Murdishaw West Community Primary School
Computing Curriculum Overview

Year 1 Computing: Improving mouse skills

The **BIG** Picture

Knowing how to log in and navigate around a computer, developing mouse skills, learning how to drag, drop, click and control a cursor to create works of art inspired by Kandinsky and self-portraits.

NC Objectives- Key Stage 1

Pupils should be taught:

- 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.

Unit Outcome

Pupils who are **secure** will know how to:

•Use computers more purposefully

•Log in and navigate around a computer

•Drag, drop, click and control a cursor using a mouse

•Use software tools to create art on the computer

Key vocabulary

Log in	Login
Log out / off	Mouse
Mouse pointer	Click
Keyboard	Screen
Password	Account
Software	Duplicate
Ctrl	Tools
Right click	Menu
Layers	Username
Drag	Drag and drop
Digital photograph	Undo
	Cursor

Key Skills

•Learning how to explore and tinker with hardware to find out how it works.
•Learning where keys are located on the keyboard.
•Using a basic range of tools within graphic editing software.
•Developing control of the mouse through dragging, clicking and resizing of images to create different effects.
•Developing understanding of different software tools.
•Recognising devices that are connected to the internet.
•Logging in and out and saving work on their own account.

Key Knowledge

To know that:
•"log in" and "log out" means to begin and end a connection with a computer
•A computer and mouse can be used to click, drag, fill and select and also add backgrounds, text, layers, shapes and clip art.
•Passwords are important for security and to keep us safe.

Murdishaw West Community Primary School
Computing Curriculum Overview

Year 1 Computing: Algorithms unplugged

The **BIG** Picture

Using an unplugged approach so that algorithms, decomposition and debugging are made relatable to familiar contexts, such as dressing up and making a sandwich, while learning why instructions need to be very specific.

NC Objectives- Key Stage 1

Pupils should be taught:

- 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.

Unit Outcome

Pupils who are **secure** will be able to:

- Explain what an algorithm is.
- Write clear algorithms.
- Follow an algorithm.
- Explain what inputs and outputs are.
- Create an achievable program.
- Decompose a design into steps.
- Identify bugs in an algorithm and how to fix them.

Key vocabulary

Algorithm	Automatic	Bug
Chunks	Clear	Code
Debug	Decompose	Decomposition
Device	Directions	Input
Instructions	Manageable	Motion
Order	Organise	Output
Precise	Programming	Problem
Robot	Sensor	Sequence
Solution	Specific	Steps
Tasks	Virtual assistant	

Key Skills

- Recognising that some devices are input devices and others are output devices.
- Learning that decomposition means breaking a problem down into smaller parts.
- Using decomposition to solve unplugged challenges.
- Developing the skills associated with sequencing in unplugged activities.
- Following a basic set of instructions.
- Assembling instructions into a simple algorithm.
- Learning to debug instructions when things go wrong.
- Learning to debug an algorithm in an unplugged scenario.

Key Knowledge

- To understand that an algorithm is when instructions are put in an exact order.
- To understand that decomposition means breaking a problem into manageable chunks and that it is important in computing.
- To understand that decomposition means breaking a problem into manageable chunks and that it is important in computing.
- To know that we call errors in an algorithm 'bugs' and fixing these 'debugging'.

Murdishaw West Community Primary School
Computing Curriculum Overview

Year 1 Computing: Rocket to the moon

The **BIG** Picture

Developing keyboard and mouse skills through designing, building and testing individual rockets by creating a digital list of materials, using drawing software and recording data

NC Objectives- Key Stage 1

Pupils should be taught:

- 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.

Unit Outcome

Pupils who are **secure** will be able to:

•Use a computer to make a list

•Explain the benefits of making a list on the computer

•Use a basic range of tools on graphics editing software to design a rocket

•Sequence instructions

•Follow instructions to build their model rocket

•Input data about their rockets into a table or spreadsheet

Key Knowledge

•To know that when we create something on a computer it can be more easily saved and shared than a paper version.
•To know some of the simple graphic design features of a piece of online software.
•To know that a spreadsheet is an electronic 'table' for sorting data.

