

# **The Priestley Progress Path**

## **Computing**



**Placing learning at the heart of everything we do.**

## ***Intent***

### ***Raising Aspiration, Realising Ambition, Stimulating Curiosity.***

*At Priestley Primary School, the computing curriculum is designed to immerse children into technology with a vision of raising pupil aspiration, realising ambition, and stimulating curiosity while providing a wide range of experiences which can be applied across the curriculum. The progressive sessions place learning at the heart of everything we do and allow for a broad, deep awareness of computing and how it relates to children's lives. It offers a breadth of opportunities for consolidation, challenge and variety. This allows children to use the basic principles and concepts of computer science with the aim of them developing analytical problem-solving skills and learning to evaluate and apply information technology. It also enables them to become conscientious, knowledgeable, confident and imaginative users of information technology.*

*In order to encourage our children to achieve the highest knowledge and understanding of the computing curriculum, we use our learning character 'Spikey' to model key traits which support learning. Spikey is a key member of the school's learning community. Pupils follow our 'Priestley Values' to help us all to learn like Spikey through:*

*Having Respect for All, Giving Everything a Go, Cooperating, Taking Responsibility, Sharing Great Ideas, Staying Focused and Thinking Things Through.*

*Because of these values, we are able to promote positive attitudes to learning which reflect the values and skills needed to encourage responsibility for learning and future success. Children leave the school Priestley and Proud with a sense of belonging, to a community where they have the skills to make decisions, self-evaluate, make connections, and become lifelong learners with the confidence to explore life in modern Britain.*

## ***Implementation***

### ***Placing learning at the heart of everything we do.***

*To support our commitment of developing each child as a whole, at Priestley Primary School, we have developed a Priestley Pathway of tailored learning intentions aligned to the national curriculum. Using the Twinkl 'Plan it' scheme, we will follow a progressive learning process from Year 1 to Year 6. Each lesson contains revision, analysis and problem-solving. Through the sequence of lessons, we intend to inspire pupils to develop a love of the digital world and see its place in their future. The aim for each session is to help children to build on previous knowledge as well as introducing new skills and challenges. In KS1, the focus is on developing the use of algorithms, programming and how technology can be used safely and purposefully. In KS2, lessons still focus on algorithms, programming and coding but in a more complex way and for different purposes. Children also develop their knowledge of computer networks, internet services and the safe and purposeful use of the internet and technology. Data Handling is featured more heavily in UKS2 with skills learnt through KS1 and LKS2 which support the learning of data presentation and handling as the child progresses.*

*To embed 'learn like Spikey' into the computing curriculum, we will ensure that links are made to each trait to guide the children through life with a deep understanding of how to appropriately use technology. The children need to, first and foremost, show a profound 'Respect for All'. This respect encompasses the opinions and behaviours of others as well the various environments in which they find themselves in. Through exploring online behaviours and citizenship, the children will develop a deep understanding of how to be safe online and how to be a positive internet user. The children are consistently encouraged to ensure they always: 'Think Things Through' – linking what they know and taking logical actions to solve problems. 'Share Great Ideas' – expressing their experiences and knowledge of technology to inspire others 'Cooperate' – work collaboratively to reach a shared goal of presentation and problem solving 'Give it a Go' – show perseverance when tasks provide a level of challenge 'Stay Focused' – manage distractions and commit to learning new skills 'Take Responsibility' – Understand and apply knowledge of how to be a good online citizen and know when and how to report problems that they encounter online.*

## ***Impact***

### ***Priestley and Proud***

*Throughout the Learning sequence in computing, we will place learning at the heart of everything we do by providing valuable learning experiences which will ensure that the children enthusiastically partake in computing across the school. Teachers will follow the 'Priestley Pathway' to teach, assess and creatively gather evidence in a range of formats across a variety of subject areas. Children will use subject specific vocabulary accurately, and progress in their technical skills. The outcome of their learning will demonstrate a confidence in using different hardware and software. Children will see the digital world as part of their world, extending beyond school, and understand that they have choices to make. They will be confident and respectful digital citizens going on to lead happy and healthy digital lives.*



## ***Working Technologically.***

**Multimedia**



**Data Handling**



**Technology in our lives**



**Programming**



**Online Safety**





### Technology in our lives

1. tell you about technology that is used at home and in school.
2. operate simple equipment.
3. use a safe part of the Internet to play and learn.

### Data Handling

1. tell you about different kinds of information such as pictures, video, text and sound.

### Programming

1. make a floor robot move.
2. use simple software to make something happen.
3. make choices about the buttons and icons I press, touch or click on.

