

Year 3 – Connecting computers

Computing systems and networks

Prior learning retrieved

KS1 computing knowledge and increasing digital independence

New knowledge / skill

explain how digital devices function; identify input and output devices; recognise how digital devices can change the way that 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

Why this? Why now?

Learners will develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. They will also compare digital and non-digital devices. Next, learners will be...

Careers link

IT technician; network engineer; systems engineer

SMSC link

Social/moral: collaborate respectfully, use technology responsibly and explain choices. Spiritual/cultural: develop curiosity, creativity and confidence with digital tools.

Climate / sustainability

Use technology purposefully; where authentic, connect tasks to efficient systems, environmental data, sustainable choices or reducing unnecessary resource use.

Key resources / platform

School devices; relevant NCCE/Teach Computing software and unit resources; teacher demonstration materials.

Key vocabulary

computer • digital • input • output • program • data • create • edit • evaluate

Year 3 — Connecting computers: Sessions 1–3

Session-by-session breakdown • learning objective • necessary resources

1

How does a digital device work?

To explain how digital devices function

School devices; relevant NCCE/Teach Computing software and unit resources; teacher demonstration materials.

2

What parts make up a digital device?

To identify input and output devices

School devices; relevant NCCE/Teach Computing software and unit resources; teacher demonstration materials.

3

How do digital devices help us?

To recognise how digital devices can change the way that we work

School devices; relevant NCCE/Teach Computing software and unit resources; teacher demonstration materials.

Online safety is taught through PHSRE; computing lessons reinforce safe, respectful and responsible use in context.

Year 3 — Connecting computers: Sessions 4–6

Session-by-session breakdown • learning objective • necessary resources

4

How am I connected?

To explain how a computer network can be used to share information

School devices; relevant NCCE/Teach Computing software and unit resources; teacher demonstration materials.

5

How are computers connected?

To explore how digital devices can be connected

School devices; relevant NCCE/Teach Computing software and unit resources; teacher demonstration materials.

6

What does our school network look like?

To recognise the physical components of a network

School devices; relevant NCCE/Teach Computing software and unit resources; teacher demonstration materials.

Online safety is taught through PHSRE; computing lessons reinforce safe, respectful and responsible use in context.

Year 3 — Sequencing sounds

Programming A

Prior learning retrieved

KS1 computing knowledge and increasing digital independence

Careers link

Software developer; programmer; robotics engineer

New knowledge / skill

explore a new programming environment; recognise that a sequence of commands can; change the appearance of my project; further enhance your subject knowledge, enrol on the teach primary computing certificate. This will support you to develop your knowledge and skills in; avoid this, learners must click on the sprite to bring up its individual; apply and review the key knowledge and skills from the unit

SMSC link

Social/moral: collaborate respectfully, use technology responsibly and explain choices.
Spiritual/cultural: develop curiosity, creativity and confidence with digital tools.

Why this? Why now?

This unit explores the concept of sequencing in programming through Scratch. It begins with an introduction to the programming environment, which will be new to most learners. They will be introduced to a...

Climate / sustainability

Use technology purposefully; where authentic, connect tasks to efficient systems, environmental data, sustainable choices or reducing unnecessary resource use.

Key resources / platform

Device with Scratch; headphones optional; NCCE starter projects.

Key vocabulary

Scratch • sprite • block • command • sequence • event • sound • note • order • program • debug

Year 3 — Sequencing sounds: Sessions 1–3

Session-by-session breakdown • learning objective • necessary resources

1

– Sequencing sounds

To explore a new programming environment

Device with Scratch; headphones optional;
NCCE starter projects.

2

– Sequencing sounds

To recognise that a sequence of commands
can

Device with Scratch; headphones optional;
NCCE starter projects.

3

**and 2 to design and create their
own project, including
sequences, sprites with**

To change the appearance of my project

Device with Scratch; headphones optional;
NCCE starter projects.

Online safety is taught through PHSRE; computing lessons reinforce safe, respectful and responsible use in context.

Year 3 — Sequencing sounds: Sessions 4–6

Session-by-session breakdown • learning objective • necessary resources

4

– Sequencing sounds

To further enhance your subject knowledge, enrol on the teach primary computing certificate. This will support you to develop your knowledge and skills in

Device with Scratch; headphones optional; NCCE starter projects.

