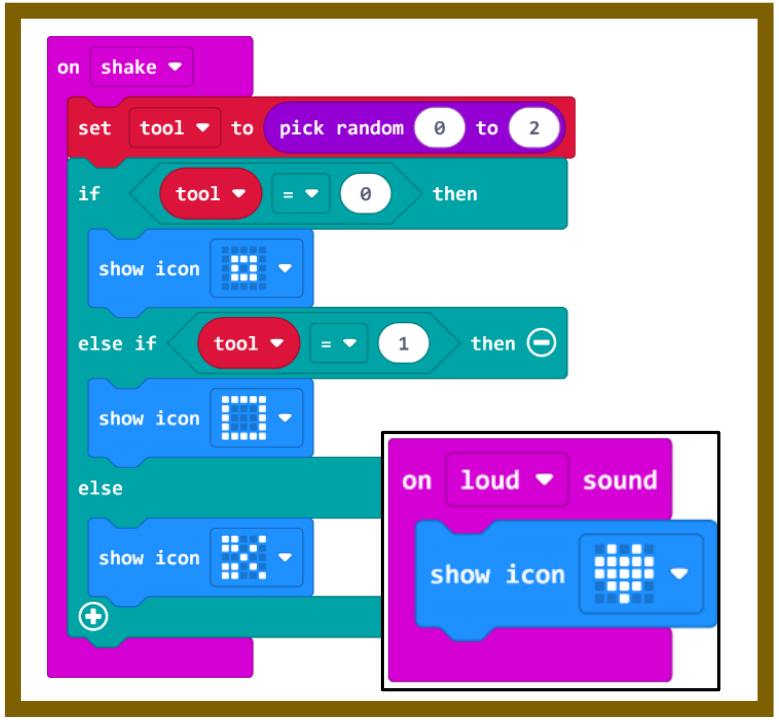
- Design a user interface using a variety of controls including:
  - ✓ Text fields, Labels, Buttons, Images
- Add code to buttons to check user input.
- Add code to buttons to display output messages.

