Progression of Skills and Knowledge – D.T. **Autumn Term, Spring Term, Summer Term**

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|  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Designing** | **Understanding contexts,**  **users and purposes**  Work confidently within a range of contexts (imaginary, story-based, home, school, and the wider environment.)  - State what products they are designing, what they are for, who they are for and how they will work.  **Generating, developing, modelling and communicating ideas**  - Generate ideas by drawing on their own experiences  - Use knowledge of existing products to help come up with ideas  - Develop and communicate ideas by talking and drawing | **Understanding contexts,**  **users and purposes**  - Work confidently within a range of contexts, home, gardens, local community, the wider environment)  - Say how they will make their products suitable for their intended users  - Use simple design criteria to help develop their ideas  **Generating, developing, modelling and communicating ideas**  - Model ideas by exploring materials, components and construction kits and by making templates and mockups | **Understanding contexts,**  **users and purposes**  • work confidently within a range of contexts, (farming, school, leisure, history)  • describe the purpose of their products  • develop their own design criteria and use these to inform their ideas  **Generating, developing, modelling and communicating ideas**  • share and clarify ideas through discussion  • use annotated sketches and cross-sectional drawings to develop and communicate their ideas  • generate realistic ideas, focusing on the needs of the user  • make design decisions that take account of the availability of resources  Use information and communication technology, where appropriate, to develop and communicate their ideas | **Understanding contexts,**  **users and purposes**  • work confidently within a range of contexts,  (industry, history, leisure, and the wider environment)  • explain how particular parts of their products work  • gather information about the needs and wants of particular individuals and groups  • develop their own design criteria and use these to inform their ideas  **Generating, developing, modelling and communicating ideas**  • model their ideas using  annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas  • use computer-aided design to develop and communicate their ideas (ICT Pivot Animator, Zoo 3D)  • generate realistic ideas, focusing on the needs of the user  • make design decisions that take account of the availability of resources | **Understanding contexts,**  **users and purposes**  • work confidently within a range of contexts (industry, culture, wider environment)  • indicate the design features of their products that will appeal to intended users  • carry out research, using surveys, interviews, questionnaires and web-based resources  • identify the needs and preferences of particular individuals and groups  • develop a simple design specification to guide their thinking  **Generating, developing, modelling and communicating ideas**  • model their ideas using prototypes and pattern pieces  • use annotated sketches, cross-sectional drawings and exploded diagrams and ICT to develop and communicate ideas  • generate innovative ideas, drawing on research  • make design decisions, taking account of constraints such as time, resources and cost | **Understanding contexts,**  **users and purposes**  • carry out research, using surveys, interviews, questionnaires and web-based resources  • identify the needs, wants, preferences and values of particular individuals and groups  • indicate the design features of their products that will appeal to intended users  • develop a simple design specification to guide their thinking  **Generating, developing, modelling and communicating ideas**  • model their ideas using prototypes and pattern pieces  • use annotated sketches, cross-sectional drawings exploded diagrams and ICT to develop and communicate their ideas  • use computer-aided design to develop and communicate their ideas  • generate innovative ideas, drawing on research  • make design decisions, taking account of constraints such as time, resources and cost |
| **Making** | **Planning**  - Suggest what to do next  - Select from a range of tools and equipment, materials and components.  **Practical**  **skills and techniques**  - Follow procedures for safety and hygiene  - Use a range of materials and components: textiles, food ingredients  - Assemble, join and combine materials and components  - Use simple finishing techniques, including those from art and design | **Planning**  Plan which order to do things in.  - Select from a range of tools and equipment, materials and components explaining their choices  **Practical**  **skills and techniques**  - Follow procedures for safety and hygiene  - Use a range of materials and components, including construction materials, textiles, food ingredients and mechanical components  - Measure, mark out, cut and shape materials and  components  - Assemble, join and combine materials and components  - Use finishing techniques,including those from art and design | **Planning**  • select tools and equipment, materials and components suitable for the task.  -Order the main stages of making  **Practical**  **skills and techniques**  - follow procedures for safety and hygiene  • use a range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components  • measure, mark out, cut and shape materials and components with some accuracy  • assemble, join and combine materials and components with some accuracy  • apply a range of finishing techniques, including those from art and design, with some accuracy | **Planning**  • explain their choice of materials and components according to functional properties and aesthetic qualities  • order the main stages of making  **Practical**  **skills and techniques**  - follow procedures for safety and hygiene  • use a range of materials and components: construction materials, textiles, food ingredients, electrical components.  • measure, mark out, cut and shape materials and components with more accuracy  • assemble, join and combine materials and components with more accuracy.  • apply a range of finishing techniques, including those from art and design, with more accuracy. | **Planning**  • select tools and equipment, materials and components suitable for the task and explain their choice in relation to the skills and techniques they will be using.  • explain their choice of materials and components according to functional properties and aesthetic qualities  • produce appropriate lists of tools, equipment and materials that they need.  • formulate step-by-step plans as a guide to making  **Practical**  **skills and techniques**  - follow procedures for safety and hygiene  • use a range of materials and components: wood, food ingredients, mechanical components  • accurately measure, mark out, cut and shape materials and components  • accurately assemble, join and combine materials and components  • accurately apply a range of finishing techniques.  • use techniques that involve a number of steps  • demonstrate resourcefulness when tackling practical problems | **Planning**  • select tools and equipment, materials and components suitable for the task and explain their choice in relation to the skills and techniques they will be using  • explain their choice of materials and components according to functional properties and aesthetic qualities  • produce appropriate lists of tools, equipment and materials that they need  • formulate step-by-step plans as a guide to making  **Practical**  **skills and techniques**  - follow procedures for safety and hygiene  • use a range of materials and components: construction kits, food ingredients, mechanical components and electrical components  • accurately measure, mark out, cut and shape materials and components  • accurately assemble, join and combine materials and components  • accurately apply a range of finishing techniques,  • use techniques that involve a number of steps  • demonstrate resourcefulness when tackling practical problems |
| **Evaluating** | **Own ideas and products**  - Talk about their design ideas and what they are making  - Make simple judgements  about their products  - Suggest how their products could be improved  **Existing products**  - Explore what products are, what and who they are for, and what materials they are made from.  Say what they like and dislike about products | **Own ideas and products**  - Make simple judgements  about their products and ideas against design criteria  - Suggest how their products could be improved  **Existing products (Music)**  - Explore what products are, what and who they are for, when and where they’ll be used, and what materials they are made from.  Say what they like and dislike about products | **Own ideas and products**  - identify the strengths and areas for development in their ideas and products  • consider the views of others, to improve their work  • refer to their design criteria as they design and make  • use their design criteria to evaluate their completed products  **Existing products**  - Investigate and analyse:  • how well products have been designed and made  • why materials have been chosen  • what methods of construction have been used  • how well products work  • whether products can be recycled or reused  **Key events and individuals**  Know about some important inventions and inventors. | **Own ideas and products**  - identify the strengths and areas for development in their ideas and products  • consider the views of others, including intended users, to improve their work  • refer to their design criteria as they design and make  • use their design criteria to evaluate their completed products  **Existing products**  - Investigate and analyse:  • how well products have been designed and made  • why materials have been used  • how well products work  • who designed and made the products, and when and where they were made.  • **Key events and individuals**  Know about inventors, designers, engineers, chefs and manufacturers who have developedground-breaking products | **Own ideas and products**  • consider the views of others, including intended users, to improve their products.  • critically evaluate the quality of the design, manufacture and fitness for purpose of their products.  • evaluate their ideas and products against their original design specification  **Existing products**  - Investigate and analyse:  • how well products have been designed and made.  • why materials and methods of construction have been used  • how well products achieve their purposes and meet user needs and wants  • how much products cost to make  • how innovative products are  • how sustainable the materials in products are  • what impact products have beyond their intended purpose  **Key events and individuals**  Know about inventors, designers, engineers, chefs and manufacturers who have developed  ground-breaking products | **Own ideas and products**  • consider the views of others, including intended users, to improve their work  • critically evaluate the quality of the design, manufacture and fitness for purpose of their products while they are making them.  • evaluate their ideas and products against their original design specification  **Existing products**  - Investigate and analyse:  • how well products have been designed and made  • what methods of construction have been used  • how well products achieve their purposes and meet user needs and wants  • how much products cost to make  • how innovative products are  • how sustainable the materials in products are  • what impact products have beyond their intended purpose  **Key events and individuals**  Know about inventors, designers, engineers, chefs and manufacturers who have developed  ground-breaking products |
