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| **Skill** | **Area** | **EYFS** | **Y1** | **Y2** | **Y3** | **Y4** | **Y5** | **Y6** |
| **Designing** | **Understanding contexts,****users and purposes** | Develop own ideas and then decide which materials Choose the right resources to carry out their own plan. Select shapes appropriately such as flat surfaces for building or a triangular prism for a roof.  | Work confidently within a range of contexts, such as imaginary, story-based, home, school and gardens.State what products they are designing and makingSay whether their products are for themselves or other usersUse a simple given design criteria to help develop ideas | Work confidently within a range of contexts such as home, playgrounds, local communityDescribe what their products are forSay how their products will workSay how they will make their products suitable for their intended usersDevelop a simple design criteria as a group to help develop their ideas |
| Work confidently within a range of contexts such as local community, leisure and cultureDevelop purposeful questioning as part of a group to identify the needs of individualsUse questioning to gather information about the needs and wants of particular individuals and groupsDevelop a detailed design criteria as a group and use these to inform their ideasDescribe the purpose of their products | Work confidently within a range of contexts such as leisure, culture and enterpriseDevelop purposeful questions with greater independence to gather information about the needs and wants of particular individuals and groupsUse questioning to gather informationabout the needs and wants of particular individuals and groupsDevelop their own design criteria and use these to inform their ideasDescribe the purpose of their productsand how they will function | Work confidently within a range of contexts such as leisure, culture, enterprise, industry and the wider environmentDevelop purposeful questions independently to gather information about the needs and wants of particular individuals and groupsIdentify the needs, wants, preferences and values of particular individuals and groupsUse all gathered information to develop their own design criteria and use these to inform their ideasExplain the purpose of a product and how particular parts of their products function | Work confidently within a range of contexts such as leisure, culture, enterprise, industry and the wider environmentIndependently gather information about the needs and wants of particular individuals and groupsUse all gathered information to develop their own design criteria and use these to inform their ideasDevelop a simple design specification to guide their thinkingIndicate the design features of their products that will appeal to intended users |
| **Generating, developing,****modelling and****communicating ideas** | Explore different materials freely, to develop their ideas about how to use them and what to make.  | Generate ideas by drawing on their own experiencesDevelop and communicate ideas by talking and drawing | Use knowledge of existing products to help come up with ideasModel ideas by exploring materials, components and construction kits and by making templates and mock-upsUse information and communication technology, where appropriate, to develop and communicate their ideas |
| Share and clarify ideas through discussionGenerate realistic ideas, focusing on the needs of the userMake design decisions based on the resources that are availableModel their ideas using prototypes and pattern piecesWhere possible use computer-aided design to develop and communicate their ideas | Develop ideas and through discussion explain how these link to the needs of the user Make design decisions that take account of the availability of resourcesWhere possible use computer-aided design to develop and communicate their ideas | Generate innovative ideas, drawing on researchMake design decisions, taking account time constraintsUse annotated sketches and cross sectional drawings to develop and communicate their ideasWhere possible use computer-aided design to develop and communicate their ideas | Make design decisions, taking account of constraints such as time, resources and costUse annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideasWhere possible use computer-aided design to develop and communicate their ideas |
| **Skill** | **Area** | **EYFS** | **Y1** | **Y2** | **Y3** | **Y4** | **Y5** | **Y6** |
| **Making** | **Planning** | Join different materials and explore different textures. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.  | Plan by suggesting what to do nextSelect from a range of tools and equipment, explaining their choices | As a group develop a simple flow diagram to sequence to main steps of makingSelect from a range of materials and components according totheir characteristics |
| Independently develop a simple flow diagram to sequence the main stages of makingSelect tools and equipment suitable for the taskSelect materials and components suitable for the task | Order the given stages of making into sequential steps to follow as a user guideExplain their choice of tools and equipment in relation to the skills and techniques they will be usingExplain their choice of materials and components according to functional properties and aesthetic qualities | Produce appropriate lists of tools, equipment and materials that they needWrite the stages of making into sequential steps to follow as a guide | Produce detailed lists of tools, equipment and materials that they need identifying their purpose in the making process.Formulate detailed step-by-step plans as a guide to making including diagrams where necessary |
| **Practical Skills and Techniques** | Use one-handed tools and equipment.Join different materials and explore different textures. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.  | Follow simple procedures for safety and hygiene with guidanceAssemble, join and combine materials and components using given methodsUse a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components | Recall and follow simple procedures for safety and hygieneUse templates to mark out, cut and shape materials and componentsAssemble, join and combine materials and components using chosen methods most appropriateBegin to use simple finishing techniques, including those from art and designUse a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components |
