



## JWS Curriculum: Computing

The Computing curriculum at John Watson School is informed by our Core Principles: **SLICE**

<b>Safety</b>	<b>Learning</b>	<b>Independence</b>	<b>Communication</b>	<b>Engagement</b>
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The computing curriculum supports learners to engage safely with Information and Communication Technology (ICT). Pupils engage with ICT for a range of purposes across curricula, including the use of Augmentative Alternative Communication (AAC) systems, which play an important role in enhancing communication and interaction for many of our learners. It provides pupils with an electronic means to interact with others, gain access to information, or share and present information. We highlight the importance of e-safety, teaching our young people to develop an understanding of how to use devices and the internet safely. This plays an important role in the safety of our pupils and the wider community, including the development and application of functional skills in the community.

Our computing curriculum links physical and cognition skills to engage with ICT for communication and educational purposes across all subject areas. It recognises the benefits that ICT offers to our learners in a rapidly changing world of technology. This includes the use of an extensive range of software and hardware, with innovative equipment available, such as touch and switch access aids, to support communication and develop greater independence for our learners.

### JWS Computing Curriculum

#### CURRICULUM INTENT

##### Pre-Intentional Stage

Learners may engage with their environment through a range of sensory responses, such as reflex vocalisation and eye, facial or body movements. Pupils may interact with technology through supported engagement with audio, touch or movement technology that stimulates sensory stimuli and responses.

#### COMPUTING CURRICULUM IMPLEMENTATION at Pre-Intentional Stage

##### Encountering activities and experiences

Include the learners as part of a group...

- engaging with audio, visual or physical interaction with devices, to experience a range of sensory experiences (sensory Apps, such as music, light and moving devices)
- exploring and touching a variety of electronic sensory objects
- engaging with *cause* and *effect* computer games/activities, sitting alongside a peer or adult
- to listen, watch or interact with a sensory story through a range of ICT and media

Co-actively explore ...

- a switch program to stop, start or pause playing media, such as a film or music
- making gestures or movements to interact with devices
- choosing a symbol on an iPad, or laptop, which relates to an action
- use of an electronic device, or devices, to engage in intensive interaction

Encourage the learner to....

- touch a device, to effect a response
- show a physical, or facial response to the stimuli from a device, or interactive program
- to turn, or look towards, a sound, sight or touch, from a range of media and devices
- participate in cause and effect responses, such as intensive interaction
- reach out for a device
- participate in group activities, such as a class film, or musical performance

## Resources and Environment

**Environment** to facilitate sensory based exploration of ICT, such as through touch, sight and visual stimulation

### Resources to include....

- A range of electronic devices, such as Switches, iPads, Interactive Whiteboard, radio/CD player, electronic sensory toys
- Software Apps for use on Interactive Whiteboard, iPads and devices, e.g. [Gravitarium](#) or [Magic Fluids Lite](#)
- Hardware, such as PCs, laptops, CDs and DVDs

## CURRICULUM INTENT

### Intentional Communication

Learners at this stage are able to communicate intentionally but do not yet have a formal method of communication. They are likely to communicate using gestures, facial expression, body movements and vocalisations, along with turn-taking and imitation. They remember learned responses over more extended periods. Learners react to ICT and media with intent. It would involve similar responses to Pre-Intentional learners, but responses would be judged to be purposeful and consistent over time. This conclusion would be arrived at through long term observations.

## COMPUTING CURRICULUM IMPLEMENTATION at Intentional Stage

Encourage the learner to....

- participate in purposeful responses, to engage with audio, visual or physical interactions with devices, through intentional eye gaze, pointing, or touch, to experience a range of sensory stimuli
- show an intentional physical, or facial response to stimuli from a device, or interactive program, such as reaching out to explore, touch, manipulate and interact with a variety of electronic objects
- participate in purposeful *cause* and *effect* responses, with electronic devices, programs or programmable objects, individually, with support, or as part of a group
- participate in group activities, such as a class film, musical performance, or sensory story, engaging through a range of ICT and media
- point, touch, gesture or look at a program, electronic device, object or activity, to make a request
- reach out to intentionally touch and explore electronic devices and objects, to enhance sensory experiences
- find a requested electronic symbol, character, instruction, communicating by eye gaze, gesturing, pointing, reaching or touching a device
- copy simple repetitive actions using electronic device, objects or activities with increasing independence
- show preferences for different actions or activities, using devices, such as a Switch or iPad

## Resources and Environment

**Environment** to facilitate exploration of ICT, through sensory experiences, such as touch, sight and visual stimulation

### Resources to include....

- A range of electronic devices, including the Interactive Whiteboard, switches, iPads, radio/CD player, electronic and programmable toys/objects, e.g. interactive/electronic books, Bee-bot®
- Software Apps for use on Interactive Whiteboard, iPads and devices, e.g. AAC, such as [Proloquo2go](#)
- Hardware, such as PCs, laptops, CDs and DVDs

## CURRICULUM INTENT

### Intentional Formal Communication

Learners at this stage will mostly be able to communicate using more formal methods (e.g. signs, symbols or words). They will be able to explore ICT and electronic devices and use a range of single words, signs or symbols.

