Year group objectives for Computing – Year 5

See individual lesson plans (link) for knowledge, skills, assessment opportunities, activities and slides.

Autumn 1 (Sharing information)

Session no.	Objective	Assessment
1	To explain that computers can be connected together to form systems	**Introduction:** You can record learners' initial understanding of 'system', which can be revisited later to show the growth in the learners' understanding. **Activity 2:** Learners can demonstrate their understanding of input and output devices as introduced in Year 3 – 'Connecting computers'. **Activity 3:** Learners can show their understanding of the different steps that make up a system.
2	To recognise the role of computer systems in our lives	**Introduction:** Learners can revisit the term 'system' from lesson 1. **Activity 1:** Learners can show their understanding of sensors in a computer system and their understanding of how these systems affect those who use them. **Activity 2:** Learners are encouraged to break a larger process down into small steps, and can show their understanding of what must come before and after, to ensure all the parts work together. **Plenary:** Learners can show that they recognise the impact on humans when computer systems are used.
3	To recognise how information is transferred over the internet	**Introduction:** Learners can show their understanding of the wider uses of the technology they use (the internet) as a tool for devices to communicate. **Activity 2:** Check learners' understanding that the internet is billions of devices connected together in a network of networks (linked to Year 4 – What is the internet? – Lesson 1). **Activity 3:** Learners can apply their understanding of rules and addresses to send the 'packet' through the 'internet' correctly. **Activity 4:** Learners can show that they can apply the role play in activity 3 to the real-life internet devices that the role play represented.

4	To explain how sharing information online lets people in different places work together	**Introduction:** Check the learners' understanding of the previous lesson. **Activity 1:** Learners can show an understanding of the benefits and limitations of different technological solutions to a problem. **Activity 2:** Learners can demonstrate their ability to find online content (text and images) to use on their slides, and show how to arrange them effectively. **Activity 3:** Learners can reflect on the challenges of collaborating online.
5	To contribute to a shared project online	**Introduction:** Learners can show an understanding of the collaboration skills required to work together online. **Activity 1:** Learners can reflect accurately on their ability to collaborate offline and can apply this to help them work together online. **Activity 2:** Learners can demonstrate the key collaborative behaviours (top tips) outlined in Activity 1.
6	To evaluate different ways of working together online	**Introduction:** Learners can show an understanding of what helped them to work collaboratively in previous lessons. **Activity 1:** Learners can show that they understand what remixing is and how it is a different approach to collaboration. **Activity 2:** Learners can show that they can build on someone else's work and make it do more than it did originally. **Activity 3:** Learners can show an understanding of why it can be good to share our work for others to see, as well as acknowledging that not all work is shared in this way. **Plenary:** Learners can show an awareness of copyright and what media they can and can't reuse.

Autumn 2 (Vector drawing)

Session no.	Objective	Assessment
1	To identify that drawing tools can be used to produce different outcomes	**Activity 1:** Assess whether the learners can create a picture using physical shapes. **Activity 2:** Assess whether the learners can create digital shapes and lines.

		Activity 3: Assess whether the learners can select and change the colour of shapes and lines. **Plenary:** Assess whether the learners can discuss how vector drawings are different from paper-based drawings.
2	To create a vector drawing by combining shapes	**Introduction:** Assess whether the learners recognise that shapes are used in vector drawings and that the order in which these shapes are drawn is important. **Activity 1:** Assess whether the learners can create their own vector drawing using the rectangle and circle tools and duplicating shapes. **Activity 2:** Assess whether the learners can recognise where shapes have been rotated. **Activity 3:** Assess whether the learners can move, resize, and rotate objects. Assess whether the learners can use copy and paste to duplicate their objects.
3	To use tools to achieve a desired effect	**Activity 1:** Assess whether learners are able to use the zoom tool to move and place objects on the canvas. **Activity 2:** Assess whether the learners are able to explain how the alignment and resize guides can help them. **Activity 3:** Assess whether learners are able to modify objects to create a new image.
4	To recognise that vector drawings consist of layers	**Activity 1:** Assess whether the learners can recognise how an object has been ordered within a vector graphic. **Activity 2:** Assess whether the learners can use layering to modify an existing vector drawing. **Activity 3:** Assess whether the learners can create their own vector drawing by utilising the use of layering.
5	To group objects to make them easier to work with	**Activity 1:** Assess whether learners can copy part of a drawing by selecting multiple objects and grouping them together. **Activity 2:** Assess whether learners can ungroup objects, make changes to the objects, and regroup them. **Activity 3:** Assess whether learners can reuse and manipulate a group of objects to create a vector drawing.
6	To apply what I have learned about vector drawings	**Activity 1:** Assess whether learners can use the skills they have learnt in this unit to complete a vector drawing of a given object.

