Learning objectives, knowledge and skills

Advent		Lent		Pentecost	
4.1 Computing systems and networks – The Internet Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	**4.2 Creating media - Audio production** Capturing and editing audio to produce a podcast, ensuring that copyright is considered.	**4.3 Programming A – Repetition in shapes** Using a text-based programming language to explore count-controlled loops when drawing shapes.	**4.4 Data and information – Data logging** Recognising how and why data is collected over time, before using data loggers to carry out an investigation.	**4.5 Creating media – Photo editing** Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled	**4.6 Programming B – Repetition in games** Using a block-based programming language to explore count-controlled and infinite loops when creating a game.

4.1 Computing systems and networks – The Internet

1. **To describe how networks physically connect to other networks**
   - I can demonstrate how information is shared across the internet
   - I can describe the internet as a network of networks
   - I can discuss why a network needs protecting
2. **To recognise how networked devices make up the internet**
   - I can describe networked devices and how they connect
   - I can explain that the internet is used to provide many services
   - I can recognise that the World Wide Web contains websites and web pages
3. **To outline how websites can be shared via the World Wide Web (WWW)**
   - I can describe how to access websites on the WWW
   - I can describe where websites are stored when uploaded to the WWW
   - I can explain the types of media that can be shared on the WWW
4. **To describe how content can be added and accessed on the World Wide Web**
   - I can explain that internet services can be used to create content online
   - I can explain what media can be found on websites
   - I can recognise that I can add content to the WWW
5. **To recognise how the content of the WWW is created by people**
   - I can explain that there are rules to protect content
   - I can explain that websites and their content are created by people
   - I can suggest who owns the content on websites
6. **To evaluate the consequences of unreliable content**
   - I can explain that not everything on the World Wide Web is true
   - I can explain why I need to think carefully before I share or reshare content
   - I can explain why some information I find online may not be honest, accurate, or legal

4.2 Creating media - Audio production

1. **To identify that sound can be recorded**
   - I can explain that the person who records the sound can say who is allowed to use it
   - I can identify the input and output devices used to record and play sound
   - I can use a computer to record audio
2. **To explain that audio recordings can be edited**
   - I can discuss what sounds can be added to a podcast
   - I can inspect the soundwave view to know where to trim my recording
   - I can re-record my voice to improve my recording
3. **To recognise the different parts of creating a podcast project**
   - I can explain how sounds can be combined to make a podcast more engaging
   - I can plan appropriate content for a podcast
   - I can save my project so the different parts remain editable
4. **To apply audio editing skills independently**
   - I can improve my voice recordings
   - I can record content following my plan
   - I can review the quality of my recordings
5. **To combine audio to enhance my podcast project**
   - I can arrange multiple sounds to create the effect I want
   - I can explain the difference between saving a project and exporting an audio file
   - I can open my project to continue working on it
6. **To evaluate the effective use of audio**
   - I can choose appropriate edits to improve my podcast
   - I can listen to an audio recording to identify its strengths
   - I can suggest improvements to an audio recording

4.3 Programming A – Repetition in shapes

1. **To identify that accuracy in programming is important**
   - I can create a code snippet for a given purpose
   - I can explain the effect of changing a value of a command
   - I can program a computer by typing commands
2. **To create a program in a text-based language**
   - I can test my algorithm in a text-based language
   - I can use a template to create a design for my program
   - I can write an algorithm to produce a given outcome
3. **-To explain what 'repeat' means**
   - I can identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves
   - I can identify patterns in a sequence
   - I can use a count-controlled loop to produce a given outcome
4. **-To modify a count-controlled loop to produce a given outcome**
   - I can choose which values to change in a loop
   - I can identify the effect of changing the number of times a task is repeated
   - I can predict the outcome of a program containing a count-controlled loop
5. **To decompose a task into small steps**
   - I can explain that a computer can repeatedly call a procedure
   - I can identify 'chunks' of actions in the real world
   - I can use a procedure in a program
6. **To create a program that uses count-controlled loops to produce a given outcome**
   - I can design a program that includes count-controlled loops
   - I can develop my program by debugging it
   - I can make use of my design to write a program

4.4 Data and information – Data logging

1. **To explain that data gathered over time can be used to answer questions**
   - I can choose a data set to answer a given question
   - I can identify data that can be gathered over time
   - I can suggest questions that can be answered using a given data set
2. **To use a digital device to collect data automatically**
   - I can explain what data can be collected using sensors
   - I can identify that data from sensors can be recorded
   - I can use data from a sensor to answer a given question
3. **-To explain that a data logger collects 'data points' from sensors over time"**
   - I can identify the intervals used to collect data
   - I can recognise that a data logger collects data at given points
   - I can talk about the data that I have captured
4. **-To recognise how a computer can help us analyse data**
   - I can explain that there are different ways to view data
   - I can sort data to find information
   - I can view data at different levels of detail
5. **To identify the data needed to answer questions**
   - I can plan how to collect data using a data logger
   - I can propose a question that can be answered using logged data
   - I can use a data logger to collect data
6. **To use data from sensors to answer questions**
   - I can draw conclusions from the data that I have collected
   - I can explain the benefits of using a data logger
   - I can interpret data that has been collected using a data logger"

4.5 Creating media – Photo editing

1. **To explain that the composition of digital images can be changed**
   - I can explain why I might crop an image
   - I can improve an image by rotating it
   - I can use photo editing software to crop an image
2. **To explain that colours can be changed in digital images**
   - I can experiment with different colour effects
   - I can explain that different colour effects make you think and feel different things
   - I can explain why I chose certain colour effects
3. **To explain how cloning can be used in photo editing**
   - I can add to the composition of an image by cloning
   - I can identify how a photo edit can be improved
   - I can remove parts of an image using cloning
4. **To explain that images can be combined**
   - I can experiment with tools to select and copy part of an image
   - I can explain why photos might be edited
   - I can use a range of tools to copy between images
5. **To combine images for a purpose**
   - I can choose suitable images for my project
   - I can create a project that is a combination of other images
   - I can describe the image I want to create
6. **To evaluate how changes can improve an image**
   - I can combine text and my image to complete the project
   - I can review images against a given criteria
   - I can use feedback to guide making changes

4.6 Programming B – Repetition in games

1. **To develop the use of count-controlled loops in a different programming environment**
   - I can list an everyday task as a set of instructions including repetition
   - I can modify a snippet of code to create a given outcome
   - I can predict the outcome of a snippet of code
2. **To explain that in programming there are infinite loops and count-controlled loops**
   - I can choose when to use a count-controlled and an infinite loop
   - I can modify loops to produce a given outcome
   - I can recognise that some programming languages enable more than one process to be run at once
3. **To develop a design that includes two or more loops which run at the same time**
   - I can choose which action will be repeated for each object
   - I can evaluate the effectiveness of the repeated sequences used in my program
   - I can explain what the outcome of the repeated action should be
4. **To modify an infinite loop in a given program**
   - I can explain the effect of my changes
   - I can identify which parts of a loop can be changed
   - I can re-use existing code snippets on new sprites
5. **To design a project that includes repetition**
   - I can develop my own design explaining what my project will do
   - I can evaluate the use of repetition in a project
   - I can select key parts of a given project to use in my own design
6. **To create a project that includes repetition**
   - I can build a program that follows my design
   - I can evaluate the steps I followed when building my project
   - I can refine the algorithm in my design

#BTK and Links with other subjects

		Key Vocabulary			