D&T and Food Intent, Implementation and Impact

Grange Curriculum Principles

Building on the Framework for Excellence, The Grange Primary Curriculum has six core principles:

- **Entitlement**
  All pupils have the right to learn what is in the Grange curriculum, and the school has a duty to ensure that all pupils are taught the whole of it

- **Coherence**
  Taking the National Curriculum as its starting point, our curriculum is carefully sequenced so that powerful knowledge builds term by term and year by year. We make meaningful connections within subjects and between subjects

- **Mastery**
  We ensure that foundational knowledge, skills and concepts are secure before moving on. Pupils revisit prior learning and apply their understanding in new contexts

- **Adaptability**
  The core content – the 'what' – of the curriculum is stable, but classes will bring it to life using their pupil's own interest, and teachers will adapt lessons – the 'how' – to meet the needs of their own classes

- **Representation**
  All pupils see themselves in our curriculum, and our curriculum takes all pupils beyond their immediate experience

- **Education with Character**
  Our curriculum - which includes the taught subject timetable as well as spiritual, moral, social and cultural development, our co-curricular provision and the ethos and 'hidden curriculum' of the school – is intended to spark curiosity and to nourish both the head and the heart

Grange Curriculum Principles: DT & Food

The relationship between Design & Technology and Food

The National Curriculum is clear that Cooking & Nutrition is a discrete part of the Design & Technology curriculum. In one strand of D&T, the aims of the curriculum are to:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others.

But the aim of Cooking & Nutrition is distinct:

- Understand and apply the principles of nutrition and learn how to cook.

The purpose of the Food strand within Design & Technology is not to design dishes. While this is ultimately the skill of a chef, there is a huge amount of prerequisite knowledge that needs to be mastered before new dishes can be designed. Chefs need to know about nutrition and dietary requirements; equipment and techniques; source and characteristics of ingredients; an awareness of the principles of cooking (which Ashbee in *Curriculum: Theory, Culture and Subject Specialisms* (2021), describes as bases, thickening, reduction, seasoning, layering, topping, balance, contrast etc.); and a growing knowledge of tried-and-tested recipes. The knowledge that pupils are taught in Primary school should therefore focus more on this prerequisite knowledge – the basics of cooking and nutrition – and less on the design elements of the subject.

For this reason, we have a separate set of principles for Design & Technology and Food, and a separate set of sequencing documents to show how pupils will progress in each discipline.

The right balance of Design & Technology and Food

The aim of the GPA curriculum for Food is to ensure that all pupils leave primary school with the ability to cook a selection of healthy dishes using a variety of techniques, and to be able to make choices about what they eat based on values like source, seasonality, and nutritional value. These life skills are even more important in the context of rising obesity and climate change.

But the practical and conceptual knowledge of Food needs to be explicitly taught and practised, and so sufficient time needs to be allocated to it. Therefore, there is one Food unit per year, and two D&T units per year. This allows sufficient time for pupils to master the important Cooking & Nutrition skills, while ensuring there is still time to deliver all the required D&T.

Grange Curriculum Principles: D&T

The GPA curriculum for Design & Technology provides all children, regardless of their background, with:

Substantive knowledge:

- Ensuring pupils **master** core content through the development of **conceptual knowledge** of structures, mechanisms, materials and programming in small steps, and the timely revisiting of this key knowledge.
- Ensuring that pupils are explicitly taught and have time to master **procedural knowledge**, including craftsmanship of cutting, shaping, joining and finishing as well as engineering in focused practical tasks.
- Making explicit and deliberate links to other curriculum subjects – particularly science – to ensure that pupils use and apply scientific concepts in a Design & Technology setting at the appropriate time. Pupils also draw on and further develop knowledge and skills first taught in Mathematics, History, Computing and Art & Design, due to the multi-disciplinary nature of Design & Technology.

Disciplinary knowledge:

- Reinforcing the **iterative design process** in the heart of every unit, and allowing pupils to build their understanding and ability to apply design values gradually from EYFS to Key Stage 2 and beyond.
- Ensuring that pupils know **they are designers and engineers**, who design a solution to fit a specific user and need; they are not led by outcomes. Pupils should be encouraged to design products using all of the knowledge they have developed across the curriculum.
- **Explicitly teaching** ways of designing, ways of generating ideas and ways of identifying user needs, to give pupils the tools they need to thrive as designers of the future.