5

NCCE units. They will have experienced programming via floor

To avoid this, learners must click on the sprite to bring up its individual

Device with Scratch; headphones optional; NCCE starter projects.

6

Applying learning 6

To apply and review the key knowledge and skills from the unit

Device with Scratch; headphones optional; NCCE starter projects.

Online safety is taught through PHSRE; computing lessons reinforce safe, respectful and responsible use in context.

Year 3 — Stop-frame animation

Creating media



Prior learning retrieved

KS1 computing knowledge and increasing digital independence

New knowledge / skill

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

Why this? Why now?

Learners will use a range of techniques to create a stop-frame animation. Next, they will apply those skills to create a story-based animation. This unit will conclude with learners adding other types of...

Careers link

Digital designer; content creator; creative technologist

SMSC link

Social/moral: collaborate respectfully, use technology responsibly and explain choices.
Spiritual/cultural: develop curiosity, creativity and confidence with digital tools.

Climate / sustainability

Use technology purposefully; where authentic, connect tasks to efficient systems, environmental data, sustainable choices or reducing unnecessary resource use.

Key resources / platform

Tablet/device with stop-frame app; figures/props; planning sheets.

Key vocabulary

animation • frame • sequence • image • capture • playback • storyboard • onion skin • movement • edit

Year 3 — Stop-frame animation: Sessions 1–3

Session-by-session breakdown • learning objective • necessary resources

1

Can a picture move?

To explain that animation is a sequence of drawings or photographs

Tablet/device with stop-frame app; figures/props; planning sheets.

2

Frame by frame

To relate animated movement with a sequence of images

Tablet/device with stop-frame app; figures/props; planning sheets.

3

What's the story?

To plan an animation

Tablet/device with stop-frame app; figures/props; planning sheets.

Online safety is taught through PHSRE; computing lessons reinforce safe, respectful and responsible use in context.

Year 3 — Stop-frame animation: Sessions 4–6

Session-by-session breakdown • learning objective • necessary resources

4

Picture perfect

To identify the need to work consistently and carefully

Tablet/device with stop-frame app; figures/props; planning sheets.

5

Evaluate and make it great!

To review and improve an animation

Tablet/device with stop-frame app; figures/props; planning sheets.

6

Lights, camera, action!

To evaluate the impact of adding other media to an animation

Tablet/device with stop-frame app; figures/props; planning sheets.

Online safety is taught through PHSRE; computing lessons reinforce safe, respectful and responsible use in context.

Year 3 — Branching databases

Data and information

Prior learning retrieved

KS1 computing knowledge and increasing digital independence

New knowledge / skill

create questions with yes/no answers; identify the attributes needed to collect data about an object; create a branching database; explain why it is helpful for a database to be well structured; plan the structure of a branching database; independently create an identification tool

Why this? Why now?

Learners will develop their understanding of what a branching database is and how to create one. They will use yes/no questions to gain an understanding of what attributes are and how to use them to sort...

Careers link

Data analyst; researcher; data scientist

SMSC link

Social/moral: collaborate respectfully, use technology responsibly and explain choices.
Spiritual/cultural: develop curiosity, creativity and confidence with digital tools.

Climate / sustainability

Use technology purposefully; where authentic, connect tasks to efficient systems, environmental data, sustainable choices or reducing unnecessary resource use.

Key resources / platform

J2E branching database or equivalent; prepared data sets; question cards.

Key vocabulary

data • attribute • question • yes/no • branching database • group • classify • identify • record

Year 3 — Branching databases: Sessions 1–3

Session-by-session breakdown • learning objective • necessary resources

1

Yes or no questions

To create questions with yes/no answers

J2E branching database or equivalent;
prepared data sets; question cards.

2

Making groups

To identify the attributes needed to collect data about an object

J2E branching database or equivalent;
prepared data sets; question cards.

3

Creating a branching database

To create a branching database

J2E branching database or equivalent;
prepared data sets; question cards.

Online safety is taught through PHSRE; computing lessons reinforce safe, respectful and responsible use in context.

Year 3 — Branching databases: Sessions 4–6

Session-by-session breakdown • learning objective • necessary resources

4

Structuring a branching database

To explain why it is helpful for a database to be well structured

J2E branching database or equivalent;
prepared data sets; question cards.

5

Planning a branching database

To plan the structure of a branching database

J2E branching database or equivalent;
prepared data sets; question cards.

6

Making a dinosaur identifier

To independently create an identification tool

J2E branching database or equivalent;
prepared data sets; question cards.

