

ICT in the foundation stage

Our children are growing up in an ICT-rich environment. We need to give them meaningful ICT experiences in school.

This document contains short case studies of the use of ICT in the foundation stage. It includes:

- six case studies for each of the three ICT stepping stones
- five case studies for the ICT early learning goal.

The ICT stepping stones are:

- yellow: show an interest in ICT
- blue: know how to operate simple equipment
- green: complete a simple program on the computer and/or perform simple functions on ICT apparatus.

The ICT early learning goal is: find out about and identify the uses of everyday technology and use information and communication technology and programmable toys to support their learning.

The ICT stepping stones and early learning goal are in the 'Knowledge and understanding of the world' section of Curriculum guidance for the foundation stage.

We hope that these case studies will give you ideas for work in your own setting. They may prove to be a starting point for developing the use of ICT with your pupils.

ICT is not just about computers, and only six of the case studies involve direct use of a computer. The remaining five case studies focus on other ICT applications such as music keyboards, programmable toys and role-play in ICT situations. Even if you are short of equipment in your setting you should be able to find activities here that you can do.

The list of activities is not exhaustive and not everyone will do every activity. However, the activities are examples of good practice across the country.

Although they are classified as 'ICT', many of the activities are wider life experiences. You will find that they often fit alongside other parts of the foundation stage curriculum. Where you choose to use them and fit them into your overall plan is up to you. They are not in any order, and learning in one does not depend on any of the others.



Yellow stepping stone: show an interest in ICT

Examples of what children do

Office equipment

On a visit to the school office Leanne, Hannah, Lee and Callum watch the school secretary using the photocopier, fax, email, telephone and computer. Leanne is particularly interested by the photocopier and she is helped to photocopy a picture she drew earlier that morning. She then asks if she can take them both home to show her family. The children use photographs taken during the visit and talk about what they could include in an office role-play area.

Answerphone message

As soon as Chloe and David arrive at nursery they make straight for the role-play area and listen carefully to the latest answerphone message. They enthusiastically put the washing on and phone the dentist.

Digital camera

Rebecca spends some time watching a practitioner who is using the digital camera to take photographs of the children's junk models. She asks him why he is taking the photographs. Rebecca is fascinated when she can see all the photographs that have been taken over the last week. Very soon a group of children has gathered round the computer to watch the slide show.

Remote-controlled cars

Kyle watches Ellie as she parks the remote-controlled car in a garage that has been set up outside. He asks Ellie how it works. Ellie shows him and lets him have a short go. Later he goes back to the activity and tries to park the car by himself.

Painting and drawing

All the children watch with great interest as the practitioner 'draws' by taking line for a walk around the interactive whiteboard. They are all eager to have a go. Katie returns to the board on a number of occasions throughout the morning. She asks a practitioner to show her how to change the colour and rub out. With the support of the practitioner she explores the icons on the toolbar.

CCTV and webcams

On a visit to the local supermarket Mustafa is very excited when he sees himself on the CCTV screen. The children all try to look for the camera. The excitement is maintained when the webcam is set up in their supermarket role-play area. Mustafa is captivated by seeing himself move on the monitor.

What does the practitioner need to do?

The practitioner encourages the children to find out what the secretary is doing, using which pieces of equipment and why. The practitioner builds on Leanne's interest by suggesting she uses the photocopier to copy her drawing and then helps her to operate the machine using office vocabulary and open-ended questions. Following the visit the practitioner asks the children what equipment they could include when they set up their office role-play area. Over the following weeks the practitioner models the use of the equipment and uses photographs taken during the visit to prompt discussion.

The practitioner records a different answerphone message for the children to listen to each day. She has previously modelled playing back a recorded message and responding appropriately to its contents. She encourages the children to use the answer machine and to listen to and act on messages. Today's message is 'Please can you call the dentist as I have a sore tooth and need to see the dentist. Please will you put the washing on.'

The practitioner explains to Rebecca what he is doing and answers her questions as he takes a series of photographs. He then shows her these and the other photographs stored on the memory card on the camera display. In response to Rebecca's interest he displays all the photos from the week on the computer, which stimulates interest from a larger group of children. The practitioner leaves the photographs on a rolling slide show for all the children to look at and talk about throughout the day. Appropriate language is modelled by the practitioner. Over the course of the day other practitioners take time to view the photographs with the children.