Curiosity and excitement about the possibilities offered by Design & Technology:

- Ensuring that all pupils **can see themselves reflected** in the Design & Technology curriculum, by exploring the contributions made by a wide range of designers, past and present.
- Opportunities to **develop character** by understanding the difficulties faced by those designers and seeing how characteristics such as resilience and risk taking contributed towards success.
- Understanding the contribution that design and technology makes to creativity, culture, wealth and the well-being of a nation and that **more opportunities exist** than ever before due to technological advances.

Grange Curriculum Principles: Food

The GPA curriculum for Food provides all children, regardless of their background, with:

Substantive knowledge:

- Ensuring pupils **master** core content through the development of **conceptual knowledge** of food sources, safety, hygiene and nutrition in small steps, and the timely revisiting of this key knowledge.
- Ensuring that pupils are explicitly taught and have time to master **procedural knowledge**, including cooking skills of chopping, preparing, combining and heating in focused practical tasks.
- Making explicit and deliberate links to other curriculum subjects – particularly science – to ensure that pupils use and apply scientific concepts, such as nutrition and food chains, in a Food setting at the appropriate time.

Disciplinary knowledge:

- Ensuring that pupils are taught how to make **food choices** based on qualities like nutritional value; dietary requirements; cost; seasonality; food miles and carbon footprint of production; time to prepare; and quantities. These qualities are introduced in small steps but applied cumulatively so that by Year 6, pupils are able to make decisions based on a selection of them.

The ability, and desire, to cook balanced, sustainable meals for themselves and their family:

- Ensuring that the recipes and foods chosen reflect relevant cuisines from the local context, the UK and around the world.
- Providing recipes that are balanced and sustainable, which can be cooked after school in a family context.

The GPA curriculum for Design & Technology has three strands:

Conceptual Knowledge (Substantive/Vertical Concepts*)

Conceptual knowledge includes the principles that designers and engineers must have a solid understanding of, before attempting to design any product. The conceptual knowledge is structured into:

- **Structures**
- **Mechanisms**
- **Programming & Control**
- **Materials**
- **D&T Shaping the World**

These have each been sequenced so that pupils are explicitly taught aspects in small steps, allowing pupils to gradually build their understanding and mastery of conceptual knowledge. Progression in each area of conceptual knowledge is outlined in Slide 29-31.

Procedural Knowledge (Substantive)

Procedural knowledge includes the skills and craftsmanship of designers and engineers. It includes:

- **Marking Out**
- **Shaping**
- **Joining**
- **Finishing**

As above, these have each been sequenced so that pupils watch teachers model a small number of key procedures in each unit, and pupils carry out focused practical tasks to master the skills. Progression in each strand is outlined in Slide 32.

Disciplinary Knowledge

In the Grange Curriculum, the third strand focuses on the design process: how designers identify a need, generate ideas, make prototypes and test and iterate their ideas, communicate designs, and evaluate products based on values.

Progression in disciplinary knowledge is outlined on Slide 33-34.

*Vertical Concepts

Design & Technology is a very practical subject, and it is useful to consider the substantive knowledge (i.e. the knowledge that all designers and engineers need) as conceptual and procedural. These could be likened to knowledge and skills.

However, in the context of our curriculum, the **conceptual knowledge** could be considered as the '**Vertical Concepts**'.

As they progress through the curriculum, pupils build their understanding of conceptual concepts like mechanisms; they revisit and add layers to their understanding throughout the curriculum.

Structuring the Grange Curriculum: Food

The GPA curriculum for Food has three strands:

Conceptual Knowledge (Substantive/Vertical Concepts*)

Conceptual knowledge – knowing that – includes the ideas and principles that cooks and chefs must have understanding. The conceptual knowledge is structured into:

- **Food sources**
- **Nutrition and eating** (including dietary requirements and restrictions)
- **Food safety**
- **Food hygiene**

These have each been sequenced so that pupils are explicitly taught aspects in small steps, allowing pupils to gradually build their understanding and mastery of conceptual knowledge. Progression in each area of conceptual knowledge for Food is outlined in Slide 35-36.

Procedural Knowledge (Substantive)

Procedural knowledge covers cooking skills and techniques, including:

- **Preparing** (including washing and checking; chopping, cutting and slicing; grating; crushing; peeling and measuring)
- **Combining and assembling** (including mixing, spreading and assembling)
- **Cooking** (using the hob and oven)
- **Working in the kitchen** (including managing a workspace and following recipes)

As above, these have each been sequenced so that pupils watch teachers model a small number of key techniques in each unit, and pupils follow recipes that help them master the skills. Progression in each strand is outlined in Slide 37.

