Computing
Skills and progression Ladders Year 2 - 12 lessons per term approx.

Learning objectives and skills

Advent		Lent		Pentecost	
We are astronauts **Programming on screen**	**We are games testers** **Exploring how computer games work**	**We are photographers** **Taking better photos**	**We are researchers** **Researching a topic**	**We are detectives** **Collecting clues**	**We are zoologists** **Collecting data about bugs**
1. Plan instructions and try them out. • Children can plan ahead. **2. Work out how to get from the Earth to the Moon – and then on to Mars!** • Children can plan ahead. **3. Work with Scratch.** • Control a device, on and off screen, making predictions about the effect their programming will have • Use a range of tools in a paint package / image manipulation software to create / modify a picture to communicate an idea. • Generate their own work, (with help where appropriate with multimedia) combining text, graphics and sound. Save and retrieve and edit their work. **4. Use Scratch to program your spaceship.** • Control a device, on and off screen, making predictions about the effect their programming will have **5. Write a program in Scratch. Debug it.** • Control a device, on and off screen, making predictions about the effect their programming will have **6. Move your sprite from the Earth to the Moon – and then on to Mars!** • Control a device, on and off screen, making predictions about the effect their programming will have • Generate their own work, (with help where appropriate with multimedia) combining text, graphics and sound. Save and retrieve and edit their work.	**1. Find out how the addition game works.** • Children are able to play an adventure game and use a simple simulation, making choices and observing the results. • Use websites and demonstrate an awareness of how to manage their journey around them (e.g. using the back/forward button, hyperlinks) **2. Find out how the fish game works.** • Children are able to play an adventure game and use a simple simulation, making choices and observing the results. • Use websites and demonstrate an awareness of how to manage their journey around them (e.g. using the back/forward button, hyperlinks) **3. Find out how the tennis game works.** • Children are able to play an adventure game and use a simple simulation, making choices and observing the results. • Use websites and demonstrate an awareness of how to manage their journey around them (e.g. using the back/forward button, hyperlinks) **4. Find out how the duck shoot game works.** • Children are able to play an adventure game and use a simple simulation, making choices and observing the results. • Use websites and demonstrate an awareness of how to manage their journey around them (e.g. using the back/forward button, hyperlinks)	**1. Look at photos and talk about what makes a good photo.** **2. Learn about a camera.** • Show an awareness of a range of inputs to a computer (IWB, mouse touch screen, microphone, keyboard, etc) **3. Take photos on your chosen theme.** • Show an awareness of a range of inputs to a computer (IWB, mouse touch screen, microphone, keyboard, etc) **4. Use Picasa to organise your photos.** • Begin to show an awareness that computers can be linked to share resources **5. Edit your photos.** • Use a range of tools in a paint package / image manipulation software to create / modify a picture to communicate an idea. **6. Pick your best photos for the portfolio.** • Generate their own work, (with help where appropriate with multimedia) combining text, graphics and sound. Save and retrieve and edit their work.	**1. Write questions in a mind map.** **2. Add information to your mind map.** **3. Use Google to search for information.** • Children use a search engine to find specific relevant information to use in a presentation for a topic. • Use websites and demonstrate an awareness of how to manage their journey around them (e.g. using the back/forward button, hyperlinks) **4. Use other search engines and Simple Wikipedia to search for information.** • Children use a search engine to find specific relevant information to use in a presentation for a topic. • Use websites and demonstrate an awareness of how to manage their journey around them (e.g. using the back/forward button, hyperlinks) **5. Create a presentation.** • Children use a search engine to find specific relevant information to use in a presentation for a topic. • Generate their own work, (with help where appropriate with multimedia) combining text, graphics and sound. Save and retrieve and edit their work. • They save and retrieve their work. **6. Give your presentation to the class.** • They save and retrieve their work. • Begin to show an awareness that computers can be linked to share resources	**1. Read and reply to an email.** • Work collaboratively by email to share and request information of another class or story character. • Begin to show an awareness that computers can be linked to share resources **2. Work with email attachments.** • Work collaboratively by email to share and request information of another class or story character. • Begin to show an awareness that computers can be linked to share resources • Generate their own work, (with help where appropriate with multimedia) combining text, graphics and sound. Save and retrieve and edit their work. **3. Write and send an email.** • Work collaboratively by email to share and request information of another class or story character. • Begin to show an awareness that computers can be linked to share resources **4. Organise the fact file records.** • Generate their own work, (with help where appropriate with multimedia) combining text, graphics and sound. Save and retrieve and edit their work. **5. Set out your evidence in a class email.** • Begin to show an awareness that computers can be linked to share resources **6. Review what you have learned about email safety.** • Begin to show an awareness that computers can be linked to share resources	**1. Talk about bugs and get ready for your bug hunt!** **2. Hunt for bugs and record what you find.** **3. Edit and organise your bug photos.** • Show an awareness of a range of inputs to a computer (IWB, mouse touch screen, microphone, keyboard, etc) • Use a range of tools in a paint package / image manipulation software to create / modify a picture to communicate an idea. **4. Use your bug data to create a chart.** • Use a graphing package to collect, organise and classify data, selecting appropriate tools to create a graph and answer questions. • They save, retrieve and edit their work. **5. Add bug information using maps.** • Enter information into a simple branching database, database or word processor and use it to answer questions. • They save, retrieve and edit their work. **6. Present your results and discuss them.** • Generate their own work, (with help where appropriate with multimedia) combining text, graphics and sound. Save and retrieve and edit their work.