Key vocabulary

Annotate	Cells
Components	Create
Data	Debug
Designing	Digital content
Digital image	Document
E-document	Edit
Editing program	Evaluate
Folder	Input
Instructions	Log in
Photo	Program
Order	Robot
Save	Sequence
Share	Software
Spreadsheet	Table

Key Skills

•Learning where keys are located on the keyboard.
• Learning how to operate a camera to take photos and videos.
• Using logical reasoning to predict the behaviour of simple programs.
• Developing the skills associated with sequencing in unplugged activities.
• Following a basic set of instructions.
• Assembling instructions into a simple algorithm.
• Learning to debug instructions when things go wrong.
• Learning to debug an algorithm in an unplugged scenario.
• Using a basic range of tools within graphic editing software.
• Taking and editing photographs.
• Developing control of the mouse through dragging, clicking and resizing of images to create different effects.
• Developing understanding of different software tools.
• Recognising devices that are connected to the internet.
• Understanding that technology can be used to represent data in different ways: pictograms, tables, pie charts, bar charts, block graphs etc.
• Logging in and out and saving work on their own account.

Murdishaw West Community Primary School
Computing Curriculum Overview

Year 1 Computing: Beebots

The **BIG** Picture

Developing early programming skills using either the Bee:Bot or virtual Bee:Bot.

NC Objectives- Key Stage 1

Pupils should be taught:

- 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.

Unit Outcome

Pupils who are **secure** will be able to:

•Recognise cause and effect when pressing buttons on a Bee-Bot.

•Discuss and demonstrate how the Bee-Bot works.

•Record video ensuring everyone is in the shot.

•Give a a number of clear instructions in sequence.

•Program a Bee-Bot to reach a destination.

•Identify and correct mistakes in their programming.

Key vocabulary

Algorithm	Artificial intelligence
Bee-Bot	Clear
Code	Debug
Demonstration	Filming
Inputting	Instructions
Pause	Precise
Predict	Program
Tinker	Video
	Video recording

Key Skills

•Learning how to explore and tinker with hardware to find out how it works.
• Learning how to operate a camera to take photos and videos.
• Using decomposition to solve unplugged challenges.
• Using logical reasoning to predict the behaviour of simple programs.
• Developing the skills associated with sequencing in unplugged activities.
• Following a basic set of instructions.
• Assembling instructions into a simple algorithm.
• Programming a floor robot to follow a planned route.
• Learning to debug instructions when things go wrong.
• Using programming language to explain how a floor robot works.
• Learning to debug an algorithm in an unplugged scenario.
• Taking and editing photographs.

Key Knowledge

•To understand the basic functions of a Bee-Bot.
•To know that you can use a camera/tablet to make simple videos.
•To know that algorithms move a Bee-Bot accurately to a chosen destination.

Murdishaw West Community Primary School
Computing Curriculum Overview

Year 1 Computing: Digital Imagery

The **BIG** Picture

Using creativity and imagination to plan a miniature adventure story and capturing it using developing photography skills. Children learn to enhance photos using a range of editing tools as well as searching for and adding other images to a project, resulting in a high-quality photo collage showcase.

NC Objectives- Key Stage 1

Pupils should be taught:

- 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.

Unit Outcome

Pupils who are **secure** will be able to:

•Plan a pictorial story using photographic images in sequence.

•Explain how to take clear photos.

•Take photos using a device.

•Edit photos by cropping, filtering and resizing.

•Search for and import images from the internet.

•Explain what to do if something makes them uncomfortable online.

•Organise images on the page, orientating where necessary.

Key vocabulary

Background	Blurred
Camera	Clear
Crop	Delete
Device	Digital camera
Download	Drag and drop
Edit	Editing software
Filter	Image
Import	Internet
Keyword	Online
Photograph	Resize
Save as	Screen
Search engine	Sequence
Software	Storage space
	Visual effects

Key Skills

•Learning how to explore and tinker with hardware to find out how it works.
• Learning where keys are located on the keyboard.
• Learning how to operate a camera to take photos and videos.
• Developing the skills associated with sequencing in unplugged activities.
• Using a basic range of tools within graphic editing software.
• Taking and editing photographs.
• Developing control of the mouse through dragging, clicking and resizing of images to create different effects.
• Developing understanding of different software tools.
• Searching and downloading images from the internet safely.
• When using the internet to search for images, learning what to do if they come across something online that worries them or makes them feel uncomfortable.