Online safety is taught through PHSRE; computing lessons reinforce safe, respectful and responsible use in context.

Year 3 – Desktop publishing

Creating media

Prior learning retrieved

Y1 digital writing, digital painting and Y2 digital photography

New knowledge / skill

text/images/emojis; font/layout; templates; orientation; placeholders; copy/paste; audience/purpose

Why this? Why now?

Combines earlier media skills into designed publications for a clear audience.

Careers link

Editorial designer; graphic designer; publisher

SMSC link

Cultural/social: design purposeful publications for different audiences.
Moral: consider ownership of images and responsible choices when selecting and presenting content.

Climate / sustainability

Design posters/newsletters for eco campaigns; discuss digital distribution versus printing.

Key resources / platform

Canva for Education (or suitable DTP software); devices; teacher account/learner access; prepared text/images.

Key vocabulary

desktop publishing • text • image • font • layout • template • orientation • placeholder • copy • paste • purpose • audience

Year 3 — Desktop publishing: Sessions 1–3

Session-by-session breakdown • learning objective • necessary resources

1

Words and pictures

To recognise how text and images convey information

Canva for Education (or suitable DTP software); devices; teacher account/learner access; prepared text/images.

2

Can you edit it?

To recognise that text and layout can be edited

Canva for Education (or suitable DTP software); devices; teacher account/learner access; prepared text/images.

3

Great template!

To choose appropriate page settings

Canva for Education (or suitable DTP software); devices; teacher account/learner access; prepared text/images.

Online safety is taught through PHSRE; computing lessons reinforce safe, respectful and responsible use in context.

Year 3 — Desktop publishing: Sessions 4–6

Session-by-session breakdown • learning objective • necessary resources

4

Becoming a designer

To add content to a desktop publishing publication

Canva for Education (or suitable DTP software); devices; teacher account/learner access; prepared text/images.

5

Lay it out

To consider how different layouts can suit different purposes

Canva for Education (or suitable DTP software); devices; teacher account/learner access; prepared text/images.

6

Why desktop publishing?

To consider the benefits of desktop publishing

Canva for Education (or suitable DTP software); devices; teacher account/learner access; prepared text/images.

Online safety is taught through PHSRE; computing lessons reinforce safe, respectful and responsible use in context.

Year 3 — Events and actions in programs

Programming B

Prior learning retrieved

Y3 Sequencing sounds and earlier ScratchJr experience

New knowledge / skill

events/actions; four-direction movement; Pen extension; features; debugging; maze design

Why this? Why now?

Extends sequence into event-driven programs and purposeful project design.

Careers link

Game developer; software engineer; interaction designer

SMSC link

Social: collaborate through paired programming and explain decisions.
Spiritual: develop creativity and perseverance when designing and refining an interactive project.

Climate / sustainability

Maze/challenge themes can include habitats, low-carbon journeys or environmental missions.

Key resources / platform

Device with Scratch online/offline; teacher/learner accounts where used; maze/project starters.

Key vocabulary

event • action • sprite • movement • direction • command • program
• Pen extension • feature • bug • debug • maze

Year 3 — Events and actions in programs: Sessions 1–3

Session-by-session breakdown • learning objective • necessary resources

1

Moving a sprite

To explain how a sprite moves in an existing project

Device with Scratch online/offline;
teacher/learner accounts where used;
maze/project starters.

2

Maze movement

To create a program to move a sprite in four directions

Device with Scratch online/offline;
teacher/learner accounts where used;
maze/project starters.

3

Drawing lines

To adapt a program to a new context

Device with Scratch online/offline;
teacher/learner accounts where used;
maze/project starters.

Online safety is taught through PHSRE; computing lessons reinforce safe, respectful and responsible use in context.

Year 3 — Events and actions in programs: Sessions 4–6

Session-by-session breakdown • learning objective • necessary resources

4

Adding features

To develop my program by adding features

Device with Scratch online/offline;
teacher/learner accounts where used;
maze/project starters.

5

Debugging movement

To identify and fix bugs in a program

Device with Scratch online/offline;
teacher/learner accounts where used;
maze/project starters.

6

Making a project

To design and create a maze-based challenge

Device with Scratch online/offline;
teacher/learner accounts where used;
maze/project starters.

Online safety is taught through PHSRE; computing lessons reinforce safe, respectful and responsible use in context.