

Computing at Alexandra Primary School: Computing Systems and Networks

Year 2

Information technology around us

Recognise the uses and features of information technology
Identify information technology in the home
Identify information technology beyond school
Explain how information technology benefits us
Show how to use information technology safely
Recognise that choices are made when using information technology

Year 3

Connecting Computers

Explain how digital devices function
Identify input and output devices
Recognise how digital devices can change the way we work
Explain how a computer network can be used to share information
Explore how digital devices can be connected
Recognise the physical components of a network

Year 4

The Internet

Describe how networks physically connect to other networks
Recognise how networked devices make up the internet
Outline how websites can be shared via the World Wide Web
Describe how content can be added and accessed on the World Wide Web
Recognise how the content of the WWW is created by people
Evaluate the consequences of unreliable content

Year 1

Technology around us

Identify technology
Identify a computer and its main parts
Use a mouse in different ways
Use a keyboard to type
Use the keyboard to edit text
Create rules for using technology responsibly

Early Years

Learn what a keyboard is and how to locate relevant keys
Know how to log in and out
Begin to develop control when using a mouse
Develop basic mouse skills including, moving and clicking and begin to learn to drag

Year 6

Communication

Identify how to use a search engine
Describe how search engines select results
Explain how search results are ranked
Recognise why the order of results is important, and to whom
Recognise how we communicate using technology
Evaluate different methods of online communication

Year 5

Sharing Information

Explain that computers can be connected together to form systems
Recognise the role of computer systems in our lives
Recognise how information is transferred over the internet
Explain how sharing information online lets people in different places work together
Contribute to a shared project online
Evaluate different ways of working together online

Perform

Aspire

Succeed



The learning
doesn't stop here!

GO

Computing at Alexandra Primary School: Online Safety

Year 2

Know what happens to information posted online.
Know to keep things safe and private online.
Explain what should be done before sharing information online.
Explain why I have the right to say no and deny permission.
Learn strategies that will help me decide if something I see online is true or not.

Year 1

Know what the internet is and how to use it safely.
Understand different feelings when using the internet.
Understand how to treat others, both online and in-person.
Understand the importance of being careful about what we post and share online.

Early Years

Know what to do if they see something online that worries or upsets them
Understand the importance of keeping passwords safe

Year 3

Understand how the internet can be used to share beliefs, opinions and facts.
Understand that effects that some internet use can have on our feelings and emotional wellbeing.
Understand the ways personal information can be shared on the internet.
Understand the rules for social media platforms.

Year 4

Describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy
Describe some of the methods used to encourage people to buy things online
Explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true
Explain that technology can be designed to act like or impersonate living things
Explain how technology can be a distraction and identify when I might need to limit the amount of time spent using technology
Understand how to be safe and respectful online

Year 5

Understand how apps can access our personal information and how to alter the permissions.
Have an awareness of the positive and negative aspects of online communication.
Understand how online information can be used to form judgements.
Discover ways to overcome bullying.
Understand how technology can affect health and wellbeing

Year 6

Describe issues online that give us negative feelings and know ways to get help.
Understand the impact and consequences of sharing online.
Know how to create a positive online reputation.
To be able to describe how to capture bullying content as evidence.
To manage personal passwords effectively.
Have an awareness of strategies to help be protected online.

Perform

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Computing at Alexandra Primary School: Data and Information

Year 2

Pictograms

Recognise that we can count and compare objects using tally charts
Recognise that objects can be represented as pictures
Create a pictogram
Select objects by attribute and make comparisons
Recognise that people can be described by attributes
Explain that we can present information using a computer

Year 3

Branching Databases

Create questions with yes/no answers
Identify the object attributes needed to collect relevant data
Create a branching database
Identify objects using a branching database
Explain why it is helpful for a database to be well structured
Compare the information shown in a pictogram with a branching database

Year 4

Data Logging

Explain that data gathered over time can be used to answer questions
Use a digital device to collect data automatically
Explain that a data logger collects 'data points' from sensors over time
Use data collected over a long duration to find information
Identify the data needed to answer questions
Use collected data to answer questions

Year 1

Grouping Data

Label objects
Identify that objects can be counted
Describe objects in different ways
Count objects with the same properties
Compare groups of objects
Answer questions about groups of objects

Year 5

Flat-file Databases

Use a form to record information
Compare paper and computer-based databases
Outline how grouping and then sorting data allows us to answer questions
Explain that tools can be used to select specific data
Explain that computer programs can be used to compare data visually
Apply my knowledge of a database to ask and answer real-world questions

Early Years

Sort and categorise objects
Sort according to given categories
Respond to yes/no questions
Begin to use a branching database through physical sorting
Interpret a basic pictogram

Year 6

Spreadsheets

Identify questions which can be answered using data
Explain that objects can be described using data
Explain that formula can be used to produce calculated data
Apply formulas to data, including duplicating
Create a spreadsheet to plan an event
Choose suitable ways to present data

Perform

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Computing at Alexandra Primary School: Creating Media

Year 2

Digital Photography

Know what devices can be used to take photographs
Use a digital device to take a photograph
Describe what makes a good photograph
Decide how photographs can be improved
Use tools to change an image
Recognise that images can be changed

Making Music

Communicate how music can make us feel
Identify that there are patterns in music
Describe how music can be used in different ways
Show how music is made from a series of notes
Create music for a purpose
Review and refine our computer work

Year 1

Digital Painting

Describe what different freehand tools do
Use the shape tool and the line tools
Make careful choices when painting a digital picture
Explain why I chose the tools I used
Use a computer on my own to paint a picture
Compare painting a picture on a computer and on paper

Digital Writing

Use a computer to write
Add and remove text on a computer
Identify that the look of text can be changed on a computer
Make careful choices when changing text
Explain why I used the tools that I chose
Compare writing on a computer with writing on paper

Early Years

Learn to operate a basic camera to take photographs in a range of situations

Year 3

Stop-frame animation.

