# CURRICULUM GRID

### Technologies Content Descriptors

#### Years 5-6

- **ACTDIK014**: Examine the main components of common digital systems and how they may connect together to form networks to transmit data

### Digital Technologies

#### Knowledge and Understanding

**Digital Systems**

- **ACTDIK014**: Examine the main components of common digital systems and how they may connect together to form networks to transmit data

### Processes and production skills

**Creating digital solutions by:**

- **ACTDIP017**: Define problems in terms of data and functional requirements drawing on previously solved problems
- **ACTDIP019**: Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition)
- **ACTDIP020**: Implement digital solutions as simple visual programs involving branching, iteration (repetition), and user input
- **ACTDIP021**: Explain how student solutions and existing information systems are sustainable and meet current and future local community needs
- **ACTDIP022**: Plan, create and communicate ideas and information, including collaboratively online, applying agreed ethical, social and technical protocols

### Design and Technologies

#### Knowledge and Understanding

**Technologies and society**

- **ACTDEK019**: Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use

**Technologies contexts**

- **ACTDEK020**: Investigate how electrical energy can control movement, sound or light in a designed product or system
## Introduction

### CURRICULUM GRID

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<th>Technologies Content Descriptors</th>
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<td>Years 5-6</td>
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**Engineering principles and systems**

- ACTDEK023: Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use

**Processes and production skills**

- ACTDEP024: Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended designed solutions

- ACTDEP025: Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques

- ACTDEP026: Select appropriate materials, components, tools, equipment and techniques and apply safe procedures to make designed solutions

- ACTDEP027: Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions

- ACTDEP028: Develop project plans that include consideration of resources when making designed solutions individually and collaboratively

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### Digital Technologies

#### Processes and production skills

| ACTDIP027 | Define and decompose real-world problems taking into account functional requirements and economic, environmental, social, technical and usability constraints |
| ACTDIP029 | Design algorithms represented diagrammatically and in English, and trace algorithms to predict output for a given input and to identify errors |
| ACTDIP030 | Implement and modify programs with user interfaces involving branching, iteration and functions in a general-purpose programming language |

#### Evaluating

| ACTDIP031 | Evaluate how student solutions and existing information systems meet needs, are innovative, and take account of future risks and sustainability |

#### Collaborating and managing

| ACTDIP032 | Plan and manage projects that create and communicate ideas and information collaboratively online, taking safety and social contexts into account |

### Design and Technologies

#### Knowledge and Understanding

| ACTDEK031 | Analyse how motion, force and energy are used to manipulate and control electromechanical systems when designing simple, engineered solutions |

#### Materials and Technologies specialisation

| ACTDEK034 | Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment |

#### Processes and production skills

| ACTDEP035 | Critique needs or opportunities for designing and investigate, analyse and select from a range of materials, components, tools, equipment and processes to develop design ideas |
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<th>Technologies Content Descriptors</th>
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**Generating and designing**

- ACTDEP036: Generate, develop, test and communicate design ideas, plans and processes for various audiences using appropriate technical terms and technologies including graphical representation techniques

**Producing and implementing**

- ACTDEP037: Select and justify choices of materials, components, tools, equipment and techniques to effectively and safely make designed solutions

**Evaluating**

- ACTDEP038: Independently develop criteria for success to evaluate design ideas, processes and solutions and their sustainability

**Collaborating and managing**

- ACTDEP039: Use project management processes when working individually and collaboratively to coordinate production of designed solutions
## CURRICULUM GRID

### Technologies Content Descriptors

**Years 9-10**

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### Digital Technologies

#### Knowledge and Understanding

**Digital Systems**

- ACTDIK034: Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems

#### Processes and production skills

**Creating digital solutions by:**

- **Investigating and defining**
  - ACTDIP038: Define and decompose real-world problems precisely, taking into account functional and non-functional requirements

- **Generating and designing**
  - ACTDIP040: Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases

- **Producing and implementing**
  - ACTDIP041: Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language

- **Collaborating and managing**
  - ACTDIP044: Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability

### Design and Technologies

#### Knowledge and understanding

**Technologies and society**

- ACTDEK041: Explain how products, services and environments evolve with consideration of preferred futures and the impact of emerging technologies on design decisions

**Technologies contexts**

**Engineering principles and systems**

- ACTDEK043: Investigate and make judgments on how the characteristics and properties of materials are combined with force, motion and energy to create engineered solutions
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<td>ACTDEP049 Develop, modify and communicate design ideas by applying design thinking, creativity, innovation and enterprise skills of increasing sophistication</td>
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<td>ACTDEP050 Work flexibly to effectively and safely test, select, justify and use appropriate technologies and processes to make designed solutions</td>
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