



# How we teach COMPUTING at Lozells School

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## Our vision:

*To teach and nurture the children of our community is a privilege.  
Our families and children are ambitious for themselves and supportive of one another in a way that simply defines 'community'.*


*Our vision is for all our children to know that they are valued, can make a difference and can achieve great things through hard work and perseverance.*

## Our ethos is:

*Everyone is entitled to be the best they can be.  
We will enable children to learn, challenge them to think hard and guide their growth as young people.*

*They are their own future, their family's future, our future.  
Our children have differences, character and voices and we encourage this!*

# 1. SUBJECT VISION STATEMENT

A large blue triangle pointing downwards, located to the left of the text box.

At Lozells Primary School, it is our **intent** that we develop technological literate children, using a range of devices and applications to enhance, motivate and support their learning in innovative ways. Lozells children will become responsible digital citizens who appreciate the benefits of using technology to connect, create and develop new ideas.

Whilst the children learn to understand the advantages of computer and technology in the changing world, they will also be made aware of the disadvantages associated with online experiences and develop into respectful, responsible and confident users of technology and can apply a range of measures to keep themselves and others safe. Our aim at Lozells is to provide a computing curriculum that broad and balanced and allows pupils to develop a deep knowledge of computational ideas. In addition, pupils will have opportunities to apply skills in various digital contexts both discreetly, as well as applying and developing what they have learnt across wider learning in the curriculum.

## 2. BUILDING ON THE SCHOOL CURRICULUM DRIVERS

### Healthy Advocates

Our children understand what it means to be a healthy, fit and happy both physically and mentally and will value this; taking positive action for themselves and supporting their peers with this.

### Respectful Citizens

Our children have respect for themselves and the voice, thoughts, feelings and beliefs of others; respecting the diversity our wonderful world has. Our children will gain an understanding of their emotions and have skills to resolve disagreements. Our children will be responsible citizens and know how to speak up against prejudice or injustice.

### Confident Communicators

Our children communicate their thoughts, ideas and opinions in a clear and confident manner through speech, writing and the safe use of online platforms. Our children are bold enough to say what is fair, make mistakes and unravel new learning through discussion with their peers. Our children understand how to listen and facilitate a respectful space for others to communicate also.

### Aspirational Learners

Our children have self-belief and high expectations of themselves; setting goals and working hard to achieve them both in school and at home. Our children know that mistakes = learning and understand that learning should be challenging. Our children are passionate about life-long learning and understand that great achievement starts with aiming high and believing we will.

### Knowledgeable Scholars

Our children have gained and understood a range of important foundational knowledge across all subjects which they will be able to build future learning upon. Our children strive to learn more, know more and put their knowledge into practice. Our children are curious about sources of knowledge and understand bias, perspective and influence. Our children have explored how knowledge has changed the world and how great inventions have come from a place of expertise.

### Successful Achievers

Our children understand the learning process, reflect on their own learning and are self-motivated to learn more and work to remember more. Our children work hard to be the best that they can be, have bold ambitions and overcome challenges through perseverance and determination. Our children take pride in their personal accomplishments and celebrate the achievements of their peers,

With online safety being more important than ever, our Computing Curriculum will enable pupils to feel safe, happy healthy citizens online and to keep themselves and others safe.

Using a range of devices on a range of platforms, the pupils are taught to be respectful and responsible citizens for the technology that they use. They will also engage in ways to be responsible citizens off and online.

Pupils will be given the opportunity throughout the computing curriculum to communicate their ideas and what they know, what to know and find out. They will also have the opportunity to share their knowledge by capturing this in the end of unit Knowledge Catchers and Pupil Books studies which will allow them to communicate what they have learnt in different ways, verbally and practically.

The aim of the curriculum is to improve on the pupils individual skills and attributes in each session and year group. Making mistakes and debugging is integral to learning and growth and this should be encouraged within each domain of the Computing curriculum. We also aim to ensure that children handle challenges in different ways and can be the learner and the teacher too.

The National Curriculum aims is to allow children to engage in Computer Science, Information Technology and Digital Literacy. The Lozells curriculum allows pupils to both improve and demonstrate their own knowledge within the different content domains.