### Online Safety

1. ask an adult when I want to use the Internet.
2. tell an adult when something worrying or unexpected happens while using the Internet.
3. be kind to my friends.
4. talk about the amount of time I spend using a computer / tablet / game device.
5. careful with technology devices.

### Multimedia

1. move objects on a screen.
2. create shapes and text on a screen.
3. use technology to show my learning.

## EYFS Computer Whiz's

Will be able to:

1. Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.
2. Explain the reasons for rules, know right from wrong and try to behave

**Personal Social & Emotional**  
Managing Self

1. Set and work towards simple goals, being able to wait for what they want and control their immediate impulses when appropriate.
2. Give focused attention to what the teacher says, responding appropriately even when engaged in activity, and show an ability to follow instructions involving several ideas or actions.

**Personal Social & Emotional**  
Self-Regulation

1. Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions.
2. Make comments about what they have heard and ask questions to clarify their understanding.
3. Hold conversation when engaged in back-and-forth exchanges with their teacher and peers.

**Communication & Language**  
Listening, Communication & Attention

1. Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.

**Communication & Language**  
Speaking

1. Demonstrate understanding of what has been read to them by retelling stories and narratives using their own words and recently introduced vocabulary.
2. Use and understand recently introduced vocabulary during discussions about stories, non-fiction, rhymes and poems and during role-play.

**Literacy**  
Comprehension



## Multimedia



1. *be creative with different technology tools.*
2. *use technology to create and present my ideas.*
3. *use the keyboard or a word bank on my device to enter text.*
4. *save information in a special place and retrieve it again.*



## Data Handling

1. *talk about the different ways in which information can be shown.*
2. *use technology to collect information, including photos, video and sound.*
3. *sort different kinds of information and present it to others.*
4. *add information to a pictograph and talk to you about what I have found out.*



## Year One Computer Whiz's

Will be able to:

## Programming

1. *give instructions to my friend and follow their instructions to move around.*
2. *describe what happens when I press buttons on a robot.*
3. *press the buttons in the correct order to make my robot do what I want.*
4. *describe what actions I will need to do to make something happen and begin to use the word algorithm.*
5. *begin to predict what will happen for a short sequence of instructions.*
6. *begin to use software/apps to create movement and patterns on a screen.*
7. *use the word debug when I correct mistakes when I program.*

## Technology in our lives

1. *recognise the ways we use technology in our classroom.*
2. *recognise ways that technology is used in my home and community.*
3. *use links to websites to find information.*
4. *begin to identify some of the benefits of using technology.*



## Online Safety

1. *keep my password private.*
2. *tell you what personal information is.*
3. *tell an adult when I see something unexpected or worrying online.*
4. *talk about why it's important to be kind and polite.*
5. *recognise an age-appropriate website.*
6. *agree and follow sensible e-Safety rules.*





## Multimedia

1. use technology to organise and present my ideas in different ways.
2. use the keyboard on my device to add, delete and space text for others to read.
3. tell you about an online tool that will help me to share my ideas with other people.
4. save and open files on the device I use.



## Data Handling

1. know about the different ways I use technology to collect information, including a camera, microscope or sound recorder.
2. make and save a chart or graph using the data I collect.
3. talk about the data that is shown in my chart or graph.
4. start to understand a branching database.
5. tell you what kind of information I could use to help me investigate a question.



## Technology in our lives

1. tell you why I use technology in the classroom.
2. tell you why I use technology in my home and community.
3. start to understand that other people have created the information I use.
4. identify benefits of using technology including finding information, creating and communicating.
5. talk about the differences between the Internet and things in the physical world



## Year Two Computer Whiz's

Will be able to:

## Online Safety

1. explain why I need to keep my password and personal information private.
2. describe the things that happen online that I must tell an adult about.
3. talk about why I should go online for a short amount of time.
4. talk about why it is important to be kind and polite online and in real life.
5. know that not everyone is who they say they are on the Internet.



## Programming

1. give instructions to my friend (using forward, backward and turn) and physically follow their instructions.
2. tell you the order I need to do things to make something happen and talk about this as an algorithm.
3. program a robot or software to do a particular task.
4. look at my friend's program and tell you what will happen.
5. use programming software to make objects move.
6. watch a program execute and spot where it goes wrong so that I can debug it.



