# Gorse Hill Primary School: DT Progression of Skills – KS1

**KS1 Design Technology National Curriculum objectives:** In this unit, children will be taught to:

| **Designing:**<br>**Understanding contexts, users and purposes** | **Making:**<br>**Planning** | **Technical knowledge:**<br>**Making products work** | **Evaluating:**<br>**Own ideas and products** | **Cooking and nutrition:**<br>**Where food comes from** |
|---|---|---|---|---|
| **D1** work confidently within a range of contexts, such as imaginary, story- based, home, school, gardens, playgrounds, local community, industry and the wider environment<br>**D2** state what products they are making<br>**D3** say whether their products are for themselves or other users<br>**D4** describe what their products are for<br>**D5** say how their products will work<br>**D6** say how they will make their products suitable for their intended users<br>**D7** use simple design criteria to help develop their ideas | **M1** plan by suggesting what to do next<br><br>**M2** select from a range of tools and equipment, explaining their choices<br><br>**M3** select from a range of materials and components according to their characteristics | **T1** about the simple working characteristics of materials and components<br>**T2** about the movement of simple mechanisms such as levers, sliders, wheels and axles<br>**T3** how freestanding structures can be made stronger, stiffer and more stable<br>**T4** that a 3-D textiles product can be assembled from two identical fabric shape<br>**T5** that food ingredients should be combined according to their sensory characteristics<br>**T6** the correct technical vocabulary for the projects they are undertaking | **E1** talk about their design ideas and what they are making<br><br>**E2** make simple judgements about their products and ideas against design criteria<br><br>**E3** suggest how their products could be improved | **C1** that all food comes from plants or animals<br><br>**C2** that food has to be farmed, grown elsewhere (e.g. home) or caught |
| **Designing:**<br>**Generating, developing, modeling & communicating ideas** | **Making:**<br>**Practical skills and techniques** | | **Evaluating:**<br>**Existing products** | **Cooking and nutrition:**<br>**Food preparation, cooking and nutrition** |
| **D8** generate ideas by drawing on their own experiences<br>**D9** use knowledge of existing products to help come up with ideas<br>**D10** develop and communicate ideas by talking and drawing<br>**D11** model ideas by exploring materials, components and construction kits and by making templates and mockups<br>**D12** use ICT, where appropriate, to develop and communicate their ideas | **M4** follow procedures for safety and hygiene<br>**M5** use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components<br>**M6** measure, mark out, cut and shape materials & components<br>**M7** assemble, join and combine materials and components<br>**M8** use finishing techniques, including those from art and design | | **E4** explore what products are and who or what they are for.<br>**E5** explore how products work and how or where they might be used.<br>**E6** explore what materials products are made from<br>**E7** explore what they like and dislike about products | **C3** how to name and sort food into the five groups in The Eatwell Plate<br>**C4** that everyone should eat at least five portions of fruit and vegetables every day<br>**C5** how to prepare simple dishes safely and hygienically, without using a heat source<br>**C6** how to use techniques such as cutting, peeling and grating |

# Gorse Hill Primary School: DT Progression of Skills – Lower KS2

**Lower KS2 Design Technology National Curriculum objectives:** In this unit, children will be taught to:

| **Designing:**<br>**Understanding contexts, users and purposes** | **Making:**<br>**Planning** | **Technical knowledge:**<br>**Making products work** | **Evaluating:**<br>**Own ideas and products** | **Cooking and nutrition:**<br>**Where food comes from** |
|---|---|---|---|---|
| **D1** work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment<br>**D2** describe the purpose of their products<br>**D3** indicate the design features of their products that will appeal to intended users<br>**D4** explain how particular parts of their products work<br>**D5** gather information about needs and wants of particular individuals and groups<br>**D6** develop their own design criteria and use these to inform their ideas | **M1** select tools and equipment suitable for the task<br>**M2** explain their choice of tools and equipment in relation to the skills and techniques they will be using<br>**M3** select materials and components suitable for the task<br>**M4** explain their choice of materials and components according to functional properties and aesthetic qualities<br>**M5** order the main stages of making | **T1** how to use learning from science and maths to help design and make products that work<br>**T2** that materials have both functional properties and aesthetic qualities<br>**T3** that materials can be combined and mixed to create more useful characteristics<br>**T4** that mechanical and electrical systems have an input, process and output<br>**T5** use the correct technical vocabulary for the projects they are undertaking<br>**T6** how mechanical systems such as levers and linkages or pneumatic systems create movement<br>**T7** how simple electrical circuits and components can be used to create functional products<br>**T8** how to program a computer to control their products<br>**T9** how to make strong, stiff shell structures<br>**T10** that a single fabric shape can be used to make a 3D textiles product<br>**T11** that food ingredients can Be fresh, pre-cooked and processed | **E1** identify the strengths and areas for development in their ideas and products<br>**E2** consider the views of others, including intended users, to improve their work<br>**E3** refer to their design criteria as they design and make<br>**E4** use their design criteria to evaluate their completed products | **C1** that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world<br><br>**C2** and cattle) and caught (such as fish) in the UK, Europe and the wider world |
| | | | **Evaluating:**<br>**Existing products**<br>Pupils will be taught to investigate & analyse | |
| **Designing:**<br>**Generating, developing, modeling & communicating ideas** | **Making:**<br>**Practical skills and techniques** | | **E5** how well products have been designed and made<br>**E6** why materials have been chosen<br>**E7** what methods of construction have been used<br>**E8** developed ground-breaking products<br>**E9** how well products work to achieve their purposes<br>**E10** how well products meet user needs and wants<br>**E11** who designed and made the products<br>**E12** where and when products were designed and made<br>**E13** whether products can be recycled or reused | **Cooking and nutrition:**<br>**Food preparation, cooking and nutrition** |
| **D7** share and clarify ideas through discussion<br>**D8** model their ideas using prototypes and pattern pieces<br>**D9** use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas<br>**D10** use computer-aided design to develop and communicate their ideas<br>**D11** generate realistic ideas, focusing on the needs of the user<br>**D12** make design decisions that take account of the availability of resources | **M6** follow procedures for safety and hygiene<br>**M7** use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components<br>**M8** measure, mark out, cut and shape materials and components with some accuracy<br>**M9** assemble, join and combine materials and components with some accuracy<br>**M10** apply a range of finishing techniques, including those from art & design, with some accuracy | | **Evaluating:**<br>**Key events and individuals**<br>**E14** about inventors, designers, engineers, chefs & manufacturers who have developed ground-breaking products | **C3** how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source<br>**C4** how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking<br>**C5** that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell Plate<br>**C6** that to be active and healthy, food and drink are needed to provide energy for the body |

