



Development of Skills

In the Technologies Principles and Practice paper, it is stated that:

“Well-designed practical activities in the technologies offer children and young people opportunities to develop:

- curiosity and problem-solving skills, a capacity to work with others and take initiative
- planning and organisational skills in a range of contexts
- creativity and innovation, for example through ICT and computer aided design and manufacturing approaches
- skills in using tools, equipment, software and materials
- skills in collaborating, leading and interacting with others
- critical thinking through exploration and discovery within a range of learning contexts
- discussion and debate
- searching and retrieving information to inform thinking within diverse learning contexts
- making connections between specialist skills developed within learning and skills for work
- evaluating products, systems and services
- presentation skills.”

Significant aspects of learning in technologies

Through careful planning, using the experiences and outcomes in business; computing science; food and textiles; and craft, design, engineering and graphics, learners will have opportunities for:

1. **finding, discussing, organising and evaluating information through the technologies**
 - searching and retrieving information to inform thinking
2. **understanding how technological products work and how they affect people**
 - critical thinking through exploration and discovery within a range of learning contexts
 - discussion and debate, skills in collaboration, leading and interacting with others
 - problem solving skills through exploration.
3. **planning and organising technological activities**
 - planning and organisational skills in a range of contexts
 - skills in using tools, equipment, software and materials
 - creativity and innovation, for example through ICT, computer-aided design and manufacturing approaches
 - making connections between specialist skills developed within learning and skills for work evaluating products, applications, systems and services presentation skills

Using the Significant Aspects of Learning, the Progression Framework and the skills listed in the Principles and Practice paper, the following framework has been drawn up to show the development of skills from Early to Second Level.

How to use this programme:

By looking at the development of skills and the Experiences and Outcomes for Technologies, a programme has been drawn up to ensure coverage of all areas across Early, First and Second Level. A list of suggested topics has also been given, which may be adapted to suit the needs and interests of a class. The suggested topics may be used as a guide to ensure that all Experiences and Outcomes are covered over the course of a level. Some topics across First and Second Levels have the same title, but by using the skills required for each level as a guide, appropriate tasks and experiences can be planned accordingly. Bundles may also be incorporated into IDL topics, where appropriate.

Monitoring, Tracking & Assessment:

Teachers from similar stages plan together and meet throughout the year to discuss learning and teaching strategies. There are transition processes in place between Nursery and P1, and also between stages. This includes a formal meeting between teachers and the completion of a hand-on sheet. This informs teachers of levels achieved, work covered and next steps. This information is used for the next stage in planning. Assessment is carried out through: teacher observations; self and peer assessments; end of topic assessments. Moderation occurs through specific moderation topics, as part of LQAG work, and ongoing moderation discussions where standards are shared and agreed.

	Early Level (Nursery-P1)	First Level (P2-P4)	Second Level (P5-P7)
Development of Skills	<p>Recognise different types of technologies.</p> <p>Discuss how technologies can help us in our lives.</p> <p>Demonstrate ways in which we can care for the environment.</p> <p>Solve problems using software.</p> <p>Use software to present ideas, thoughts or information.</p> <p>Communicate with others using technology.</p> <p>Reproduce experiences from the world around me using photographs or sound and images.</p> <p>Solve problems using electronic games and toys.</p> <p>Discriminate between different types of food in order to make healthy choices.</p> <p>Choose and prepare different types of foods.</p> <p>Discuss my thoughts with others.</p> <p>Select and use a range of materials, tools and software.</p> <p>Construct models, using natural curiosity and imagination.</p> <p>Express and show ideas in different ways.</p>	<p>Describe the ways in which technologies in the wider world can help us.</p> <p>Generate, discuss and develop imaginative ideas to create a product of the future.</p> <p>Question current news items of technological interest.</p> <p>Devise ways of conserving materials and resources and their impact on the environment.</p> <p>Apply knowledge of features of different types of software to find, organise, manage and access information.</p> <p>Access, retrieve and use information from electronic sources.</p> <p>Experiment with features and functions of computer technology.</p> <p>Capture sounds, text and images to communicate information.</p> <p>Describe the different jobs involved in running a business.</p> <p>Use technology safely when interacting and sharing ideas or information with others.</p> <p>Solve problems using co-ordination and navigation in electronic games and toys.</p> <p>Prepare simple healthy food and drinks.</p> <p>Illustrate the journeys foods make from source to consumer.</p> <p>Identify different issues that must be considered when preparing and cooking food.</p> <p>Use problem solving strategies to meet design challenges with a food or textile focus.</p> <p>Evaluate work and adapt and improve where appropriate.</p> <p>Construct 3D models using materials, tools or software.</p> <p>Estimate and measure using appropriate instruments.</p> <p>Use problem solving strategies to construct models.</p> <p>Show ideas using manual or electronic drawing and colouring techniques.</p>	<p>Use technologies to design or improve ideas or products.</p> <p>Explain how an everyday product has changed over time.</p> <p>Discuss the link between scientific and technological developments.</p> <p>Analyse the impact lifestyle can have on the environment.</p> <p>Identify ways in which people can live in a more sustainable way.</p> <p>Explain the use and development of renewable and sustainable energy and their importance.</p> <p>Apply knowledge of features of different types of software to find, organise, manage and access information in different situations.</p> <p>Use search facilities of electronic sources to access and retrieve information in a variety of contexts.</p> <p>Experiment with features and functions of computer technology across different learning contexts.</p> <p>Synthesise sounds, text and images to communicate information.</p> <p>Evaluate choices relating to the different roles and responsibilities involved in setting up and running a business.</p> <p>Use technology safely and conduct themselves appropriately when interacting and sharing ideas or information with others.</p> <p>Design an interesting and entertaining game using appropriate software.</p> <p>Discuss issues relating to food seasonality, availability and sustainability and how this may impact on journeys food makes.</p> <p>Explain why certain problem strategies are used when meeting design challenges with a food or textile focus.</p> <p>Appraise a piece of work and adapt and improve if necessary.</p> <p>Create 3D objects which demonstrate strengthening, energy transfer and movement.</p> <p>Estimate and measure using appropriate instruments and units.</p> <p>Develop problem solving strategies to construct models.</p> <p>Use effects such as light, shadow and texture when drawing either manually or electronically.</p> <p>Experiment and explain the impact and effects colour can have.</p>