		Activity 2: Assess whether learners can reflect on the skills they have used to create vector drawings. **Activity 3:** Assess whether learners can recognise the difference between a drawing created in a vector drawing application and a drawing created in a paint program.

Spring 1 (Video editing)

Session no.	Objective	Assessment
1	To explain what makes a video effective	**Introduction/Plenary:** Learners can describe what 'video' is, and at the end of the lesson they can reflect on and improve their definition. **Activity 1:** Learners can describe a video, focussing on how the video was made and not just the content of the video. **Activity 2:** Learners can identify the composition differences between different sections of a video. **Activity 3:** Learners can compare more than one video, looking for similarities and differences.
2	To use a digital device to record video	**Introduction:** Learners can identify the key functions on their recording device. **Activity 1:** Learners can use the filming techniques introduced. **Activity 2:** Learners can use their experience from the previous activity to match the filming technique to the purpose. **Activity 3:** Learners can identify the filming techniques used in a filmed video.
3	To capture video using a range of techniques	Lesson missing
4	To create a storyboard	**Activity 1:** Learners can choose an appropriate theme for the scale of their video. **Activity 2:** Learners can create a storyboard for their video. Each section of the storyboard includes: • An image indicating what the scene will look like • A description of the filming techniques used • A script

		Activity 3: Learners can film the first sections of content for their video using their storyboard.
5	To identify that video can be improved through reshooting and editing	**Introduction:** Learners can understand the factors involved in creating an effective video. **Activity 1:** Learners can work in collaboration to record and if necessary reshoot a video. **Activity 2:** Learners can demonstrate that they can export their video content to a computer and retrieve files in preparation for editing. **Activity 3:** Learners can identify which issues would require a reshoot and which could be fixed through editing.
6	To consider the impact of the choices made when making and sharing a video	**Activity 1:** Learners can effectively remove unwanted content by deleting and trimming clips. **Activity 2:** Learners can reorder clips to match the sequence in their storyboard. **Activity 3:** Learners can export their video and evaluate how their edits have improved it. **Plenary:** Learners can suggest how they could share their video.

Spring 2 (Flat-file databases)

Session no.	Objective	Assessment
1	To use a form to record information	Unit missing
2	To compare paper and computer-based databases	Unit missing
3	To outline how you can answer questions by grouping and then sorting data	Unit missing
4	To explain that tools can be used to select specific data	Unit missing
5	To explain that computer programs can be used to compare data visually	Unit missing
6	To use a real-world database to answer questions	Unit missing

Summer 1 (Vector graphics)

Session no.	Objective	Assessment
1	To identify that drawing tools can be used to produce different outcomes	Unit missing
2	To create a vector drawing by combining shapes	Unit missing

3	To use tools to achieve a desired effect	Unit missing
4	To recognise that vector drawings consist of layers	Unit missing
5	To group objects to make them easier to work with	Unit missing
6	To apply what I have learned about vector drawings	Unit missing

Summer 2 (Selection in quizzes)