# KS1 Vocabulary



## E Safety

*Rules Online Private information Email Appropriate/inappropriate sites  
Cyber-bullying Digital footprint Keyword searching*

## Programming

*Online Private information Email Forward Backward  
Right-angle turn Algorithm Sequence Debug Predict*

## Multimedia

*Videos Camera stills Sounds Image bank Word bank Space bar  
Paint effects Templates Animation Document Index finger typing  
Enter/return Caps lock Backspace*

## Technology in our lives

*Purpose Online tools Communicate Information sources Communication  
Purposes Website content*

## Data Handling

*Photographs Video Sound Data Pictogram  
Digitally Capturing moments Magnified images Questions  
Data collection Graphs Charts Save Retrieve*



## Multimedia



1. create different effects with different technology tools.
2. combine a mixture of text, graphics and sound to share my ideas and learning.
3. use appropriate keyboard commands to amend text on my device, including making use of a spellchecker.
4. evaluate my work and improve its effectiveness.
5. use an appropriate tool to share my work online.



## Data Handling



1. talk about the different ways data can be organised.
2. search a ready-made database to answer questions.
3. collect data help me answer a question.
4. add to a database.
5. make a branching database.
6. use a data logger to monitor changes and can talk about the information collected.



## Technology in our lives

1. save and retrieve work on the Internet, the school network or my own device.
2. talk about the parts of a computer.
3. tell you ways to communicate with others online.
4. describe the World Wide Web as the part of the Internet that contains websites.
5. use search tools to find
6. and use an appropriate website.
7. think about whether I can use images that I find online in my own work.



## Year Three Computer whiz's

Will be able to:

### Online Safety

1. talk about what makes a secure password and why they are important.
2. protect my personal information when I do different things online.
3. use the safety features of websites as well as reporting concerns to an adult.
4. recognise websites and games appropriate for my age.
5. make good choices about how long I spend online.
6. ask an adult before downloading files and games from the Internet.
7. post positive comments online.



## Programming

1. break an open-ended problem up into smaller parts.
2. put programming commands into a sequence to achieve a specific outcome.
3. keep testing my program and recognise when I need to debug it.
4. use repeat commands.
5. describe the algorithm I will need for a simple task.
6. detect a problem in an algorithm which could result in unsuccessful programming.





## Multimedia

1. use photos, video and sound to create an atmosphere when presenting to different audiences.
2. confidently explore new media to extend what I can achieve.
3. change the appearance of text to increase its effectiveness.
4. create, modify and present documents for a particular purpose.
5. use a keyboard confidently and make use of a spellchecker to write and review my work.
6. use an appropriate tool to share my work and collaborate online.
7. give constructive feedback to my friends to help them improve their work and refine my own work.



## Data Handling

1. organise data in different ways.
2. collect data and identify where it could be inaccurate.
3. plan, create and search a database to answer questions.
4. choose the best way to present data to my friends.
5. use a data logger to record and share my readings with my friends.



## Programming

1. use logical thinking to solve an open-ended problem by breaking it up into smaller parts.
2. use an efficient procedure to simplify a program.
3. use a sensor to detect a change which can select an action within my program.
4. know that I need to keep testing my program while I am putting it together.
5. use a variety of tools to create a program.
6. recognise an error in a program and debug it.
7. recognise that an algorithm will help me to sequence more complex programs.
8. recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology.



## Technology in our lives

1. tell you whether a resource I am using is on the Internet, the school network or my own device.
2. identify key words to use when searching safely on the World Wide Web.
3. think about the reliability of information I read on the World Wide Web.
4. tell you how to check who owns photos, text and clipart.
5. create a hyperlink to a resource on the World Wide Web.



## Year Four Computer Whiz's

Will be able to:

## Online Safety

1. choose a secure password when I am using a website.
2. talk about the ways I can protect myself and my friends from harm online.
3. use the safety features of websites as well as reporting concerns to an adult.
4. know that anything I post online can be seen by others.
5. choose websites and games that are appropriate for my age.
6. help my friends make good choices about the time they spend online.
7. talk about why I need to ask a trusted adult before downloading files and games from the Internet.
8. comment positively and respectfully online.



# Lower KS2 Vocabulary



## E Safety

*E-safety rules*

*Secure passwords*

*Report abuse button*

*Gaming*

*Blogs*

## Programming

*Sequence instructions*

*Sequence debugging*

*Test + improve*

*Logo commands*

*Sequence programming*

*Multimedia*

*Type + edit logo commands*

*Sensors*

*Open-ended problems*

*Bugs in programs*

*Complex programming*

## Technology in our lives

*School network*

*Devices*

*Computer parts*

*Collaborate*

*Different networks*

*Appropriate online communication*

*Search tools*

*Appropriate websites*

*Owner*

*Information collection*

*Reliability*

*Owners*

## Data Handling

*Questioning*

*Database*

*Construct*

*Contribute*

*Recording data*

*Data logger*

*Present data*

*Database creation*

*Database searches*

*Inaccurate data*





## Multimedia

1. use text, photo, sound and video editing tools to refine my work.
2. use the skills I have already developed to create content using unfamiliar technology.
3. select, use and combine the appropriate technology tools to create effects that will have an impact on others.
4. select an appropriate online or offline tool to create and share ideas.
5. review and improve my own work and support others to improve their work.