	Early Level (Nursery-P1)	First Level (P2-P4)	Second Level (P5-P7)
Technological Developments in Society	Technology Around Me Reduce, Reuse, Recycle	A World of Technology Conservation	History and Future of Technology Sustainability
ICT to Enhance Learning	<i>Across all areas of the curriculum</i>		
Business	<i>Social Studies Enterprise Projects</i>		
Computing Science	Toys & Technology	Computer Games	Communication Technologies Game Design
Food & Textiles	Food Technology	Food Technology – Design & Make Textile Technology – Design & Make	Food Technology – Design & Make Food Journeys Textile Technology – Design & Make
Craft, Design, Engineering & Graphics	Making Models & Pictures	Model Making Drawing & Colouring	Model Making Drawing & Colouring

Suggested Topics	Outcomes Covered
Early Level	
Technology Around Me	<u>BUNDLE E1</u> I enjoy playing with and exploring technologies to discover what they can do and how they can help us. TCH 0-01a
Reduce, Reuse, Recycle	<u>BUNDLE E2</u> Within and beyond my place of learning, I can reduce, re-use and recycle resources I use, to help care for the environment. TCH 0-02a
Toys & Technology	<u>BUNDLE E3</u> I am developing problem-solving strategies, navigation and co-ordination skills, as I play and learn with electronic games, remote control or programmable toys. TCH 0-09a
Food Technology	<u>BUNDLE E4</u> Together we enjoy handling, tasting, talking and learning about different foods, discovering ways in which eating and drinking may help us to grow and keep healthy. HWB 0-30a I explore and discover where foods come from as I choose, prepare and taste different foods. HWB 0-35a Throughout my learning, I share my thoughts with others to help further develop ideas and solve problems. TCH 0-11a
Making Models & Pictures	<u>BUNDLE E5</u> Within real and imaginary settings, I am developing my practical skills as I select and work with a range of materials, tools and software. TCH 0-12a Through discovery, natural curiosity and imagination, I explore ways to construct models or solve problems. TCH 0-14a Throughout my learning, I explore and discover different ways of representing my ideas in imaginative ways. TCH 0-15a