The Lozells Computing Curriculum allows for all pupils to be Successful Achievers by allowing them to work at their own pace, ability and skill set. There is room for independent and collaborative learning as well as developing vocabulary and speaking and listening skills.

# 3. MEETING THE AIMS OF THE NATIONAL CURRICULUM

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems.

The national curriculum has six objectives for KS1 and seven objectives for KS2. These objectives can be split into three distinct strands; **computer science**, **information technology** and **digital literacy**.

A useful analogy to describe these three strands:

**Computer Science** (CS) is the '**foundation**' of the subject (i.e. the underlying principles that make up the subject).

**Information Technology** (IT) is how you '**apply** this knowledge' and understanding to purposefully create and make things.

**Digital Literacy** (DL) is about considering the '**implications**' of how you going about doing this.

A successful Computing curriculum will ensure a broad and balanced coverage of all of the above strands.

## The National Curriculum aims that all pupils in Key Stage 1 and 2

- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems.
- Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.
- Are responsible, competent, confident and creative users of information and communication technology.

Pupils in Key Stage 1 should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Pupils in Key Stage 2 should be taught to:

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.
- Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.
- Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.
- Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

## 4. INTENDED PROGRESSION THROUGH THE CURRICULUM

### EYFS

Although Computing is not explicitly mentioned in the New Early Years Foundation Stage Curriculum, there are plenty of opportunities for pupils to explore their technological world through appropriate experiences within their provision. Computational thinking has deep links with mathematics, Understanding the World, Literacy, Physical Development, Expressive Art and Design, Communication and Language and Personal, Social and Emotional Development.

Pupils should be taught to recognise that a range of technology are used for a range of purposes, select technology for a specific purpose as well as talking about their technological choices, being responsible and respectful citizens and using technology to create and a range of hardware and software.

### KEY STAGE 1

Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.

Create and debug simple programs

Use logical reasoning to predict the behaviour of simple programs

Use technology purposefully to create, organise, store, manipulate and retrieve digital content

Recognise common uses of information technology beyond school

Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies

### KEY STAGE 2

Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

Use sequence, selection, and repetition in programs; work with variables and various forms of input and output

Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration

Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact



| EYFS                                                                                                                                                                                                                                                                                                 | Year 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Year 2                                                                                                                                                                                                                                                                                | Year 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Year 4                                                                                                                                                                                                                                                                                    | Year 5                                                                                                                                                                                                                                                                                                                                                 | Year 6                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>To be able to understand what a computer keyboard is and recognising some letters and numbers.</p> <p>To know that a mouse can be used to click, drag and create simple drawings.</p> <p>To know that to use a computer you need to log in to it and then log out at the end of your session.</p> | <p>To know that "log in and log out" means to begin and end a connection with a computer.</p> <p>To know that a computer and mouse can be used to click, drag, fill and select and also add backgrounds, text, layers, shapes and clip art.</p> <p>To know that passwords are important for security.</p> <p>To know that when we create something on a computer it can be more easily saved and shared than a paper version.</p> <p>To know some of the simple graphic design features of a piece of online software.</p> | <p>To know the difference between a desktop and laptop computer.</p> <p>To know that people control technology.</p> <p>To know that buttons are a form of input that give a computer an instruction about what to do (output).</p> <p>To know that computers often work together.</p> | <p>To know what a tablet is and how it is different from a laptop/desktop computer.</p> <p>To understand what a network is and how a school network might be organised.</p> <p>To know that a server is central to a network and responds to requests made.</p> <p>To know how the internet uses networks to share files.</p> <p>To know that a router connects us to the internet.</p> <p>To know what a packet is and why it is important for website data transfer.</p> <p>To know the roles that inputs and outputs play on computers.</p> <p>To know what some of the different components inside a computer are e.g. CPU, RAM, hard drive, and how they work together.</p> | <p>To understand that software can be used collaboratively online to work as a team.</p> <p>To know what type of comments and suggestions on a collaborative document can be helpful.</p> <p>To know that you can use images, text, transitions and animation in presentation slides.</p> | <p>To know how search engines work.</p> <p>To understand that anyone can create a website and therefore we should take steps to check the validity of websites.</p> <p>To know that web crawlers are computer programs that crawl through the internet.</p> <p>To understand what copyright is.</p> <p>To know the difference between ROM and RAM.</p> | <p>To understand the importance of having a secure password and what "brute force hacking" is.</p> <p>To know that the first computers were created at Bletchley Park to crack the Enigma code to help the war effort in World War 2.</p> <p>To know about some of the historical figures that contributed to technological advances in computing.</p> <p>To understand what techniques are required to create a presentation using appropriate software.</p> |