## Data Handling

1. use a spreadsheet and database to collect and record data.
2. choose an appropriate tool to help me collect data.
3. present data in an appropriate way.
4. search a database using different operators to refine my search.
5. talk about mistakes in data and suggest how it could be checked.



## Technology in our lives

1. describe different parts of the Internet.
2. use different online communication tools for different purposes.
3. use a search engine to find appropriate information and check its reliability.
4. recognise and evaluate different types of information I find on the World Wide Web.
5. describe the different parts of a webpage.
6. find out who the information on a webpage belongs to.



## Year Five Computer Whiz's

Will be able to:

## Online Safety

1. protect my password and other personal information.
2. explain why I need to protect myself and my friends and the best ways to do this, including reporting concerns to an adult.
3. know that anything I post online can be seen, used and may affect others.
4. talk about the dangers of spending too long online or playing a game.
5. explain the importance of communicating kindly and respectfully.
6. discuss the importance of choosing an age-appropriate website or game.
7. explain why I need to protect my computer or device from harm.
8. know which resources on the Internet I can download and use.



## Programming

1. decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program.
2. refine a procedure using repeat commands to improve a program.
3. use a variable to increase programming possibilities.
4. change an input to a program to achieve a different output.
5. use 'if' and 'then' commands to select an action.
6. talk about how a computer model can provide information about a physical system.
7. use logical reasoning to detect and debug mistakes in a program.
8. use logical thinking, imagination and creativity
9. to extend a program.





## Multimedia



1. talk about audience, atmosphere and structure when planning a particular outcome.
2. confidently identify the potential of unfamiliar technology to increase my creativity.
3. combine a range of media, recognising the contribution of each to achieve a particular outcome.
4. tell you why I select a particular online tool for a specific purpose.
5. be digitally discerning when evaluating the effectiveness of my own work and the work of others.

## Data Handling

1. plan the process needed to investigate the world around me.
2. select the most effective tool to collect data for my investigation.
3. check the data I collect for accuracy and plausibility.
4. interpret the data I collect.
5. present the data I collect in an appropriate way.
6. use the skills I have developed to interrogate a database.



## Technology in our lives

1. tell you the Internet services I need to use for different purposes.
2. describe how information is transported on the Internet.
3. select an appropriate tool to communicate and collaborate online.
4. talk about the way search results are selected and ranked.
5. check the reliability of a website.
6. tell you about copyright and acknowledge the sources of information that I find online.



## Year Six Computer Whiz's

Will be able to:

## Online Safety

1. protect my password and other personal information.
2. explain the consequences of sharing too much about myself online.
3. support my friends to protect themselves and make good choices online, including reporting concerns to an adult.
4. explain the consequences of spending too much time online or on a game.
5. explain the consequences to myself and others of not communicating kindly and respectfully.
6. protect my computer or device from harm on the Internet.



## Programming

1. deconstruct a problem into smaller steps, recognising similarities to solutions used before.
2. explain and program each of the steps in my algorithm.
3. evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm.
4. recognise when I need to use a variable to achieve a required output.
5. use a variable and operators to stop a program.
6. use different inputs (including sensors) to control a device or onscreen action and predict what will happen.
7. use logical reasoning to detect and correct errors in a algorithms and programs.

# Upper KS2 Vocabulary



## E Safety

Responsible online communication

Informed choices

Virus threats

Messaging

## Programming

Explore procedures

Refine procedures

Variable

Hardware + software control

Change inputs

Different outputs

Articulate solutions

Commands

Predicting outputs

Link errors

Sensors

Plan, program, test & review a program

Program writing

Control mimics + devices

Measure input Create variables



## Multimedia

Online sharing

Multimedia effects

Multimedia modification

Transitions

Storing

Hyperlinks

Editing tools

Refining

Online sharing

Information collection

HTML code

Appropriate online tools

Audience

Atmosphere

Structure

Copyright

## Technology in our lives

Computing devices

Internet parts

Collaboration

Responsibility

Searching strategies

Webpages

Information movement

Connecting devices



Different audiences

Research strategies

Search result rankings

Acknowledge resources

## Data Handling

Spreadsheets

Complex searches (and/or: </>)

Problem solving

Present answers

Interpret

Analyse information

Question data

Generate

Process

Store

Interrogate

Investigations

Present information Plausibility

Appropriate data tool