	5. Look at complex games. • Children are able to play an adventure game and use a simple simulation, making choices and observing the results. **6. Work out the rules in each other's games.** • Children are able to play an adventure game and use a simple simulation, making choices and observing the results. • Their conversation shows they understand that computers are good at replicating real life events and allowing them to explore contexts • Show an awareness of a range of inputs to a computer (IWB, mouse touch screen, microphone, keyboard, etc)				

#BTK and Links with other subjects

History – History of transport Cross Curricular writing	Literacy - Explanations	RE – God's world – creation.	Science- Animals and habitats History – Research Fire of London	**PRSHE- online safety**	Science- Animals and habitats Numeracy- presenting data

Key Vocabulary

Algorithm instructions Predict problem program robot Scratch sprite	algorithm Predict rules Scratch test	camera image Picasa pixel portfolio theme	Google mind map presentation Research search search engine	address attachment database evidence Email Fact File Header safety	chart classification key data database photograph tally chart tick chart

	I can
Text and Multimedia	• Generate their own work, (with help where appropriate with multimedia) combining text, graphics and sound. Save and retrieve and edit their work.
Digital Images (Photos, paint, animation)	• Use a range of tools in a paint package / image manipulation software to create / modify a picture to communicate an idea. • Create a simple animation to tell a story.
Sound and music (inc sound recorders)	• Compose music from icons. • Produce a simple presentation incorporating sounds the children have captured, or created.
Electronic Communication	• Work collaboratively by email to share and request information of another class or story character.
Research and E Safety	• Children use a search engine to find specific relevant information to use in a presentation for a topic. • They save and retrieve their work.
Control (algorithms)	• Control a device, on and off screen, making predictions about the effect their programming will have. • Children can plan ahead.
Handling information (databases and graphs)	• Use a graphing package to collect, organise and classify data, selecting appropriate tools to create a graph and answer questions. • Enter information into a simple branching database, database or word processor and use it to answer questions.

	I can
	• They save, retrieve and edit their work.
Modelling and simulations (spreadsheets, adventure games and simulations)	• Children are able to play an adventure game and use a simple simulation, making choices and observing the results. • Their conversation shows they understand that computers are good at replicating real life events and allowing them to explore contexts
Data logging (science and maths)	•
Understanding Technologies (individual technologies)	• Show an awareness of a range of inputs to a computer (IWB, mouse touch screen, microphone, keyboard, etc)
Understanding Technologies (networks)	• Begin to show an awareness that computers can be linked to share resources
Understanding Technologies (the internet)	• Use websites and demonstrate an awareness of how to manage their journey around them (e.g. using the back/forward button, hyperlinks)