## Progression of knowledge

## Programming

| EYFS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Year 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Year 2                                                                                                                                                                                                                                                                                                                             | Year 3                                                                                                                                                                                                                                                                               | Year 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Year 5                                                                                                                                                                                                                                                                                                  | Year 6                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>To know that being able to follow and give simple instructions is important in computing.</p> <p>To understand that it is important for instructions to be in the right order.</p> <p>To understand why a set of instructions may have gone wrong.</p> <p>To know that you can program a Bee-Bot with some simple commands.</p> <p>To understand that debugging means how to fix some simple programming errors.</p> <p>To understand that an algorithm is a set of clear and precise instructions.</p> | <p>To understand that an algorithm is when instructions are put in an exact order.</p> <p>To know that input devices get information into a computer and that output devices get information out of a computer.</p> <p>To understand that decomposition means breaking a problem into manageable chunks and that it is important in computing.</p> <p>To know that we call errors in an algorithm 'bugs' and fixing these 'debugging'.</p> <p>To understand the basic functions of a Bee-Bot.</p> <p>To know that you can use a camera/tablet to make simple videos.</p> <p>To know that algorithms move a bee-bot accurately to a chosen destination.</p> | <p>To understand what machine learning is and how that enables computers to make predictions.</p> <p>To know that loops in programming are where you set a certain instruction (or instructions) to be repeated multiple times.</p> <p>To know that abstraction is the removing of unnecessary detail to help solve a problem.</p> | <p>To know that Scratch is a programming language and some of its basic functions.</p> <p>To understand how to use loops to improve programming.</p> <p>To understand how decomposition is used in programming.</p> <p>To understand that you can remix and adapt existing code.</p> | <p>To understand that a variable is a value that can change (depending on conditions) and know that you can create them in Scratch.</p> <p>To know what a conditional statement is in programming.</p> <p>To understand that variables can help you to create a quiz on Scratch.</p> <p>To know that combining computational thinking skills (sequence, abstraction, decomposition etc) can help you to solve a problem.</p> <p>To understand that pattern recognition means identifying patterns to help them work out how the code works.</p> <p>To understand that algorithms can be used for a number of purposes e.g. animation, games design etc.</p> | <p>To know that a soundtrack is music for a film/video and that one way of composing these is on programming software.</p> <p>To understand that using loops can make the process of writing music simpler and more effective.</p> <p>To know how to adapt their code while performing their music.</p> | <p>To know that there are text-based programming languages such as Logo and Python.</p> <p>To know that nested loops are loops inside of loops.</p> <p>To understand the use of random numbers and remix Python code.</p> |



## Progression of knowledge

## Creating media

| EYFS | Year 1 | Year 2 | Year 3                                                                                                                                                                                                                                                    | Year 4                                                                                                                                                                                                                                                                                                                                       | Year 5 | Year 6                                                                                                                                                                                                                                                           |
|------|--------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N/A  | N/A    | N/A    | <p>To know that different types of camera shots can make my photos or videos look more effective.</p> <p>To know that I can edit photos and videos using film editing software.</p> <p>To understand that I can add transitions and text to my video.</p> | <p>To know some of the features of web design software.</p> <p>To know that a website is a collection of pages that are all connected.</p> <p>To know that websites usually have a homepage and subpages as well as clickable links to new pages, called hyperlinks.</p> <p>To know that websites should be informative and interactive.</p> | N/A    | <p>To know that radio plays are plays where the audience can only hear the action so sound effects are important.</p> <p>To know that sound clips can be recorded using sound recording software.</p> <p>To know that sound clips can be edited and trimmed.</p> |