Food Choices (Disciplinary)

In the Grange curriculum for Food, the third strand focuses on food choices: how cooks make choices about food based on qualities like nutritional value; dietary requirements; cost; seasonality; food miles and carbon footprint of production; time to prepare; and quantities.

Progression in Food Choices is outlined on Slide 38.

*Vertical Concepts

Food is a very practical subject, and it is useful to consider the substantive knowledge (i.e. the knowledge that all cooks need) as conceptual and procedural. These could be likened to knowledge and skills, or knowing that and knowing how.

However, in the context of our curriculum, the **conceptual knowledge** could be considered as the '**Vertical Concepts**'.

As they progress through the curriculum, pupils build their understanding of conceptual concepts like nutrition and food source; they revisit and add layers to their understanding throughout the curriculum.
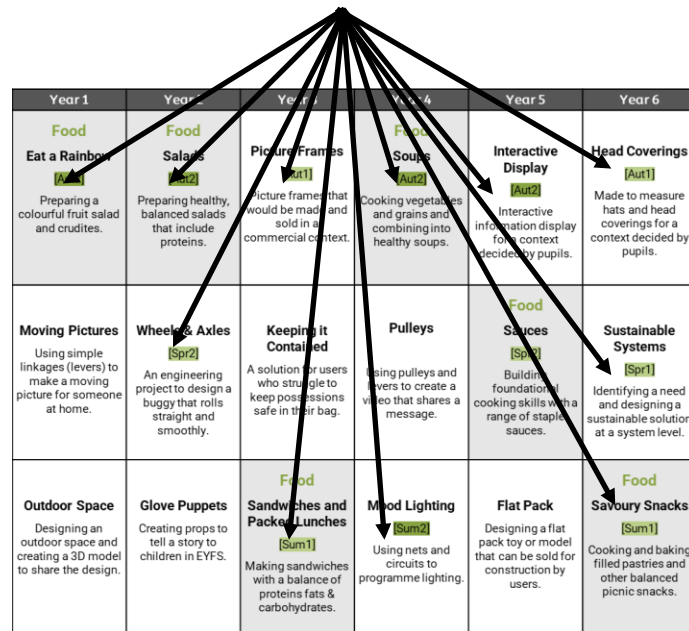
Grange Curriculum: Design & Technology

The GPA curriculum is designed so that Design & Technology units can be taught in one half of the term, and Art & Design in the other.

While in the majority of cases, it does not matter whether Design & Technology is taught in the first or second half of a term, there are some units that we recommend are taught in either the first or the second term. This allows knowledge to be developed across the curriculum.

The rationale for each of these cases is listed on the right; schools should be mindful of these when planning the year.

In **Y1 Aut**, D&T should be taught in Aut2 so that pupils can review their scientific knowledge of Plants from Aut1 in the context of fruits and vegetables.

In **Y2 Aut**, D&T should be taught in Aut2 so that pupils can review their scientific knowledge of bulbs and the general plant life cycle in the context of vegetables.

In **Y3 Aut**, Art should be taught in Aut2 so that pupils can meaningfully connect their learning about prehistoric art with prehistoric Britain, which is being studied in history in the same half term. Therefore, D&T should be taught in Spr1.

In **Y3 Sum**, Art should be taught in Sum2 so that pupils can create narrative art that links to their learning about Greek mythology, studied in History in the same half term. Therefore, D&T should be taught in Sum1.

In **Y4 Aut**, Art should be taught in Aut1 because pupils are inspired by Kusama to make 3D pumpkin sculptures, which is more seasonal in Aut1. Therefore, D&T should be taught in Aut2.

In **Y6 Aut**, Art should be taught in Aut1 so that pupils connect their art installation (made using plastics) to their knowledge of plastic pollution from Geography in the same half term. Therefore, D&T should be taught in Aut2.

In **Y6 Spr**, Art should be taught in Spr2 so that pupils can review their knowledge of migration from Geography Spr1 and consider the artworks of artists who were refugees. Therefore, D&T should be taught in Spr1.

In **Y6 Sum**, Art should be taught in Sum2 so that pupils build on their contextual understanding of the British Empire before exploring the work of Yinka Shonibare and others. Therefore, D&T should be taught in Sum1.