Key Knowledge

•To understand that holding the camera or device still and considering angles and light are important to take good pictures.
•To know that you can edit, crop and filter photographs.
•To know how to search safely for images online.

Murdishaw West Community Primary School
Computing Curriculum Overview

Year 1 Computing: Introduction to data

The **BIG** Picture

Learning what data is and the different ways that it can be represented as well as developing an understanding of why data is useful, how it can be used and ways in which it can be gathered and recorded both by humans and computers.

NC Objectives- Key Stage 1

Pupils should be taught:

- 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.

Unit Outcome

Pupils who are **secure** will be able to:

•Represent animal-themed data in different ways, using objects and technology.

•Log in and use mouse and keyboard skills to navigate the computer.

•Represent the same data as a pictogram and a table or chart.

•Collect data about minibeasts using a tally chart and represent their data digitally.

•Click and drag objects to sort data using a branching database.

•Consider the types of input that would be used to gather different forms of data when designing an invention.

Key vocabulary

Bar chart	Block graph
Branching database	Categorise
Chart	Click and drag
Compare	Count
Data	Data collection
Data record	Data representation
Edit	Input
Keyboard	Line graph
Mouse	Information
Label	Pictogram
Pie chart	Process
Record	Resize
Sort	Table
Tally	Values

Key Skills

•Learning how to explore and tinker with hardware to find out how it works.

• Recognising that some devices are input devices and others are output devices.

• Learning where keys are located on the keyboard.

• Developing control of the mouse through dragging, clicking and resizing of images to create different effects.

• Developing understanding of different software tools.

• Recognising devices that are connected to the internet.

• Understanding that technology can be used to represent data in different ways: pictograms, tables, pie charts, bar charts, block graphs etc.

• Using data representations to answer questions about data.

• Using software to explore and create pictograms and branching databases.

Key Knowledge

•To know that charts and pictograms can be created using a computer.

•To understand that a branching database is a way of classifying a group of objects.

•To know that computers understand different types of 'input'.

Murdishaw West Community Primary School
Computing Curriculum Overview

Year 1 Computing: Online Safety

The **BIG** Picture

Learning about online safety, including using useful tips to stay safe when online; how to manage feelings and emotions when someone or something has upset us online; learning about the responsibility we have as online users; exploring the idea of a 'digital footprint'.

NC Objectives- Key Stage 1

Pupils should be taught:

- 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.

Unit Outcome

Pupils who are **secure** will be able to:

•Discuss what the internet is and how it can be used.

•Recognise that the internet may affect mood or emotions.

•Recognise how internet use can affect and upset others.

•Identify which information is appropriate to share and post online and which is not.

Key vocabulary

Communicate
Connection
Devices
Emotion
Instructions
Internet safety
Mood
Personal information
Posting
Sharing
Smart TV
Strangers
Trust
Connect
Consoles
Digital footprint
Feelings
Internet
Laptop
Online
Phone
Respect
Smartphone
Smartwatch
Tablet
Wired
Wireless

Key Skills

•Recognising devices that are connected to the internet.

•Understanding that we are connected to others when using the internet.

•Understanding some of the ways we can use the internet.

•When using the internet to search for images, learning what to do if they come across something online that worries them or makes them feel uncomfortable.

•Understanding how to interact safely with others online.

•Recognising how actions on the internet can affect others.

•To be able to recognise what a digital footprint is and how to be careful about posting online.

Key Knowledge

•To know that the internet is many devices connected to one another.

•To know what to do if you feel unsafe or worried online – tell a trusted adult.

•To know that people you do not know on the internet (online) are strangers and are not always who they say they are.

•To know that to stay safe online it is important to keep personal information safe.

•To know that 'sharing' online means giving something specific to someone else via the internet and 'posting' online means placing information on the internet.