Individuals will develop different methods of communicating depending on physical abilities, personalities and their developmental stage.

Interacting with ICT and media with intent - This next stage involves a pupil understanding that when they carry out an action, they gain some form of output from the ICT stimulus.

## COMPUTING CURRICULUM IMPLEMENTATION Intentional Stage

Encourage the learner to....

- engage with audio, visual or physical interactions using devices, communicated through signs, symbol, single words or set phrases
- participate in *cause* and *effect*, interaction with electronic devices, programs or programmable objects, individually, with support, or as part of a group
- engage and participate in group activities, such as to create a class film, musical performance, or sensory story, using a range of ICT, devices and media
- use a program, electronic device, object or activity, to follow instructions, make requests, or play games, such as 'Stop/Start', 'Up/Down', 'Back/Forward'
- follow instructions using an electronic device to prompt a response/action, such as Interactive Whiteboard games and activities
- copy actions or simple movements using electronic devices, using programmable devices, e.g. *Bee-bots*®
- use a familiar, or disability-friendly phone/iPad/electronic device, for role play, with adult support, to rehearse contacting adults or peers, such as family members, following a familiar format, or set of visual/verbal instructions

### Resources and Environment

**Environment** play-based learning environment with opportunities for role play and interaction with ICT, electronic devices, programs and Apps

**Resources to include...**

- A range of electronic devices, including the Interactive Whiteboard, switches, iPads, radio/CD player, electronic and programmable toys/objects, disability-friendly mobile phones, e.g. interactive/electronic books, *Bee-bot*®
- Software Apps for use on Interactive Whiteboard, iPads and devices, e.g. sensory and interactive games
- Hardware, such as PCs, laptops, CDs and DVDs

## CURRICULUM INTENT

### Pre KS Standard

Learners at this stage are beginning to access electronic devices and ICT programs/software with increasing independence and direct support from an adult.

### COMPUTING CURRICULUM IMPLEMENTATION Pre KS 1 ( Standard 1 and Standard 2 )

Encourage the learner to...

- copy familiar instructions, to use electronic devices, electronic *cause* and *effect* objects, remote control or programmable devices
- engage in activities and learning programs using electronic devices, such as the Interactive Whiteboard, e.g. interactive maths games, singing and signing, Cosmic Yoga or GoNoodle
- start producing sound or image patterns using electronic devices, *cause* and *effect* objects, programmable devices or software programs, e.g. music, sensory, or drawing Apps
- use a familiar, or disability-friendly phone/iPad/electronic device, to make intentional attempts to contact adults or peers, such as family members, following a familiar format previously rehearsed, as well as a set of visual/verbal instructions
- work in a group to give simple instructions to direct programmable devices, such as 'Left/Right', 'Forward/Backward', or '½/full turn', e.g. programming *Bee-bots*®, *Code-A-Pillar*, *Dash and Dot* devices
- use devices, such as iPads or iPods to communicate, to make requests and comment on what they are doing, such as personalised AAC software, or recording Apps, e.g. Voice Memos or Talking Tins
- use devices, such as iPads or iPods to draw pictures, take photographs, record short movies or soundscapes
- Begin to use simple coding programs as part of a group, adult-led activity, e.g. *Espresso* or *Scratch*

## Resources and Environment

**Environment** with opportunities for role play and interaction with a range of ICT, electronic devices, programs and Apps

### Resources to include...

- A range of electronic devices, including the Interactive Whiteboard, iPads, iPod, radio/CD player, electronic and programmable toys/objects, e.g. *Bee-bot*®<sup>®</sup>, *Code-A-Pillar*, *Dash and Dot*, remote control objects/toys
- Software Apps for use on Interactive Whiteboard, iPads, iPods, devices and/or
- Disability-friendly mobile phones, to support student independence, with adult support
- Hardware, such as PCs, laptops, CDs and DVDs

## Intent - Higher Level Communication Pre KS Standards

Control media with intent - This is when a pupil carries out an intentional action in order to activate a known output from an ICT stimulus or familiar program. It might be expected that the pupil acts within a set of simple visual rules or constraints (e.g. symbols or signs to follow a set of simple instructions for a particular action to occur) or a spatial requirement (e.g. the pupil correctly presses a visual button to record, as opposed to touching any area).

## COMPUTING CURRICULUM IMPLEMENTATION Pre KS1 ( Standard 3 and Standard 4 )

Encourage the learner to ...