The practitioner facilitates the free play of the remote-controlled cars and trucks and the garage in the outside area. He observes the children's interaction and notes how well they have cooperated in taking turns and sharing the toy. These observations for assessment are then collated for the children's profiles.

The practitioner models how to take a line for a walk on an interactive whiteboard using a paint programme. The paint programme is set up for the children to explore throughout the morning session. When the children ask her how to rub out she encourages them to explore the different icons on the toolbar. At the end of the session the practitioner asks the children to show each other what they can now do using the paint programme.

The practitioner asks the children if they can point out any ICT in the supermarket. With some help from the practitioner they discover the many uses of ICT within the supermarket, including the use of CCTV, bar-code scanners, bakery ovens, weighing scales and cash points. To stimulate their interest the practitioner has arranged for the children to take turns using some ICT equipment, for example the price checker, weighing scales and scanner. In response to the children's excitement at seeing themselves on CCTV in the supermarket the practitioner sets up a webcam in the supermarket role-play area.

Blue stepping stone: know how to operate simple equipment

Examples of what children do

Taking photographs

At first Molly has difficulty holding the camera still while she takes the photographs, and they appear blurred. With the support of the practitioner she persists and manages to take a picture of the plants they have grown. She is then able to show Chris how to use the camera.

Playing the keyboard

Abigail and Terry explore the musical keyboard and play a 'tune'. Abigail shows Terry which buttons to press to change instrument.

Walkie-talkies

The children initially require support when using the walkie-talkies in the role-play area but are soon able to use them independently. On one occasion Ahmed takes the part of the checkout assistant in the shop inside and Lily's role is to fetch the plants the customer buys from outside. They use walkie-talkies so that Ahmed can tell Lily what to fetch.

Playing tapes

Stephan, Nicola, William and Katherine decide which story tape to listen to first. Stephan is able to put the tape into the tape recorder and presses play. At the end of the story he rewinds the tape and puts it away. They choose another tape but Nicola has difficulty putting it in the machine. Stephan shows her which way up it needs to go in. She remembers how to press play to start the tape but at the end of the tape Stephan has to show her which are the stop and rewind buttons.

Food mixer

Josh turns on the handheld food mixer and gradually speeds up the blades. The practitioner suggests that Josh tries to mix the cake mixture with a wooden spoon, so he has a go but finds it hard going. He goes back to using the food mixer.

Interactive books

Matt is part of a small group at the computer reading an interactive version of a book. He is able to use the mouse to turn the pages to find his favourite page. He moves the cursor over the page and finds the hot spots on the page. Later in the week he is able to show Yasmin his favourite page and how to find the hot spots on each page.

What does the practitioner need to do?

The practitioner has promoted an environment of trust by allowing the children to use the ICT equipment available as independently as possible. The practitioner asks the group of children when they have seen a camera being used or have used one themselves. He then asks them if anyone knows how to use the digital camera. Together they talk about how to switch it on, take a photograph and display the photograph they have taken. The practitioner then helps the children to decide what photograph they each want to take to form part of a display about activities they enjoy.

An electronic keyboard is placed in the music area. The practitioner allows the children to explore the functions of a musical keyboard freely. He later asks the children to talk about what they have discovered they can do with the keyboard.

Following a television programme about garden centres and a visit to a local garden centre the practitioner and the children set up a garden centre both inside and outside their setting. The practitioner talks with the children about what they have seen. One of the children remembers the staff at the local garden centre using walkie-talkies to communicate. Once the role-play area has been set up the practitioner ensures that the children know how to use the walkie-talkies. She engages in role play with groups of children modelling the type of language used.

At the beginning of the session the practitioner demonstrates how to stop, play and rewind a tape. The practitioner listens to a talking book with a group of children and encourages them to show each other how the tape recorder works. The symbols have been displayed in poster format in the listening area so the children can find the matching stop/play/rewind symbol on the tape recorder.

As each child starts to use the handheld food mixer the practitioner reminds them how to use it safely. The practitioner encourages the children to think about how using the mixer helps them to make the cake. The practitioner initially supports each child when they use the controls on the food mixer until they are able to change the speed safely and confidently.

