

Digital Technology

Category: Early Years

Risk Management and Legal Implications

Failure to manage risk may impact on the delivery of Service objectives and the outcomes achieved by Service users. Education and Children's Services aim to mitigate the implications by ongoing management and review of risk in all elements of work activity.

The production of this document is one way in which we aim to reduce our exposure to risk. By providing staff with information on good practice, making reference to other guidance that is available across the Council and providing clarity on how we should do things, we can ensure that the management of risk is intrinsic to what we do.

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Digital Technology

Digital technology plays an integral part in all of our lives. Children today are growing up surrounded by and becoming familiar with a range of digital technology. Through play opportunities children can experience a range of resources that support their ICT knowledge and understanding as well as enhancing transferable digital technology skills. Through the breadth of learning integrated across the early years curriculum children will have the opportunity to develop their cyber resilience, understanding of computer science and digital literacy. They will be able to explore and investigate the early stages of coding through their engagement with programmable toys which will develop computer science skills as well as early literacy and numeracy.

“The key to all successful early learning as discussed previously in this guidance are the experiences, interactions and environments we provide for our children. Rapid developments in digital technologies at home and outside, are everywhere. They are changing our habits and, in some cases, making our lives easier and more enjoyable. Mobile phones; tablets; washing machines; televisions; automatic doors; online shopping and “Smart” homes are a few examples of interactive technologies babies and young children may encounter as they grow.

Children can use any resource to promote their learning in at least two different ways. They can learn about a resource, and then use this knowledge to learn with it.”

(Realising the Ambition – Being Me)

ICT in the early years is the introduction of “cause and effect”, supporting children to understand how basic technology works and can be used within their everyday lives. ICT needs to be planned and creatively used throughout the curriculum and across all areas of learning both indoors and outdoors.

It is important that children recognise that a range of technology is used in places such as homes and nursery, shops and offices. They should learn to select and use technology for particular purposes.

It is important that all staff understand that digital technology in early years is not restricted to using a computer or laptop it is much more varied and embedded in everyday experiences.

For younger children, digital technology is having access to battery-operated mobiles above their cots, toy radios and televisions with wind-up mechanisms, and toys with parts to press or lift. These simple “cause and effect” toys help them to investigate how their actions have an effect on the resource, e.g., a button pressed makes a rabbit pop up, or a switch makes the farmyard door open.

Sensory rooms often have equipment that allows the children to operate the different resources. For example, by pressing a large button on the “talker” box the child can



choose which colour the light will be in the bubble tube. The bubble tube is the “listener”, receiving the information and actioning it.

For older children using a remote control to change channels on a television set or start playing a DVD is an example of cause and effect in real use.

Digital technology resources can greatly benefit children who have a language barrier. Many of the resources will support children to learn language in a fun and interactive way and overcome any challenges to learning.

Practitioners need to support children to understand that digital technology is part of everyday life and is normally used to keep us informed or to make life easier for us. Where possible give children the opportunity to use digital resources for themselves to develop independence, e.g. allowing them to make copies of their pictures on the office photocopier.

Here is a list of some of the digital equipment we have in nursery to support the development of ICT skills:

- Rechargeable toys e.g., torches, earphones, remote control cars, pegs
- Digital cameras
- Digital microscopes
- Bee-bots
- Digital talking boxes, talk points, postcards
- Easi-view visualiser
- Roamers
- Robots
- Remote control vehicles
- Interactive Boards
- Televisions

STEM

Technology is a crucial component of any science, technology, engineering, and mathematics (STEM) activity. Technology may contribute to the design and implementation of the STEM activities in multiple ways. Children’s play activities will have a significant impact on their knowledge, for example of different materials for engineering or construction technologies; and in skills development such as through creative uses of digital technologies such as cameras and microscopes. These experiences are successful in laying the foundations of learning in the technologies, based on motivating activities which have been well designed to address the early level Experiences and Outcomes as set out in national advice.

Technology embedded properly across the early years curriculum supports children to find solutions to problems in a creative and challenging manner, to become innovative and to develop higher order critical thinking skills.



STEM activities provide 'hands-on' and 'minds-on' activities for the children. Making math and science both fun and interesting helps the children to do much more than just learn.

"There is no greater natural scientists and engineers than young children. Inquisitive learners who learn STEM concepts through play. High quality early learning environments provide children with the structure in which to build upon their natural inclination to explore, to build and to question'.

(JD Chesloff shared by Pae Pica in 'What, Teaching STEM in Pre-school, Really?')

Digital literacy in nursery

Digital literacy plays an increasing part in daily life. Children will see digital products such as computers, iPads, tablets and telephones in use when they are out and about. At home, each family's circumstances make for a wide range of experience for individual learners.