- use their voices through verbal, symbol or signed responses, to send a voice/video message via a phone App to contact safe known adults, with support
- explore a variety of communication and phone media, or Apps to contact safe known adults, family members or friends, to support pupils' independence, e.g. texting or WhatsApp
- use electronic devices and computer software to record text and pictures in different media, such as to create a PowerPoint as part of an adult-led, or group activity
- explore a variety of video recording devices as part of a group, such as video cameras, phones, iPods or iPads to begin recording short videos or musical performances
- engage in a variety of group projects using recording devices, photo and voice editing programs to make a short movie led by an adult, e.g. *iMovie*, *GarageBand*, or *Podcasts*
- input simple codes in adult-led and small group activities, to program electronic programmable devices, e.g. inputting simple instructions into a *Bee-bot*®<sup>®</sup>, *Code-A-Pillar*, *Dash and Dot*, or a remote control device
- input simple codes to create simple step computer programs with support, e.g. using coding programs, such as *Scratch* or *Espresso*

## Resources and Environment

**Environment** with increasingly structured opportunities to rehearse interaction and engagement with a range of ICT, electronic devices, programs and Apps

### Resources to include...

- A range of electronic devices, including the Interactive Whiteboard, iPads, iPod, radio/CD player, electronic and programmable toys/objects, e.g. *Bee-bot*®<sup>®</sup>, *Code-A-Pillar*, *Dash and Dot*, remote control objects/toys
- Software Apps for use on Interactive Whiteboard, iPads, iPods, devices, e.g. *Scratch* or *Espresso* programming tools
- Disability-friendly mobile phones to support student independence, e.g. *BrainInHand* (BiH)
- Hardware, such as PCs, laptops, CDs and DVDs

## INTENT

### Year 1 Programme of Study

Learners at this stage are interacting with ICT and electronic devices for a range of purposes. They are beginning to create simple coded programs and independently use devices for communication and creative media. Pupils will apply their ICT knowledge to actively engage and interact with the community, supporting their independence and preparation for adulthood.

## COMPUTING CURRICULUM IMPLEMENTATION Year 1 programme of Study

Encourage the learner to ...

- begin to understand what algorithms are, and how to create and debug simple coded programs on a digital device, understanding how to follow precise and unambiguous instructions, e.g. using *Scratch* or *Espresso*
- follow logical reasoning to predict the behaviour of simple programs, e.g. what a *Bee-bot*® will do, following simple problem-solving strategies when it does not work
- use technology to create, organise, store, manipulate and retrieve digital information
- recognise how to use technology and ICT safely and respectfully in the community, such as keeping personal information private and where to go for help and support when they have concerns, e.g. Childnet for young people, NSPCC Online Safety
- use Apps to support their organisational skills and independence for their daily life, e.g. *BrainInHand* (BiH), *Flo My Health Period Tracker* and *Period Tracker & Period Calendar*
- begin using simple photo editor programs and learn how to create simple PowerPoint presentations
- start using a variety of communication phone Apps, including emails to contact safe known adults, family members or friends and support pupils' independence
- begin to learn how to use pre-designed templates, such as word and publisher to design and create documents, such as a simple newsletter or pamphlet using a variety of text and photo editor programs
- develop an understanding of the format and language used to communicate in different media, such as when keeping in touch with peers, safe and familiar adults or applying for a job, to communicate and actively interact with the community, e.g. learning the differences in the language used in texts, emails, informal and formal letters/communications
- to explore and use a variety of video and recording devices such as video cameras, iPods or iPads, to record and edit recordings to create a short movie as part of a group

### Resources and Environment

**Environment** with structured opportunities to interact and engage with a range of ICT, phones, electronic devices, programs and Apps

**Resources to include...**

- A range of electronic devices, including the Interactive Whiteboard, iPads, iPod, radio/CD player, electronic and programmable objects, e.g. *Bee-bot*®, *Code-A-Pillar*, *Dash and Dot*, remote control objects
- Software Apps for use on Interactive Whiteboard, iPads, iPods, devices, e.g. *Scratch* or *Espresso* programming
- Smart and Disability-friendly mobile phones to support student independence, e.g. ***BrainInHand*** (BiH)
- Hardware, such as PCs, laptops, CDs and DVDs
- Childnet for young people, NSPCC Online Safety
- use Apps to support their organisational skills and independence for their daily life, e.g. BrainInHand (BiH), Flo My Health Period Tracker and Period Tracker & Period Calendar

Additional resources/links can be found:

**Complex Communication Support Need Apps** - [access here](#)

[JWS Mobile Phone Policy](#)

[JWS Acceptable Use of the Internet Policy](#)

[Scratch](#) and [Espresso](#) programming

[NSPCC Online Safety](#)

[UK Safer Internet Centre](#)

[Childnet](#)

[ThinkUKnow](#)