The practitioner and a small group of children read an interactive book on the computer. They have previously read a paper version of the book. He asks different children to click the mouse on the parts of the book and they discover together that to turn a page you need to click on the arrow. The practitioner allows the children to use the mouse to explore each page and experiment with the sound and animation features of the story. The practitioner asks the children if they can tell him how the interactive book is the same and how it is different from the traditional paper version of the story. The interactive book is then made available throughout the week for the children to explore independently.

Green stepping stone: complete a simple program on the computer and/or perform simple functions on ICT apparatus

Examples of what children do

Recording learning

Alice is very proud of the tower with the big bricks and asks a practitioner if she can take a photograph of it to take home. She goes and fetches the digital camera, puts in her floppy disk and takes a picture of it with confidence. With the help of a practitioner she then opens her photograph on the computer and later prints it off.

On the road

Lauren and Stuart programme the programmable toy so that it moves along a road the practitioner has drawn outside. Stuart uses chalk to extend the road. They begin to use the correct language to describe how the programmable toy needs to move, and count out the number of times they press the forwards or backwards buttons.

Using drawing tools

Harry is using the interactive whiteboard. He selects the symmetry tool and draws a pattern on one side of the page. He chooses which colour he wants and changes the brush size. He enjoys watching the computer draw the other half of the picture. When he has finished he prints his picture out.

Digital microscope

Megan uses the digital microscope to look at the leaves she has collected. She focuses the image, then increases the magnification and refocuses the image. She talks about the veins she can now see. With the support of a practitioner she takes a snapshot of the image and prints it out to display in the laboratory.

Sing-along tape recorder

Brent and Nina take turns singing into the microphone on the sing-along tape player. Yen uses a tape recorder to record their singing. He then rewinds the tape and they all listen to the recording.

Character making

Lynn and Dexter are working together using a website to create their own 'Mr Men' character. They decide to create a Mr Angry and are able to select the appropriate facial features, accessories and colour choices. They explain to the practitioner why these make him look angry. When Mr Angry is complete Lynn prints him out.

What does the practitioner need to do?

The practitioners encourage independent use of the digital camera if the children have made or found something they want to photograph. Each child has been provided with their own floppy disk to use with the camera. Once a child has taken a photograph the practitioner helps them to open the image on the computer, enabling them to show their picture to others in the setting. Later the practitioner helps the child to print some of their pictures to take home or to use in the learning environment.

The practitioner has planned an activity for the children to investigate moving the programmable toy along a road. The practitioner uses chalk to draw a road on the concrete and encourages the group to try to move the programmable toy along it. The practitioner talks to the children about the language of direction – forwards, backwards and turn. They count together the number of times they press a button. The practitioner then encourages the children to draw their own roads.

The practitioner demonstrates how to use the symmetry tool on the interactive whiteboard. The children help the practitioner to change the colours and the size of the brush. The practitioner selects two children who come up to the board and add different coloured spots to the practitioner's butterfly. There is a graphic tablet linked to one of the computers in the classroom, which the children can choose to use rather than the mouse. The practitioner works alongside the children to produce a display on symmetry that includes paintings and computer-generated pictures.

The practitioner has created a science laboratory role-play area in the classroom. The practitioner organises a nature walk and encourages the children to collect things they would like to view using the magnifying glasses and the digital microscope linked to a computer in the laboratory. The practitioner works in the laboratory alongside the children discussing with them what they can see when they use the microscope.

The practitioner has placed a sing-along machine and tape recorder in the listening area. The practitioner helps the children to choose songs using rewind and play. She plans for them to take turns in singing along while another child records it, and for them to play back and listen to their recordings.

The practitioner has used the Mr Men and Little Miss storybooks to talk about emotions and feelings. The practitioner demonstrates the use of a website activity, make-your-own Mr Men, and with the children selects facial features, accessories and colour choices to create a Mr Happy. The practitioner then supports pairs of children as they design their own Mr Men or Little Miss character.

Early learning goal: find out about and identify the uses of everyday technology and use information and communication technology and programmable toys to support their learning

Examples of what children do

ICT at the airport

In the airport role-play area Darren takes the part of the check-in assistant. He checks a passenger's ticket and types her name into the computer. He tells her that her name is on the computer. He then says 'Please wait over there, madam.' Osman tells her that it is time to get on the plane and she puts her hand luggage on the conveyor belt so it can be x-rayed. Max checks the x-ray and gives her back her bag. Osman fetches the walkie-talkies as he decides he wants to use them to communicate with the check-in assistant. He gives one to Darren who then uses it to tell him when there is a passenger in the waiting area.