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Food Eat a Rainbow [Aut] Preparing a colourful fruit salad and crudites.	**Food** Salads [Aut2] Preparing healthy, balanced salads that include proteins.	Picture Frames [Aut1] Picture frames that would be made and sold in a commercial context.	**Food** Soups [Aut2] Cooking vegetables and grains and combining into healthy soups.	Interactive Display [Aut2] Interactive information display for a context decided by pupils.	Head Coverings [Aut1] Made to measure hats and head coverings for a context decided by pupils.
Moving Pictures Using simple linkages (levers) to make a moving picture for someone at home.	Wheels & Axles [Spr2] An engineering project to design a buggy that rolls straight and smoothly.	Keeping it Contained A solution for users who struggle to keep possessions safe in their bag.	Pulleys Using pulleys and levers to create a video that shares a message.	**Food** Sauces [Spr2] Building foundational cooking skills with a range of staple sauces.	Sustainable Systems [Spr1] Identifying a need and designing a sustainable solution at a system level.
Outdoor Space Designing an outdoor space and creating a 3D model to share the design.	Glove Puppets Creating props to tell a story to children in EYFS.	**Food** Sandwiches and Packed Lunches [Sum1] Making sandwiches with a balance of proteins fats & carbohydrates.	Mood Lighting [Sum2] Using nets and circuits to programme lighting.	Flat Pack Designing a flat pack toy or model that can be sold for construction by users.	**Food** Savoury Snacks [Sum1] Cooking and baking filled pastries and other balanced picnic snacks.

Grange Primary Academy
The best in everyone™
Part of United Learning

Using the Grange Curriculum for D&T

Our curriculum is sequenced for teaching the 'what', but adapting the 'how' and the lesson delivery to meet the needs of our pupils.
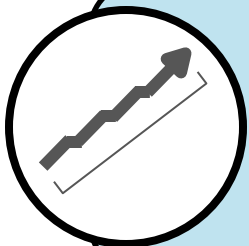
Within the Subject

Our curriculum for Design & Technology has been very carefully sequenced to ensure coverage and appropriate progression through substantive (conceptual and procedural) and disciplinary knowledge, and ensuring that pupils create a balanced range of outcomes and are exposed to a broad range of designers.

Implement the longer-term subject plan; avoid swapping units or 'pick and mixing' with other schemes.
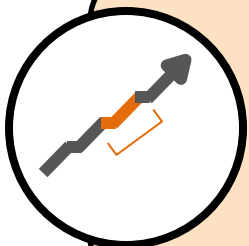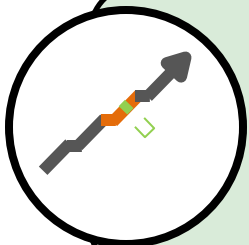
Within the Unit

Each unit clearly sets out the knowledge that should be taught and reviewed in the sequence of lessons. Suggested designers for each unit are provided, including those from an local context, with visitors and experiences within the community considered.

Each unit is planned to cover six 1-hour lessons; this allows time before and after the unit to fill gaps or address misconceptions as required. Some units are extended to eight hours where more time for practical activities may be required. **Teach the core content in order suggested in the lesson sequence, filling gaps and addressing misconceptions as required.**

Where appropriate, supplement or replace suggested designers with artists from the local area, or to meet the pupils interests.

Within the Lesson

All of our D&T and Food lessons, follow the principles of the Great Teaching Toolkit. Where applicable, content is broken down into small steps and 'I', 'We', and 'You' sections allow for modelling, guided and independent practice, following the Rosenshine principles. Lessons are adapted in an range of ways to teach the required knowledge and meet the needs of the class.

Adapt the lesson as much as is required to meet the needs of the class.

Impact

Assessing impact is assessing how well pupils have learned the required knowledge from the D&T and Food curriculum. It is not about lots of tests, or meticulously comparing pupils' outcomes at the start and end of each unit.

If pupils can keep up with a well-sequenced curriculum that has progression built in, they are making good or even better progress!

Our D&T and Food curriculum has this progression built in, so we can feel confident that pupils are keeping up with it.

This can be done through:

- **Books/products/floor books and pupil-conferencing**

  Talking to pupils about their work allows us to assess how much of the curriculum content is secure. These conversations are used most effectively to determine whether pupils have a good understanding of the vertical concepts, and if they can link recently taught content to learning from previous units.

  Formative assessment in lessons

  There are opportunities for formative assessment throughout the lesson, and teachers continually adapt their lesson delivery to address misconceptions and ensure that pupils are keeping up with the content.