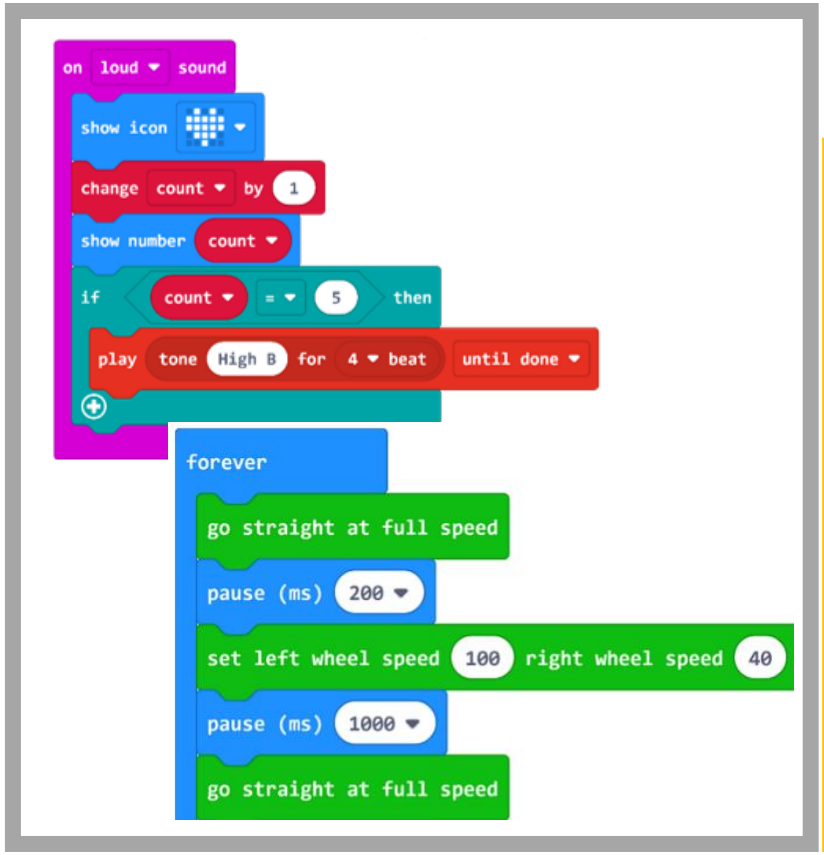
Some people will also have…

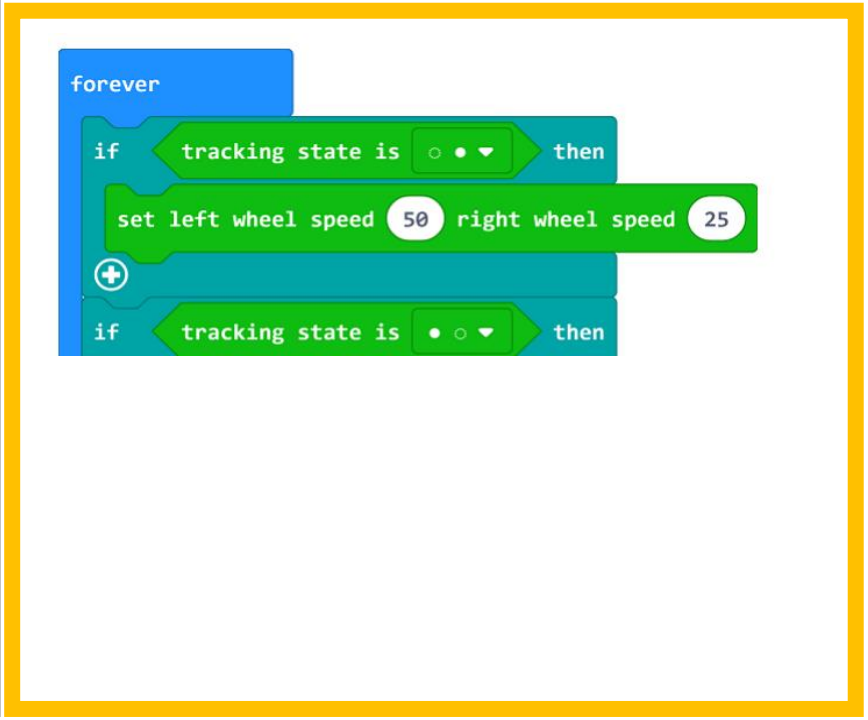
- Create programs that make use of input and output commands with variables.

S2 May - Oct
(Microbit \ Robot Programming)

< Back







Everyone will have…

- Follow instructions to program a Microbit game.
- Program Microbit sensor inputs by following instructions.

Most people will also have…

- Adapt code to make improvements to an application or game.
- Adapt code to create a new application of game.
- Create code to control the movement of a robot

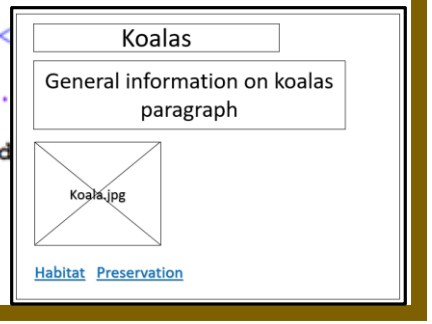
Some people will also have…

- Create code to enable a robot to follow a line independently

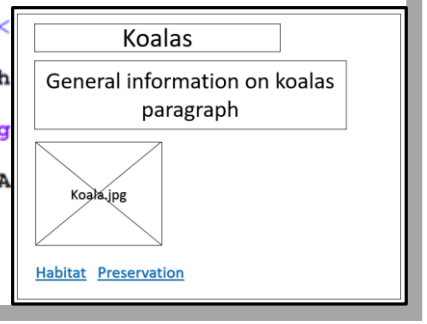
S2 May – Oct (Web Development)

< Back

```
<html>
<head>
    <title>Add a Title</title>

    <style>
     h1 {text-align:center;
         font-family:"Comic Sans MS";}

     </style>

</head>
<body>

<h1>Edit a heading</h1>

<p> Add a paragraph <

<img src="addAnImage.

<a href="newPage">Add


</body>
</html>
```




```
<html>
    <head>
        <title>Add a Title</title>

        <style>

        body {background-color:red;
              color: black;}

        h1 {text-align:center;
            font-family:"Comic Sans MS";}

        </style>

    </head>
    <body>
       <h1>Edit a heading<

       <p> Add a paragraph

       <img src="addAnImag

       <a href="newPage">A
    </body>

</html>
```




```
onmouseover = "this.src =
'images/Paris2.jpg'"


onmouseout= "this.src =
'images/Paris.jpg'"
```

Everyone will have…

- **Design** a web page using a wireframe diagram.
- **Create** a web page using HTML coding containing headings, paragraphs, images, hyperlinks.
- **Add** at least one CSS rule to format a web page.

Most people will also have…

- **Design** a web site with at least two page using a wireframe diagram.
- **Create** a web site using HTML code, with two linked pages, incorporating several elements
- **Add** multiple CSS rules including those to adjust image height and width.

Some people will also have…

- **Add** HTML, CSS or JavaScript code to a website to create interactivity.

S3 Computing Science

S3 May - Oct
(LiveCode Programming 1)

< Back

```
local firstNum //integer variable
local secondNum //integer variable
local total //integer variable

ask "Please enter your first number?"
put it into firstNum

ask "Please enter your second number?"
put it into secondNum

put firstNum + secondNum into total

put "The total of your two numbers is " & total & return after field output
```

Everyone will have…

- Declare appropriate variables with correct data types
- Receive user inputs and store in correct variables
- Simple arithmetic operation used and result stored.
- Output with concatenation

```
ask "Please enter the age of the footballer"
put it into age


if age <8 then
      put "Beginner" into stage
else if age <13 then
      put "Junior" into stage
else
      put "Youth" into stage
end if
```

Most people will also have…

- Create solutions using all programming commands on left and extended using:
- Selection statements (IF) to carry out different commands depending on result of condition.