Medical equipment

On a class visit to the local doctor's surgery the children learn about the uses of the different equipment. The doctor shows them how it all works and what it is for. For example, they discuss how the electronic thermometer can take their temperature and that if it tells the doctor they are too hot, he then knows they are ill. George remembers that his mother took his temperature last week when he was ill. The following day when they are setting up their doctor's role-play area George remembers that they need to have a thermometer so that they can use it to take the patient's temperature. Later he shows Zara how to use this and the other equipment in the surgery.

Programmable toy – delivering letters

Using a programmable toy, Edward puts the post van on the number line by the post office. He counts how many squares it needs to move to reach the first house he has a letter to deliver to. He presses the forward button the right number of times, presses go and the post van moves along the road to the first house. The children count out the numbers on each square as it travels over them. When the post van stops at house number four Daniel counts how many squares it now needs to move to house number seven.

Talking book

Kim and Charlotte are exploring a talking book on the computer. Charlotte 'turns' the first page and attempts to read some of the words in the sentence on the page. They click on the appropriate icon and listen to the sentence as it is read to them. Kim asks Charlotte to make it read it again and this time she reads along with it. Kim clicks on the animation icon and they giggle as they watch the animation. Kim repeats this a number of times. They move through the book and they listen to the sentence and watch the animation on each page. They happily find their favourite animation for the practitioner and then show what it does. Charlotte and Kim are able to read out some of the key words. They discuss the whole story with the practitioner.

Slide show

On a visit to a farm the children take turns to use the digital camera to take photographs of the things they see. The following day the children look through the photographs and they happily discuss the events of the previous day. The children help the practitioner reorder the slides she has prepared using presentational software until they match the order in which things really happened. Later they take turns recording a sound caption for the pages. Marco was especially excited by the tractor and had his photograph taken when he sat in the cab. He records the following: 'I sat in the farmer's tractor.' The children are eager to access the completed presentation over the following week and it prompts them to remember the day in some detail.

What does the practitioner need to do?

The practitioners have regularly worked with groups of children in the role-play area. They have helped the children think about the use of the ICT equipment at the airport check-in desk, and the children are now able to talk about why the check-in assistant is using the computer and what information he would be looking for. The practitioners have modelled the type of language the airport staff would use.

The practitioner plans a visit to the doctor's surgery to help the children design their own role-play area. During the visit the practitioner encourages the children to take note of the equipment they see and how the surgery is set out. When they return to their setting the practitioner allows the children to brainstorm in small groups their ideas and feed back to the whole group. The group decides what they will need and helps to set up the space designated for the role-play activity. The practitioner includes a computer program designed for a doctor's role-play where the children can input real data and print out prescriptions.

The practitioner sets up a number line making sure each number square is equal to one length of the programmable toy (one button push makes it move forwards/backwards its own length). The practitioner places houses along the number line for the post van (programmable toy) to deliver letters to. He models counting forwards and backwards as the post van moves to deliver each letter, encouraging the children to count with him and predict how many squares the post van will need to move. The practitioner asks questions such as 'The van is at house number four. How many more squares do we need to move to deliver the next letter to house number seven?' and 'What would you do if you pressed the button too many times?'

The practitioner sets up a talking book that stimulates their interest for the children to explore and which stimulates their interest. The practitioner has provided similar opportunities on a number of occasions and has set this activity up as an independent activity. When the children have read the book the practitioner discusses the story with them and they share the part of the book they like best. He highlights some of the key words that are repeated in the text.

The practitioner plans to use a series of pictures to help the children recount their visit to a farm and supports children taking pictures, with a digital camera, which show the main events of the day. Back in their setting the practitioner views all the pictures with small groups, asking the children what was happening at that point in the day. The practitioner discusses with the children the order in which the six events happened, sorts them within the presentation and asks the children to think of what happened next. Later individual children are helped in recording a sound caption for each picture. The practitioner shares the presentation with the whole group and makes it available during the rest of the week.