

Making Computing Inclusive

“Schools have a responsibility to provide a broad and balanced curriculum for all pupils.”

National Curriculum, QCA, 2008

Teaching and learning

When teaching Computing at Giles Junior School, teachers make sure they respond to pupils’ diverse learning needs. In some activities this may involve extra adult support whilst in others it may involve scaffolding the task to ensure accessibility for all. Teachers consider potential barriers to learning for particular individuals and groups of pupils and provide the necessary support to overcome these barriers.

The curriculum at Giles has been designed to maximise students’ ability to access the activities and learning. For some activities pupils with SEN will be able to take part in the same way as their peers. For others, extra support will be required to ensure all pupils access the learning.

Some children with identified needs – such as behaviour difficulties – may benefit from changes in activities or working with selected others or rest breaks. In these cases it is helpful to discuss and plan with a support assistant who knows the child well. The SENCO, previous class teacher and SLT may be able to offer more in depth advice.

Maintaining an inclusive learning environment

Sound and light issues:

- Background noise and reverberation reduced.
- There is enough light for work on computers.
- Teacher’s face can be seen - avoid standing in front of light sources, e.g. windows.
- Pupils use hearing and low vision aids where necessary.
- Video presentations have subtitles for deaf or hearing-impaired pupils and those with communication difficulties, where required.
- Interactive whiteboards are non-reflective to reduce glare.
- Computer monitors can be positioned to reduce glare

Seating:

- Pupils should be able to see and hear clearly, as necessary: the teacher, each other, the whiteboard.

- Seating allows for peer or adult support.
- There is room for pupils with mobility difficulties to obtain their own resources, equipment and materials.
- Furniture is suitable (choice of chairs and desks, e.g. adjustable heights, raised boards).
- Pupils with motor impairments have appropriate assistive technology and software to support them and enough space to use it.
- There should not be a need to copy lots of information. For example, notes on interactive whiteboards can be printed off for all pupils.

Resources:

- Resources should be accessible and within reach.
- Labelled clearly to encourage independent use, e.g. using images, colour coding, large print.
- Racks should be used for storing so resources can be found easily and put away in the correct place, e.g. pens and scissors.
- Children who require specialist equipment e.g. adapted computers, should have access to them
- Drawing aids such as templates, grids and view finders should be accessible.

Displays

- Should be accessible, within reach, visual and tactile.
- Informative and engaging.
- Not distracting.

Low-arousal areas

- Pupils on the autistic spectrum may become deeply involved in working in isolation on a computer. They will benefit from clear preparation and support when returning to a group.
- A low-arousal area is prepared for any pupils that may need it. It has only immediately relevant materials/resources to minimize distraction.
- The students should be prepared in advance for ending the task on the computer and praised when they manage to do so

Health and Safety:

- Issues should have been considered e.g. trailing leads secured, steps and table edges marked.
- Plenty of room for children with mobility difficulties to leave the site of an accident.
- Important to remember that children with ASD may have a low awareness of danger.
- Children are given breaks from tasks such as data entry.
- Pupils are protected from, and taught how to deal with, abusive behaviour such as cyber-bullying - helping to maintain their psychological well-being.

Multi-sensory approaches including ICT

Multi-sensory approaches:

- Pupils' preferred learning styles are identified and built on.
- When teaching, visual/tactile/auditory/kinaesthetic approaches are used, such as supporting teacher talk with visual aids; using subtitled or audio-described film/video.
- For recording - alternatives to written recording are offered, e.g. drawing, scribing, word processing, mind maps, digital images, video, voice recording.
- To promote security and aid organisation - e.g. visual timetables are used to show plans for the day or lesson; visual prompts for routines, such as how to ask for help; shared signals are developed so that pupils can convey their understanding, uncertainty or need for help.
- Children should be allowed time for sensory exploration when working with new materials.
- Children should be allowed time to use different parts of their bodies as tools, such as hands and fingers, as well as making connections to manmade materials in their natural environment.
- Children could create sensory stories to support their art understanding and development.

ICT:

- Accessibility features are used to include pupils with SEN and disabilities, as appropriate: keyboard shortcuts instead of a mouse, sticky keys, foot controlled mouse/wireless mouse, screen filters to cut down glare, increased font sizes, clear font type, appropriate contrast between background and text, talking word processor to read out text.

Working with additional adults

Consulting pupils:

- Wherever possible, pupils are consulted about the kind and level of support they require.