| **Technical knowledge** | **Making products work**  - Know about the simple working characteristics of materials and components  - Know about the movement of simple mechanisms such as levers, sliders, wheels.  - Know how freestanding structures can be made stronger, stiffer and more stable  - Know that a 3-D textiles product can be assembled from two identical fabric shapes  - Know the correct technical vocabulary for the projects they are undertaking | **Making products work**  - Know about the simple working characteristics of materials and components  - Know about the movement of simple mechanisms such as levers, sliders, wheels and axles  - Know how freestanding structures can be made stronger, stiffer and more stable  - Know that a 3-D textiles product can be assembled from two identical fabric shapes  - Know the correct technical vocabulary for the projects they are undertaking | **Making products work**  Use learning from science and maths to help design and make products that work  • Know materials have both functional properties and aesthetic qualities  • Know materials can be combined and mixed to create more useful characteristics  • Use the correct technical vocabulary for the projects they are undertaking | **Making products work**  Use learning from science and maths to help design and make products that work  • Know materials have both functional properties and aesthetic qualities  • Know materials can be combined and mixed to create more useful characteristics  • Know electrical systems have an input, process and output  • the correct technical vocabulary for the projects they are undertaking  • Know how simple electrical circuits and components can be used to create functional products  • how to program a computer to control their products (Lego We Do, in ICT)  • how to make strong, stiff shell structures  • that a single fabric shape can be used to make a 3D textiles product | **Making products work**  Use learning from science and maths to help design and make products that work  • Know materials have both functional properties and aesthetic qualities  • Know materials can be combined and mixed to create more useful characteristics  • Know mechanical systems have an input, process and output  • the correct technical vocabulary for the projects they are undertaking  • how mechanical systems such as cams or gears create movement  • how to program a computer to monitor changes in the environment and control their  Products (ICT Data-logging)  • how to reinforce and strengthen a 3D framework  • that a 3D textiles product can be made from a combination of fabric shapes | **Making products work**  Use learning from science and maths to help design and make products that work  • Know materials can be combined and mixed to create more useful characteristics  • Know mechanical and electrical systems have an input, process and output  • the correct technical vocabulary for the projects they are undertaking  • how mechanical systems such pulleys create movement  • how more complex electrical circuits and components can be used to create functional products  • how to reinforce and strengthen a 3D framework |
| **Cooking and nutrition** | **Where food comes from**  - Know that all food comes from plants or animals  - Know that food has to be farmed, grown elsewhere (e.g. home) or caught  **Food preparation, cooking and nutrition**  - Know how to prepare simple dishes safely and hygienically, without using a heat source  - Know how to use techniques such as cutting and peeling and grating | **Where food comes from (Science)**  - Know that all food comes from plants or animals  - Know that food has to be farmed, grown elsewhere (e.g. home) or caught  **Food preparation, cooking and nutrition (in PSHE)**  - Know how to name and sort foods into the five groups in the eatwell plate  - Know that everyone should eat at least five portions of fruit and vegetables every day  - Know how to prepare simple dishes safely and hygienically, without using a heat source  - Use techniques such as cutting, peeling and grating | **Where food comes from**  - Know that food is grown, reared and caught.  **Food preparation, cooking and nutrition**  • Know how to prepare and cook savoury dishes safely and hygienically, including, the use of a heat source  • Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking  • know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate (PSHE+Science)  • Know that to be active and healthy, food and drink are needed to provide energy for the body (PSHE+Science) | **Where food comes from**  - Know that food is grown reared and caught.  **Food preparation, cooking and nutrition**  Know how to prepare and cook a variety of mainly savoury dishes safely and hygienically using a heat source  • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing,  spreading, kneading and baking  • Know a healthy diet is made up from a variety and balance of different food and drink, as  depicted in The eatwell plate  • Know to be active and healthy, food and drink are needed to provide energy for the body  • Know food ingredients can be fresh, pre-cooked and processed | **Where food comes from**  - Know that food is grown, reared and caught in the UK, Europe and the wider world  • that seasons may affect the food available  • how food is processed into ingredients that can be eaten or used in cooking  **Food preparation, cooking and nutrition**  Prepare and cook a variety of predominantly savoury dishes safely and hygienically  using a heat source.  Use a range of techniques such as peeling, chopping, slicing, grating, mixing,  spreading, kneading and baking  • Know that recipes can be adapted to change the appearance, taste, texture and aroma by adding or substituting one or more ingredients  • that different food and drink contain different substances – nutrients, water and fibre – that are needed for health | **Where food comes from**  • how food is processed into ingredients that can be eaten or used in cooking  **Food preparation, cooking and nutrition**  Prepare and cook a variety of predominantly savoury dishes safely and hygienically using a heat source.  Use a range of techniques such as peeling, chopping, slicing, grating, mixing,  spreading, kneading and baking.  • Know that recipes can be adapted to change the appearance, taste, texture and aroma by adding or substituting one or more ingredients  • that different food and drink contain different substances – nutrients, water and fibre – that  are needed for health |