Suggested Topics	Outcomes Covered
<i>First Level</i>	
A World of Technology	<p><u>BUNDLE F1</u> By exploring and using technologies in the wider world, I can consider the ways in which they help. TCH 1-01a</p> <p>I can work with others to generate, discuss and develop imaginative ideas to create a product of the future. TCH 1-01b</p> <p>By exploring current news items of technological interest, I have raised questions on the issues and can share my thoughts. TCH 1-01c</p>
Conservation	<p><u>BUNDLE F2</u> Throughout all my learning, I take appropriate action to ensure conservation of materials and resources, considering the impact of my actions on the environment. TCH 1-02a</p>
Computer Games	<p><u>BUNDLE F3</u> I am developing my knowledge and use of safe and acceptable conduct as I use different technologies to interact and share experiences, ideas and information with others. TCH 1-08a</p> <p>I am developing problem-solving strategies, navigation and co-ordination skills, as I play and learn with electronic games, remote control or programmable toys. TCH 1-09a</p>
Food Technology – Design & Make	<p><u>BUNDLE F4</u> I experience a sense of enjoyment and achievement when preparing simple healthy foods and drinks. HWB 1-30b</p> <p>When preparing and cooking a variety of foods, I am becoming aware of the journeys which foods make from source to consumer, their seasonality, their local availability and their sustainability. HWB 1-35a</p> <p>Through discovery and imagination, I can develop and use problem-solving strategies to meet design challenges with a food or textile focus. TCH 1-11a</p> <p>Having evaluated my work, I can adapt and improve, where appropriate, through trial and error or by using feedback. TCH 1-11b</p>
Textile Technology – Design & Make	<p><u>BUNDLE F5</u> Through discovery and imagination, I can develop and use problem-solving strategies to meet design challenges with a food or textile focus. TCH 1-11a</p> <p>Having evaluated my work, I can adapt and improve, where appropriate, through trial and error or by using feedback. TCH 1-11b</p>
Model Making	<p><u>BUNDLE F6</u> I explore materials, tools and software to discover what they can do and how I can use them to help solve problems and construct 3D objects which may have moving parts. TCH 1-12a</p> <p>During practical activities and design challenges, I can estimate and measure using appropriate instruments and units. TCH 1-13a</p> <p>Through discovery and imagination, I can develop and use problem-solving strategies to construct models. TCH 1-14a</p> <p>Having evaluated my work, I can adapt and improve, where appropriate, through trial and error or by using feedback. TCH 1-14b</p>
Drawing & Colouring	<p><u>BUNDLE F7</u> I am developing an interest, confidence and enjoyment in using drawing and colour techniques, manually or electronically, to represent ideas in different learning situations. TCH 1-15a</p>

Suggested Topics	Outcomes Covered
Second Level	
History and Future of Technology	<p><u>BUNDLE S1</u> When exploring technologies in the world around me, I can use what I learn to help to design or improve my ideas or products. TCH 2-01a</p> <p>I can investigate how an everyday product has changed over time to gain an awareness of the link between scientific and technological developments. TCH 2-01b</p>
Sustainability (Could be linked to Social Studies topic on Renewable Energy/Climate Change)	<p><u>BUNDLE S2</u> Having analysed how lifestyle can impact on the environment and Earth's resources, I can make suggestions about how to live in a more sustainable way. TCH 2-02a</p> <p>I can investigate the use and development of renewable and sustainable energy to gain an awareness of their growing importance in Scotland or beyond. TCH 2-02b</p>
Communication Technologies	<p><u>BUNDLE S3</u> I am developing my knowledge and use of safe and acceptable conduct as I use different technologies to interact and share experiences, ideas and information with others. TCH 2-08a</p>
Game Design	<p><u>BUNDLE S4</u> Using appropriate software, I can work collaboratively to design an interesting and entertaining game which incorporates a form of control technology or interactive multimedia. TCH 2-09a</p>
Food Technology – Design & Make Food journeys	<p><u>BUNDLE S5</u> When preparing and cooking a variety of foods, I am becoming aware of the journeys which foods make from source to consumer, their seasonality, their local availability and their sustainability. HWB 2-35a</p> <p>Through discovery and imagination, I can develop and use problem-solving strategies to meet design challenges with a food or textile focus. TCH 2-11a</p> <p>Having evaluated my work, I can adapt and improve, where appropriate, through trial and error or by using feedback. TCH 2-11b</p>
Textile Technology – Design & Make	<p><u>BUNDLE S6</u> Through discovery and imagination, I can develop and use problem-solving strategies to meet design challenges with a food or textile focus. TCH 2-11a</p> <p>Having evaluated my work, I can adapt and improve, where appropriate, through trial and error or by using feedback. TCH 2-11b</p>
Model Making	<p><u>BUNDLE S7</u> By applying my knowledge and skills of science and mathematics, I can engineer 3D objects which demonstrate strengthening, energy transfer and movement. TCH 2-12a</p> <p>During practical activities and design challenges, I can estimate and measure using appropriate instruments and units. TCH 2-13a</p> <p>Through discovery and imagination, I can develop and use problem-solving strategies to construct models. TCH 2-14a</p> <p>Having evaluated my work, I can adapt and improve, where appropriate, through trial and error or by using feedback. TCH 2-14b</p>
Drawing and Colouring	<p><u>BUNDLE S8</u> I can use drawing techniques, manually or electronically, to represent objects or ideas, enhancing them using effects such as light, shadow and textures. TCH 2-15a</p> <p>Throughout my learning, I experiment with the use of colour to develop an awareness of the effects and impacts it can have. TCH 2-15b</p>