## Progression of knowledge

## Data handling

| EYFS                                                                                                                                                                                                                                                | Year 1                                                                                                                                                                                                                                         | Year 2                                                                                                                                                                                                                                                                       | Year 3                                                                                                                                                                                                                                                                                  | Year 4 | Year 5                                                                                                                                                                                                                                                                                                                                                                                                                                 | Year 6                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>To know that sorting objects into various categories can help you locate information.</p> <p>To know that using yes/no questions to find an answer is a branching database.</p> <p>To know that a pictogram is a way of showing information.</p> | <p>To know how that charts and pictograms can be created using a computer.</p> <p>To understand that a branching database is a way of classifying a group of objects.</p> <p>To know that computers understand different types of 'input'.</p> | <p>To understand that you can enter simple data into a spreadsheet.</p> <p>To understand what steps you need to take to create an algorithm.</p> <p>To know what data to use to answer certain questions.</p> <p>To know that computers can be used to monitor supplies.</p> | <p>To know that a database is a collection of data stored in a logical, structured and orderly manner.</p> <p>To know that computer databases can be useful for sorting and filtering data.</p> <p>To know that different visual representations of data can be made on a computer.</p> | N/A    | <p>To know that Mars Rover is a motor vehicle that collects data from space by taking photos and examining samples of rock.</p> <p>To know what numbers using binary code look like and be able to identify how messages can be sent in this format.</p> <p>To understand that RAM is Random Access Memory and acts as the computer's working memory.</p> <p>To know what simple operations can be used to calculate bit patterns.</p> | <p>To know that data contained within barcodes and QR codes can be used by computers.</p> <p>To know that infrared waves are a way of transmitting data.</p> <p>To know that Radio Frequency Identification (RFID) is a more private way of transmitting data.</p> <p>To know that data is often encrypted so that even if it is stolen it is not useful to the thief.</p> |

| EYFS | Year 1                                                                                                                                                                                                                                                                                | Year 2                                                                                                                                                                                                                                                                                                                                                                                                             | Year 3                                                                                                                                                                                                                                                                                                                                                                                                       | Year 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Year 5                                                                                                                                                                                                                                                                                                                                                                                                                                              | Year 6                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N/A  | <p>Discuss what the internet is and how it can be used.</p> <p>Recognise that the internet may affect mood or emotions.</p> <p>Recognise how internet use can affect and upset other.</p> <p>Identify which information is appropriate to share and post online and which is not.</p> | <p>To understand the difference between online and offline.</p> <p>To understand what information I should not post online.</p> <p>To know what the techniques are for creating a strong password.</p> <p>To know that you should ask permission from others before sharing about them online and that they have the right to say 'no.'</p> <p>To understand that not everything I see or read online is true.</p> | <p>To know that not everything on the internet is true: people share facts, beliefs and opinions online.</p> <p>To understand that the internet can affect your moods and feelings.</p> <p>To know that privacy settings limit who can access your important personal information. Information, such as your name, age, gender etc.</p> <p>To know what social media is and that age restrictions apply.</p> | <p>Describe how to search over multiple platforms and are aware of the accuracy of the results presented.</p> <p>Describe some of the methods used to persuade people to buy online.</p> <p>Explain the difference between fact, opinion and belief and recognise these online.</p> <p>Explain what a bot is and give examples of different bots.</p> <p>Explain some positive and negative distractions of using technology and small strategies on how to reduce the amount of time spent on technology.</p> | <p>To know different ways we can communicate online.</p> <p>To understand how online information can be used to form judgements.</p> <p>To understand some ways to deal with online bullying.</p> <p>To know that apps require permission to access private information and that you can alter the permissions.</p> <p>To know where I can go for support if I am being bullied online or feel that my health is being affected by time online.</p> | <p>To know that a 'digital footprint' means the information that exists on the internet as a result of a person's online activity.</p> <p>To know what steps are required to capture bullying content as evidence.</p> <p>To understand that it is important to manage personal passwords effectively.</p> <p>To understand what it means to have a positive online reputation.</p> <p>To know some common online scams.</p> |