Planning support:

- Support from additional adults is planned to scaffold pupils' learning, allowing them increasingly to work independently.
- Planning should identify: which individuals/groups will receive support, where in the lesson pupils will need support, the type of support pupils should receive, and when pupils should be allowed to work independently.
- Additional adults should: be clear about the lesson objectives, know the sequence of the lesson, understand the lesson content, know how to break tasks into more manageable chunks, are provided with key questions to encourage formative assessment, and where appropriate, are familiar with any ICT used to support pupils.
- Effectiveness of support should be regularly monitored and reviewed.

- Teachers must consider the art activity and decide how best to support children with SEN/disabilities.

Managing peer relationships

Grouping pupils:

- All forms of pupil grouping include pupils with SEN/disabilities.
- Manageable mixed-ability grouping or pairing is the norm, except when carefully planned for a particular purpose.
- Sequence of groupings is outlined for pupils.
- The transition from whole-class to group or independent work, and back, is clearly signalled (this is key for autistic children).

Managing group work and discussion:

- Pupils move carefully from paired discussion to group discussion (the language necessary for whole-class discussion work may be a barrier for pupils who find it difficult to express themselves in public. Paired and small group discussions provide opportunities for all to take part).
- Pupils should be assigned specific roles to keep them focused and active, e.g. writer, reporter, observer.
- For some pupils, e.g. those on the autistic spectrum, developing ideas with others can be challenging. Pairings and groupings need to be sensitive to this.

Developing responsibility:

- Pupils with SEN/disabilities should be given opportunities to present their work to class and fulfil their role in group tasks.
- Pupils should be involved as equal contributors in class/governance and decision making.

Adult-pupil communication

Teachers' communication:

- Language used should be clear, unambiguous and accessible.
- Key words, meanings and symbols are highlighted, explained and written up, or available in some other way.
- Instructions are given clearly and reinforced visually, where necessary.
- Wording of questions is planned carefully, avoiding complex vocabulary and sentence structure.
- Questions are prepared in different styles/levels for different pupils - careful preparation ensures all pupils have opportunities to answer open-ended questions.
- Alternative communication modes are used, where necessary, to meet pupils' communication needs, e.g. signing.
- Text, visual aids, etc are checked for clarity and accessibility. E.g. some pupils might require adapted printed materials for coding instructions.

Pupils' communication:

- Alternative communication modes, such as sign or symbol systems, are encouraged, and pupils' contributions valued.
- Advice is sought from the SENCO, speech and language therapist, pupil themselves and Computing lead on the best way of using such communication modes in lessons.
- Discussion of experiences and investigations is encouraged to help pupils understand them.
- Pupils should be allowed time to discuss the answers to questions before verbal responses are given.
- Pupils with communication impairments are given: time to think about questions before being required to respond, time to explain, and respect for their responses to questions and contributions to discussions.

Assessment

Assessment for learning:

- Lesson objectives are made clear in pictures/symbols/writing as appropriate.
- Objectives are challenging, yet achievable. This will promote self-esteem and enable pupils to achieve success.
- Pupils' own ways of learning and remembering things are emphasised.
- Pupils are encouraged to talk about how they achieved something.
- End of lesson discussions focus on one or more of the ideas explored and the progress that pupils have made towards them during the lesson.
- Pupils are encouraged to look back on previous work/journals to see how much progress they have made.
- Emphasis is on the pupils' progress and achievement. Weaknesses are presented as areas for development.
- Praise is given discreetly where pupils find public praise embarrassing or difficult.
- The number of goals/assessment criteria is kept small.
- Pupils are involved in setting their own goals.
- Self-assessment and peer assessment are encouraged.

Memory and consolidation

Memory/consolidation:

- Recapping previous learning is key.
- Main points from the lesson are fed back by pupils, noted down and saved so pupils can refer back to them.

Bilingual learners

Children must not be regarded as having a learning difficulty solely because the language or form of language of their home is different from the language in which they will be

taught.

Bilingual learners can take up to two years to develop basic communication skills. Some learners may take a long time before they feel confident and comfortable to participate in classroom activities. Silent periods are common and should not be seen as a learning difficulty.

Differentiation and adaption:

Task differentiation examples:

- Giving children an option between a challenging task and a slightly simpler version - they have the autonomy to pick which they want to do
- Provide children with a tick list to aid them working through their task so they can follow the steps independently, whilst ensuring they have completed each one.
- Making tasks optional - e.g. extension tasks/homework etc.
- Allocation of time
- Scale down an activity to support children with SEN - e.g. completing coding to draw a square rather than calculating their own angles for a pentagon.
- Changing the media if there is a sensory issue or barrier

Feedback:

The way you provide verbal feedback to children should depend on age, ability and individual needs or SEN/disabilities a child may have. Ensure all constructive criticism is positive and consider a 'positive sandwich, e.g. positive comment, constructive feedback, positive comment'.