Session no.	Objective	Assessment
1	To explain how selection is used in computer programs	**Activity 1:** Assess the learners' understanding of how conditions are used to control the flow of actions in selection. **Activity 2:** Assess the learners' understanding of some of the ways that conditions can be used in programs, and the impact of meeting a condition. **Activity 3:** Assess the learners' ability to modify programs that use conditions.
2	To relate that a conditional statement connects a condition to an outcome	**Activity 1:** Assess the learners' understanding of why infinite loops need to be used with selection. **Activity 2:** Assess the learners' understanding of how a condition and the outcomes are linked in selection using an 'if… then... else…' structure. **Activity 3:** Assess the learners' ability to construct programs that use selection in the 'if… then... else…' structure. **Plenary:** Assess the learners' understanding of the outcome of a program in relation to the condition.
3	To explain how selection directs the flow of a program	**Activity 1:** Assess the learners' understanding of how a program can branch when a condition is or is not met. **Activity 2:** Assess the learners' ability to design a program that shows how a program will branch based on the response to a question. **Activity 3:** Assess the learners' ability to construct programs that use selection to direct the flow of the program. **Plenary:** Assess learners' understanding of how selection directs the flow of action in a program.
4	To design a program that uses selection	**Activity 1:** Assess the learners' knowledge of selection, and how it can be applied to meet the requirements of the task.

		Activity 2: Assess the learners' understanding of some of the ways that conditions can be used in programs, and the impact that meeting the condition has. **Activity 3:** Assess the learners' understanding of how selection will control the flow in their program.
5	To create a program that uses selection	**Activity 1:** Assess the learners' ability to implement their algorithms as a program. **Activity 2:** Assess the learners' ability to test their programs against their designs and identify where improvements may be needed. **Activity 3:** Assess the learners' understanding of the benefits of sharing their programs with others. **Plenary:** Assess learners' understanding of how selection is used in programs.
6	To evaluate my program	**Activity 1:** Assess the learners' ability to identify ways in which their programs could be improved. **Activity 2:** Assess the learners' understanding of setup, and how it would be used in their program. **Activity 3:** Assess the learners' ability to implement the improvements they have identified. **Plenary:** Assess the learners' understanding of how their program meets the requirements of the given task, and how it might be improved further.

Year group objectives for Computing – Year 6

Year 6 – Autumn 1 (Communication)

Session no.	Objective
1	To identify how to use a search engine
2	To describe how search engines select results
3	To explain how search results are ranked
4	To recognise why the order of results is important, and to whom
5	To recognise how we communicate using technology

6	To evaluate different methods of online communication

Year 6 – Autumn 2 (Webpage)

Session no.	Objective
1	To review an existing website and consider its structure
2	To plan the features of a web page
3	To consider the ownership and use of images (copyright)
4	To recognise the need to preview pages
5	To outline the need for a navigation path
6	To recognise the implications of linking to content owned by other people

Year 6 – Spring 1 (Variables)

Session no.	Objective
1	To define a 'variable' as something that is changeable
2	To explain why a variable is used in a program
3	To choose how to improve a game by using variables
4	To design a project that builds on a given example
5	To use my design to create a project
6	To evaluate my project

Year 6 – Spring 2 (Spreadsheets)

Session no.	Objective
1	To create a data set in a spreadsheet
2	To build a data set in a spreadsheet
3	To explain that formulas can be used to produce calculated data
4	To apply formulas to data
5	To create a spreadsheet to plan an event
6	To choose suitable ways to present data

Year 6 – Summer 1 (3d modelling)

Session no.	Objective
1	To use a computer to create and manipulate three-dimensional (3D) digital objects
2	To compare working digitally with 2D and 3D graphics
3	To construct a digital 3D model of a physical object
4	To identify that physical objects can be broken down into a collection of 3D shapes
5	To design a digital model by combining 3D objects
6	To develop and improve a digital 3D model

Year 6 – Summer 2 (Sensing)

Session no.	Objective
1	To create a program to run on a controllable device
2	To explain that selection can control the flow of a program
3	To update a variable with a user input
4	To use an conditional statement to compare a variable to a value
5	To design a project that uses inputs and outputs on a controllable device
6	To develop a program to use inputs and outputs on a controllable device