## **5. IMPLEMENTATION THROUGH KAPOW – EVIDENCE-BASED PRACTICE**

The Computing Curriculum ensures that pupils become digitally literate – able to use, express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

High quality computing should be both discrete with explicit computing lessons to teach the skills, and cross-curricular opportunities to transfer these skills. This is to enhance learning in other subject lessons and to demonstrate how these skills can be used in context. Pupils need to plan, analyse, create and evaluate digital content and they should have the opportunity to be the creators and not just the consumer of a range of digital platforms such as games, quizzes and word-processed content.

Computing will be taught following the foundation lesson cycle, every 3 weeks. Teachers will ensure that there is adaptation from the Kapow units to meet the needs of the group being taught and ensuring that there is adequate scaffold and challenge. Vocabulary is vital at Lozells and this is the same with the Computing Curriculum. Using the knowledge Organisers to discuss key concepts and ideas along with ensuring that the learning outcome and skills are shared with the pupils.



|               | Autumn 1<br>Unit 1                                                                                                                                                                | Autumn 2<br>Unit 2                                                                                                       | Spring 1<br>Unit 3                                                                                                                                       | Spring 2<br>Unit 4                                                                                                                            | Summer 1<br>Unit 5                                                                                                                                                            | Autumn 2<br>Unit 6                                                                                                       |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Year 1</b> | <b>Information Technology</b><br>Computing systems and networks<br><br><a href="#">Improving mouse skills</a><br>(3 lessons: 1-3 only)                                            | Skills Showcase<br><br>Rocket to the Moon<br>(3 or 4 lessons 1-3 (4 optional))                                           | <b>Computer Science</b><br>Programming 1<br><br><a href="#">Algorithms unplugged</a><br>(4 lessons: 1, 2, 4,5)<br><br>Online Safety - Safer Internet Day | <b>Digital Literacy</b><br>Creating media<br><br>Digital imagery<br><a href="#">(Option 2: Microsoft Office 365)</a><br>(3 lessons: 1-3 only) | <b>Computer Science</b><br>Programming 2<br><br>Bee-bot<br><a href="#">(Option 1: Bee-Bot)</a><br><a href="#">(Option 2: Virtual Bee-Bot)</a> (4 lessons: 1, 3, 4 and 5 only) | <b>Digital Literacy</b><br>Online safety<br><br><a href="#">Online safety Y1</a><br>(All 4 lessons)                      |
| <b>Year 2</b> | <b>Information Technology</b><br>Computing systems and networks 1<br><br><a href="#">What is a computer?</a><br>(3 lessons: 1, 2 and 5 )                                          | <b>Information Technology</b><br>Computing systems and networks 2<br><br>Word Processing<br>(3 Lessons 1, 2, 3)          | <b>Digital Literacy</b><br>Online safety<br><br>Online Safety - Safer Internet Day                                                                       | <b>Computer Science</b><br>Programming 1<br><br><a href="#">Algorithms and debugging</a><br>(4 lessons: 1, 2, 4, 5)                           | <b>Computer Science</b><br>Programming 2<br><br><a href="#">Scratch Jr</a><br>(4 lessons: 1, 2, 4 and 5 only)                                                                 | <b>Digital Literacy</b><br>Online safety<br><br><a href="#">Online safety Y2</a><br>(4 lessons: combine lessons 3 and 4) |
| <b>Year 3</b> | <b>Information Technology</b><br>Computing systems and networks 1<br><br>Networks and the internet<br><a href="#">(Option 2: Microsoft Office 365)</a><br>(3 lessons: 1, 3 and 5) | <b>Information Technology</b><br>Computing systems and networks 2<br><br><a href="#">Emailing</a><br>(3 Lessons 2, 3, 5) | <b>Digital Literacy</b><br>Online safety<br><br>Online Safety - Safer Internet Day                                                                       | <b>Information Technology</b><br>Creating media<br><br>Video trailers<br><a href="#">(Option 2: Using iPads)</a><br>(4 lessons: 1-4 only)     | <b>Computer Science</b><br>Programming<br><br><a href="#">Programming: Scratch</a><br>(4 lessons: 1, 2, 3, 5)                                                                 | <b>Digital Literacy</b><br>Online safety<br><br><a href="#">Online safety Y3</a><br>(All 4 lessons)                      |