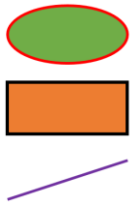
```
local timesToLoop //integer variable

ask "Please enter number of times your want to loop"
put it into timesToLoop

repeat with index = 1 to timesToLoop

  put "Here is loop " & index & return after field output

end repeat

  put "The loop has ended." & return after field output
```

Some people will also have…

- Create programs that use repetition commands (loops).

S3 May - Oct
(Computer Systems)

ASCII Character	Denary Number	Binary Number
F	70	01000110
u	117	01110101
n	110	01101110



ellipse

rectangle

line

Denary Number	128	64	32	16	8	4	2	1
74	0	1	0	0	1	0	1	0
97	0	1	1	0	0	0	0	1
61	0	0	1	1	1	1	0	1
32	0	0	1	0	0	0	0	0

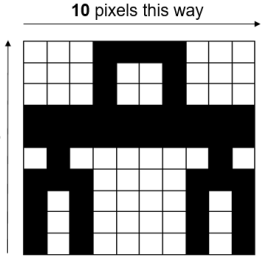
Exponent

0.23679×10^{2}

Mantissa

10 pixels this way

10 pixels this way



```
<ellipse CX="80", CY="100", rx="60", ry="30">
```

- Arithmetic and Logic Unit (ALU)
- Registers
- Control Unit

< Back

Everyone will have…

- State how text is stored in a computer using ASCII.
- Identify different vector graphic shapes.
- Identify devices as being input or output.
- Describe what encryption is an why it is used.

Most people will also have…

- Convert denary to binary and vice versa.
- Identify mantissa and exponent in a floating point number.
- Explain how pixels are used to represent images
- Explain how resolution and colour depth is affected by pixels and binary
- Identify vector graphic attributes
- Describe the parts of the CPU

Some people will also have…

- Solve complex encryption puzzles.

S3 Nov - May
(Web Development)

```
<html>
    <head>
        <title>Add a Title</title>
    </head>
    <body>

    <h1>Edit a heading</h1>

    <p> Add a paragraph </p>

    <img src="addAnImage.jpg">

    <a href="newPage">Add a hyperlink</a>

       <ul>
       <li> Bullet list item </li>
       <li> Bullet list item </li>
       <li> Bullet list item </li>
       </ul>

   </body>

</html>
```

Everyone will have…

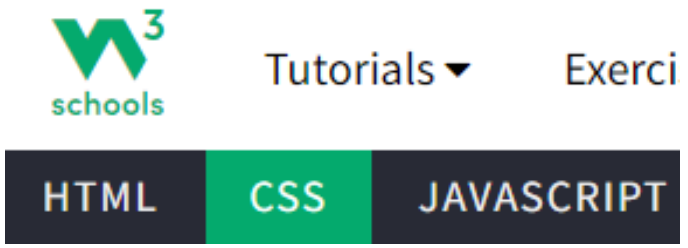
- **Add** a title, heading, paragraph, image and hyperlink using HTML
- **Add** HTML bullet point & numbered lists.

```
<html>
    <head>
        <style>
            #maintitle{font-family:impact;
                       background-color:red;
                       color:blue;
            }

            .sectionHeads{font-size:32pt;}

            p{text-align:center;}
        </style>
    </head>

    <body>
        <h1 id="maintitle">Les Arcs</h1>
        <div id="enterSite">
           <a href="page2.html"> Enter Site</a>
        </div>

        <p class="sectionHeads">Log or sign up</p>

        <img src="lesarc1.jpg"
             onmouseover="this.src='lesarc2.jpg'"
             onmouseout="this.src='lesarc1.jpg'">
    </body>
</html>
```

Most people will also have…

- **Add** CSS styles using ID, Class and Element selectors.
- Use CSS to change fonts, text sizes, colours and alignment.
- Use JavaScript onmouseover / onmouseout events

< Back



Some people will also have…

- Research using online tutorials independently to add further features to your website.

S3 Nov - May
(LiveCode Programming 2)

< Back

```
local timesToLoop //integer variable

ask "Please enter number of times your want to loop"
put it into timesToLoop

repeat with index = 1 to timesToLoop

   put "Here is loop " & index & return after field output

end repeat

   put "The loop has ended." & return after field output
```

Everyone will have…

- Create programs that use repetition commands (fixed loops).

```
put 0 into total

repeat with index = 1 to 5
  put 0 into userNumber

  repeat until userNumber >= 1 and userNumber <=50
    ask "Please enter a number between 1 and 50"
    put it into userNumber

    if userNumber < 1 or userNumber > 50 then
      answer "Number is not valid - please re-enter"
    end if

  end repeat

  put userNumber + total into total

end repeat
```

Most people will also have…

- Create programs that use repetition commands (conditional loops).
- Create programs that use and combine standard algorithms:
  - ✓ Running total
  - ✓ Input validation

```
put round(realNumber, 2) into roundedNumber

put random(5) into randomNum

put length(someText) into textLength
```

Some people will also have…

- Create programs that use pre-defined functions:
  - Round
  - Random
  - Length