'Realising the Ambition – Being Me' promotes a learning environment which supports curiosity, inquiry and creativity' and which gives opportunities to incorporate different technologies and use this in their learning. It endorses the need to provide an environment which encourages inquiry and invites discussion and exploration with interesting objects to talk about and explore, stimulating curiosity. It validates the need to provide children with an environment which uses technologies to widen children's experiences to different methods of communication.

The emphasis should be 'on learning with and through digital technologies, rather than about digital technology will best enhance children's early learning'.

(Realising the Ambition – Being Me)

What will the children learn?

In the early years digital literacy resources are best used as a way to encourage social interaction, develop language and enjoy working with other children or adults. Using computers, tablets, iPads, Smart Boards can help children:

- develop hand/eye co-ordination and fine motor skills
- concentrate for longer periods of time
- practice number and pre-reading skills
- improve listening skills
- follow instructions and search for information
- develop mouse and keyboard skills
- understand ways digital content can be created by themselves, as well as consumed
- feel a sense of achievement

Organising digital literacy resources in the playroom

The computer or interactive board needs to be:

- in a well-lit area with its back to any source of reflection
- near a power socket to avoid trailing leads with plugs and terminals inaccessible to children
- away from sand and water



- where there are other people to talk to and take an interest

It is important that children are seated at the right height to use the keyboard and mouse and are not looking up at the screen. Looking straight at it is acceptable but looking down at an angle of 30 degrees is better.

The basic skills of using a computer include:

Controlling the mouse

Some children find it easier to learn using a track ball which can be used with two hands – one for moving the cursor and one for clicking. Used with a conventional mouse an adult and child or two children can work together, taking turns.

Painting programmes are useful for children to explore the way the mouse works. They can start with spots (move the mouse then click once) to get the idea and move on to lines and changing colour. Click and drag programmes are useful.

Using the keyboard

Children should be aware that the keyboard has letters and numbers. Start by showing the children these keys and explain how to press one at a time if they don't want a row of the same letter. Show them how to back space so that they can remove unwanted typing. They will also need to learn about the return/enter key, the space bar and the direction arrows. Specialist keyboards with oversized keys can be used to support individuals with fine motor needs.

The Role of the Adult

"Practitioners need to use guided interaction and support for the young child in their exploration of digital technology, and at all times digital technology should reflect the distinctive nature of young children and how they learn"

(Realising the Ambition – Being Me)

Technology can play a role in supporting early communication, language and literacy. It can offer new learning opportunities, through eBooks, online educational games and interactive learning tools. It allows practitioners to co-construct with children; to extend and scaffold their interests in order to find the answers to their questions by searching and finding out information together.

It is strongly advised that, just like a book, technology is used as a tool for learning and play, rather than as a replacement for adult interaction. All ELC practitioners should model best practice to engage in guided interactions based on observations of children's play patterns and sensitively monitor their use of digital technology.

As with all other areas of the nursery, it is crucial that staff ensure that all children enjoy and experience a well-balanced curricular experience during their nursery day and accessing the computer or other digital resources is no different. A small number of children might like to spend excess periods of time at a computer, smart board, ipad or particular toys and it is the staffs' responsibility to monitor this. Children who spend long



periods of time accessing only certain areas of the core provision should be encouraged to and guided to engage with other areas. This can be encouraged through discussions using the 'looking back, looking forward' sections of the PLJs during parent chat sessions.

Similarly, individuals who avoid or are less confident using digital materials can be supported to engage with them and become more comfortable. Staff should, where possible and appropriate try to consider the individual's home provisions to inform this balanced approach. It may also be beneficial to involve the children in conversations and dialogues whereby safe rules are encouraged and agreed and where visual supports are put in place to support all children.

"High quality interactions with others is key when learning how to use them; guided interactions from an adult when learning through them; and; when learning about them. Importantly, there is a need to constantly evaluate their purpose and be mindful that digital technologies are not dominant in a young child's life."

(Realising the Ambition – Being Me)

Practitioners should celebrate children's achievements, whilst remaining vigilant in ensuring that children themselves, parents and carers, do all they can to promote equality of interest in digital technologies. Digital technology activities are generally popular with almost all children, and, for many, represent a particular source of motivation and interest.

A well organised computer area shows commitment to digital technology in nursery. Embedding digital technology across all aspects of the curriculum will support equity for our learners. As in other areas of learning, young children will develop confidence through early hand-on use at their own level. More than that, parents and practitioners can use digital technology to support and extend children's learning. Displaying a positive outlook to digital technology with high aspirations for all learners will encourage our children to build on their skills to aid progress across the early level and develop skills for life.

Staying safe on the internet

We will follow Fife Council's Internet Use Guidance to ensure safe and reasonable practice for internet use in our setting.

Further reading:

Digital play and under 5's, Dr Lydia Plowman
Christine Stephen – Digital Play