|               | Autumn 1<br>Unit 1                                                                                                                                                       | Autumn 2<br>Unit 2                                                                                                                                | Spring 1<br>Unit 3                                                                                                                            | Spring 2<br>Unit 4                                                                                                                                                                      | Summer 1<br>Unit 5                                                                                               | Autumn 2<br>Unit 6                                                                                                                      |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Year 4</b> | <b>Information Technology</b><br>Computing systems and networks<br>Collaborative learning<br><a href="#">(Option 2: Microsoft Office 365)</a><br>(4 lessons: 1, 3, 4, 5) | <b>Computer Science</b><br>Programming 1<br>Further coding with Scratch <a href="#">(Option 2: Microsoft Office 365)</a><br>(3 lessons: 2-4 only) | <b>Digital Literacy</b><br>Online Safety<br>Online Safety - Safer Internet Day                                                                | <b>Digital Literacy</b><br>Data Handling<br>Investigating weather <a href="#">(Option 2: Microsoft Office 365)</a><br>(3 lessons: 1, 3, 4, 5)                                           | <b>Digital Literacy</b><br>Programming 2<br><a href="#">Computational thinking</a><br>(4 lessons: 1-4 only)      | <b>Digital Literacy</b><br>Online safety<br><a href="#">Online safety Y4</a><br>(4 lessons: 1, 2, 3, 5)                                 |
| <b>Year 5</b> | <b>Computer Science</b><br>Programming<br>Micro:Bit<br>Lessons 1-2)                                                                                                      | <b>Information Technology</b><br>Data Handling<br><a href="#">Mars Rover 1</a><br>(3 lessons: 1, 2 and 4)                                         | <b>Digital Literacy</b><br>Online safety<br><a href="#">Online safety Y5</a><br>(3 lessons: 1, 4 and 5)<br>Online Safety – Safer Internet Day | <b>Information Technology</b><br>Creating media<br>Stop motion animation <a href="#">(Option 1: Stop Motion Studio)</a><br><a href="#">(Option 2: with cameras)</a><br>(4 lessons: 1-4) | <b>Computer Science</b><br>Programming<br>Programming music <a href="#">(Option 2: Scratch)</a> (4 lessons: 1-4) | <b>Information Technology</b><br>Computing systems and networks<br><a href="#">(Option 2: Microsoft Office 365)</a><br>(4 lessons: 1-4) |
| <b>Year 6</b> | <b>Information Technology</b><br>Computing systems and networks<br>Bletchley Park<br><a href="#">(Option 2: Microsoft Office 365)</a><br>(3 lessons: 1-3)                | <b>Digital Literacy</b><br>Data Handling<br><a href="#">Big data 1</a><br>(4 lessons: 1, 3, 4 and 5)                                              | <b>Digital Literacy</b><br>Online Safety<br>Online Safety - Safer Internet Day                                                                | <b>Information Technology</b><br>Creating media<br><a href="#">History of computers</a><br><a href="#">(Option 2: Microsoft Office 365)</a><br>(3 lessons: 3-5)                         | <b>Computer Science</b><br>Programming<br><a href="#">Intro to Python</a><br>(4 lessons: 1-4)                    | <b>Digital Literacy</b><br>Online safety<br><a href="#">Online safety Y6</a><br>(4 lessons: 1, 2, 4 and 6)                              |



## **6. DEVELOPING ENGLISH SPEAKING, READING AND WRITING**

Computing can further develop Speaking and Listening, Reading, Writing and vocabulary provision at Lozells Primary School.

Within the Computing Curriculum pupils will have the opportunity to develop their English skills through paired, group and class discussions. Exploration of new and previously acquired vocabulary is encouraged and this is also shared on lesson slides to develop reading by sharing the Computing Knowledge Organisers.