# Gorse Hill Primary School: DT Progression of Skills – Upper KS2

**Upper KS2 Design Technology National Curriculum objectives:** In this unit, children will be taught to:

## Designing: Understanding contexts, users and purposes

**D1** work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment
**D2** describe the purpose of their products
**D3** indicate the design features of their products that will appeal to Intended users
**D4** explain how particular parts of their products work
**D5** carry out research, using surveys, interviews, questionnaires and web-based resources
**D6** identify the needs, wants, preferences and values of particular individuals and groups
**D7** develop a simple design specification to guide their thinking

## Designing: Generating, developing, modeling & communicating ideas

**D8** share and clarify ideas through discussion
**D9** model their ideas using prototypes and pattern pieces
**D10** use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas
**D11** use computer-aided design to develop & communicate their ideas
**D12** generate realistic ideas, focusing on the needs of the user
**D12** make design decisions that take account of the availability of resources

## Making: Planning

**M1** select tools and equipment suitable for the task
**M2** explain their choice of tools and equipment in relation to the skills and techniques they will be using
**M3** select materials and components suitable for the task
**M4** explain their choice of materials and components according to functional properties and aesthetic qualities
**M5** produce appropriate lists of tools, equipment and materials that they need
**M6** formulate step-by-step plans as a guide to making

## Making: Practical skills & techniques

**M7** follow procedures for safety and hygiene
**M8** use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components
**M9** accurately measure, mark out, cut and shape materials & components
**M10** accurately assemble, join and combine materials and components
**M11** accurately apply a range of finishing techniques, including those from art and design
**M12** use techniques that involve a number of steps
**M13** demonstrate resourcefulness when tackling practical problems

## Technical knowledge: Making products work

**T1** how to use learning from science and maths to help design and make products that work
**T2** that materials have both functional properties and aesthetic qualities
**T3** that materials can be combined and mixed to create more useful characteristics
**T4** that mechanical and electrical systems have an input, process and output
**T5** the correct technical vocabulary for the projects they are undertaking
**T6** how mechanical systems such as cams or pulleys or gears create movement
**T7** how more complex electrical circuits and components can be used to create functional products
**T8** how to program a computer to monitor changes in the environment and control their products
**T9** how to reinforce and strengthen a 3D framework
**T10** that a 3D textiles product can be made from a combination of fabric shapes
**T11** that a recipe can be adapted by adding or substituting one or more ingredients

## Evaluating: Own ideas and products

**E1** identify the strengths and areas for development in their ideas and products
**E2** consider the views of others, including intended users, to improve their work
**E3** critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make
**E4** evaluate their ideas and products against their original design specification

## Evaluating: Existing products

Pupils will be taught to investigate & analyse

**E5** how well products have been designed and made
**E6** why materials have been chosen
**E7** what methods of construction have been used
**E8** how well products work to achieve their purposes
**E9** how well products meet user needs and wants
**E10** how much products cost to make
**E11** how innovative products are
**E12** how sustainable the materials in products are
**E13** what impact products have beyond their intended purpose

## Evaluating: Key events and individuals

**E14** about inventors, designers, engineers, chefs & manufacturers who have developed ground-breaking products

## Cooking and nutrition: Where food comes from

**C1** that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world

**C2** that seasons may affect the food available

**C3** how food is processed into ingredients that can be eaten or used in cooking

## Cooking and nutrition: Food preparation, cooking & nutrition

**C4** how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source
**C5** how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking
**C6** that recipes can be adapted to change the appearance, taste, texture and aroma
**C7** that different food and drink contain different substances – nutrients, water and fibre – that are needed for health