Explain that animation is a sequence of drawings or photographs.
Relate animated movement with a sequence of images
Plan an animation.
Identify the need to work consistently and carefully
Review and improve an animation
Evaluate the impact of adding other media to an animation

Desktop Publishing

Recognise how text and images convey information
Recognise that text and layout can be edited
Choose appropriate page settings
Add content to a desktop publishing publication
Consider how different layouts can suit different purposes
Consider the benefits of desktop publishing

Year 4

Audio editing

Identify that sound can be digitally recorded
Use a digital device to record sound
Explain that a digital recording is stored as a file
Explain that audio can be changed through editing
Show that different types of audio can be combined and played together
Evaluate editing choices made

Photo editing

Explain that digital images can be changed
Change the composition of an image
Describe how images can be changed for different uses
Make good choices when selecting different tools
Recognise that not all images are real
Evaluate how changes can improve an image

Year 5

Video editing

Recognise video as moving pictures, which can include audio
Identify digital devices that can record video
Capture video using a digital device
Recognise the features of an effective video
Identify that video can be improved through reshooting and editing
Consider the impact of the choices made when making and sharing a video

Vector drawing

Identify that drawing tools can be used to produce different outcomes
Create a vector drawing by combining shapes
Use tools to achieve a desired effect
Recognise that vector drawings consist of layers
Group objects to make them easier to work with
Evaluate my vector drawing

Year 6

Web page creation

Review an existing website and consider its structure
Plan the features of a web page
Consider the ownership and use of images (copyright)
Recognise the need to preview pages
Outline the need for a navigation path
Recognise the implications of linking to content owned by other people

3D modelling

Use a computer to create and manipulate three-dimensional (3D) digital objects
Compare working digitally with 2D and 3D graphics
Construct a digital 3D model of a physical object
Identify that physical objects can be broken down into a collection of 3D shapes
Design a digital model by combining 3D objects

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Computing at Alexandra Primary School: Programming

Year 2

Robot algorithms

Describe a series of instructions as a sequence
 Explain what happens when we change the order of instructions
 Use logical reasoning to predict the outcome of a program (series of commands)
 Explain that programming projects can have code and artwork
 Design an algorithm
 Create and debug a program that I have written

Introduction to quizzes

Explain that a sequence of commands has a start
 Explain that a sequence of commands has an outcome
 Create a program using a given design
 Change a given design
 Create a program using my own design
 Decide how my project can be improved

Year 1

Moving a Robot

Explain what a given command will do
 Act out a given word
 Combine forwards and backwards commands to make a sequence
 Combine four direction commands to make sequences
 Plan a simple program
 Find more than one solution to a problem

Introduction to Animation

Choose a command for a given purpose
 Show that a series of commands can be joined together
 Identify the effect of changing a value
 Explain that each sprite has its own instructions
 Design the parts of a project and use my algorithm to create a program

Early Years

Understand the meaning of directional arrows to follow a simple sequence of instructions
 Experiment with programming a robot and give simple commands
 Learn that an algorithm is a set of instructions
 Follow a simple algorithm as part of a game
 Debug instructions when things go wrong

Year 3

Sequence in music

Explore a new programming environment
 Identify that commands have an outcome
 Explain that a program has a start
 Recognise that a sequence of commands can have an order
 Change the appearance of my project
 Create a project from a task description

Events and Actions

Explain how a sprite moves in an existing project
 Create a program to move a sprite in four directions
 Adapt a program to a new context
 Develop my program by adding features
 Identify and fix bugs in a program
 Design and create a maze-based challenge

Year 4

Repetition in shapes

Identify that accuracy in programming is important
 Create a program in a text-based language
 Explain what 'repeat' means
 Modify a count-controlled loop to produce a given outcome
 Decompose a task into small steps
 Create a program that uses count-controlled loops to produce a given outcome

Repetition in games

Develop the use of count-controlled loops in a different programming environment
 Explain that in programming there are infinite loops and count-controlled loops
 Develop a design that includes two or more loops which run at the same time.
 Modify an infinite loop in a given programme
 Design and create a project that includes repetition

Year 5

Selection in physical computing

Control a simple circuit connected to a computer
 Write a program that includes count-controlled loops
 Explain that a loop can stop when a condition is met, e.g. number of times
 Conclude that a loop can be used to repeatedly to check whether a condition has been met
 Design a physical project that includes selection
 Create a controllable system that includes selection

Selection in games

Explain how selection is used in computer programs
 Relate that a conditional statement connects a condition to an outcome
 Explain how selection directs the flow of a program
 Design a program which uses selection
 Create a program which uses selection
 Evaluate my program

Year 6

Variables in games

Define a 'variable' as something that is changeable. To explain why a variable is used in a program
 Choose how to improve a game by using variables
 Design a project that builds on a given example and use the design to create and evaluate a project

Sensing

Create a program to run on a controllable device
 Explain that selection can control the flow of a program
 Update a variable with a user input
 Use a conditional statement to compare a variable to a value
 Design and develop a project and programme that uses inputs and outputs on a controllable device
 Develop a program to use inputs and outputs on a controllable device

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