Visual images are also used to support speaking skills and for the pupils to apply knowledge acquired.

There are a number of opportunities where children are given the opportunity to use devices in non-computing lessons such as Century, and TTRock Stars and this should still be encouraged. Teachers however are mindful that although these platforms enhance the curriculum, this is not part of the Computing Curriculum.

With online safety being a vital part of the computing scheme of work, teachers are encouraged to build on the pupils' oracy skills to discuss various matters. Within this, listening, summarising and articulating ideas is an important part of understanding the benefits and potential dangers of being a respectful and knowledgeable online citizen.

## **7. EQUALITY OF ACCESS AND EFFECTIVE SUPPORT FOR CHILDREN WITH SEND**

Teachers at Lozells ensure that the classroom is an inclusive environment in which pupils feel all contributions are valued and positive steps are taken to allow all pupils to participate. Teaching is responsive to pupil's different learning styles and takes account of their experiences and starting points, in order to engage all pupils. Pupil grouping in the classroom is planned and varied. Teaching styles include collaborative learning so that pupils appreciate the value of working together. All pupils are encouraged to question, discuss and collaborate in problem solving tasks.

As a school we will take reasonable and necessary steps to ensure that all children can access a broad and balanced curriculum. This includes ensuring that the environment is accessible as well as lesson content. In some instances, we may consult with external agencies for advice to meet the needs of some children to ensure that they are able to participate in all lessons across the curriculum.

Differentiating Lessons by:

- Using a range of differentiated resources.
- Providing differentiated tasks where appropriate.
- Differentiating questions.
- Using a range of groupings within the class to teach children and support them.
- The amount of adult support that is given and adapting this as necessary including specialist technology support staff.

Effective Lesson Planning and Management

- Setting clear objectives that are understood by each pupil.
- Presenting work in small achievable steps.
- Planning varied activities that motivate pupils and providing alternative activities where needed.
- Creating an atmosphere of encouragement and providing opportunities for pupils to achieve success.
- Identifying the most suitable pace for each student in order to provide sufficient individual challenge whilst fostering enthusiasm and facilitating

## **8. ANALYSING THE IMPACT OF OUR COMPUTING CURRICULUM TO INCLUDE ASSESSMENT**

To analyse the impact of the Computing Curriculum there will be using the principles of the CUSP Pupil Book Study. This will include conducting a pupil voice with pupils across the school allowing them to discuss and demonstrate previous and current learning in the Computing Curriculum. Children will get the opportunities to apply practical learning as well as verbal describe that they know. Alongside this, the Kapow Computing Knowledge Catchers will also be used to evaluate the effectiveness of the curriculum.

This will look different in Key Stages 1 and 2

Focus for the Pupil Book Study will be demonstrations and Competency of key skills used within a term or half term,

Vocabulary that has been taught within a unit of study and whether the children can use these in context

Lesson Sequence (Analysis of lesson slides/content)

Evidence from year group folders to see what has been achieved and covered.

Using the teachers as a form of analysis is also beneficial in identifying the effectiveness of the impact of the curriculum. Teacher Voice, Audits and Questionnaires will be used to assess their competencies, to tailor CPD and to identify the impact on the teaching and learning.

# 9. TEACHER CPD AND SUBJECT DEVELOPMENT PRIORITIES

Whole School

Assessment

Computer Science Computer Science covers the 'how'. How computers and computer systems work and how they are designed and programmed.

Staff Audit A self-review by staff of how confident they were in teaching each subject and training requirements that they needed to be more effective.

Implement knowledge organisers in their subject

- Monitor the equality of provision for all to ensure there is consistency across year groups,

Compiling a portfolio of work across the school to show the impact the curriculum on learning.

- Lesson observations and drop ins.
- Team teaching.
- Coaching conversations.

Subject Leader

Identify and describe the key strengths and areas for development in their subject.

Pupils are accessing sufficient coverage and depth in line with the planned curriculum

Plan for an equality of access for pupils to the curriculum provision

Work alongside other subject leaders for consistency across subjects.