| Confidently follow procedures for safety and hygiene Use nonstandard units and templates to measure , mark out, cut and shape materials and components with greater accuracyAssemble, join and combine materials and components using appropriate methods justifying choices. Apply purposeful finishing techniques, including those from art and design, to enhance final products.Use a wider range of materials and components including construction materials and kits, textiles, food ingredients, mechanical components. | Confidently follow procedures for safety and hygiene showing a clear understanding of why they are in place. Begin to use standard units and also templates to measure , mark out, cut and shape materials and components with greater accuracy Assemble, join and combine materials and components using appropriate methods justifying choices. Reinforce and improve products independently.Select purposefully appropriate finishing techniques, including those from art and design, to enhance final products.Use a wider range of materials and components including construction materials and kits, textiles, food ingredients, mechanical components and electrical components | Accurately measure, mark out, cut and shape materials and componentsAccurately assemble, join and combine materials and componentsReinforce products purposefully considering the aesthetics of the outcome. Accurately apply a range of finishing techniques, including those from art and design to enhance the final product and give an aesthetically pleasing finish.  | Accurately measure, mark out, cut and shape materials and componentsAccurately assemble, join and combine materials and componentsUse techniques that involve a number of stepsDemonstrate resourcefulness when tackling practical problemsAccurately apply a range of finishing techniques, including those from art and design to enhance the final product and give an aesthetically pleasing finish.  |
| **Skill** | **Area** | **EYFS** | **Y1** | **Y2** | **Y3** | **Y4** | **Y5** | **Y6** |
| **Evaluating** | **Own ideas and products** | Share their creations and talk about the process they have used. | Talk about their design ideas and what they are makingMake simple judgements about their products and ideas against design criteriaSuggest how their products could be improved | Talk about their design ideas and what they are making explaining choices of materials and techniquesMake and evaluate moc ups to identify areas to improve. Through discussion in the making process make simple ongoing evaluations and make amendments where necessary. With support make simple evaluative judgements about the ideas and successes of their final products against design criteriaSuggest how their products could be improved using the design criteria to inform |
| Create design ideas to explain making, choices of materials and techniquesMake and evaluate moc ups to identify areas to change or improveWith greater independence make simple ongoing evaluations in the making process and make amendments where necessaryUse the design criteria make evaluative judgements about the ideas and successes of their final products  | Refer to the design criteria as they design to evaluate and ensure the ideas meet the needs of the product. Make and evaluate moc ups to identify areas to further develop, change or improveIndependently make simple ongoing evaluations during the making process and make amendments where necessaryUse design criteria make evaluative judgements about the ideas and successes of their final products considering its purpose  | Evaluate their ideas, designs and products against the original design specificationMake detailed prototypes to identify the strength and weakness of a product and use this to amend designs. Consider the views of others, including intended users, to improve their workMake ongoing evaluations throughout the making process to amend and improve the product to meet the design specification successfullyCritically evaluate their own out comes against design specifications and needs of the consumer.  | Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design Make detailed prototypes to identify the strength and weakness of a product and use this to amend designs. Make ongoing evaluations throughout the making process to amend and improve the product to meet the design specification successfullyCritically evaluate their own out comes and those of others against design specifications and needs of the consumer.  |
| **Existing products** |  | Across KS1 pupils should explore:• what products are• who products are for• what products are for• how products work• how products are used• where products might be used• what materials products are made from• what they like and dislike about products | Across KS2 pupils should investigate and analyse:• how well products have been designed• how well products have been made• why materials have been chosen• what methods of construction have been used• how well products work• how well products achieve their purposes• how well products meet user needs and wants |
| In early KS2 pupils should also investigate and analyse:• who designed and made the products• where products were designed and made• when products were designed and made• whether products can be recycled or reused | In late KS2 pupils should also investigate and analyse:• 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** |  | Across KS1 pupils should:Be introduced to inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. | Across KS2 pupils should know:About significant inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products linked to their own projects. Identify how the significant products have changed our living and the impact they have on the environment.  |
| **Skill** | **Area** | **EYFS** | **Y1** | **Y2** | **Y3**  | **Y4** | **Y5** | **Y6** |
| **Technical knowledge** | **Making products work** | Build with a range of resources including blocks and boxes.Know that safety is an important factor when handling tools and moving equipment and materials.  | Know about the simple working characteristics of materials and componentsKnow about the movement of simple mechanisms such as sliders, wheels and axlesKnow that food ingredients should be combined according to their sensory characteristicsBegin to use the correct technical vocabulary for the projects they are undertaking | Know how freestanding structures can be made stronger, stiffer and more stableKnow about the movement of simple mechanisms such as levers, sliders, pivots, wheels and axlesKnow that a 3-D textiles product can be assembled from two identical fabric shapesKnow the correct technical vocabulary for the projects they are undertaking | Know that materials have both functional properties and aesthetic qualitiesKnow how mechanical systems such as levers and linkages or pneumatic systems create movementKnow how to make strong, stiff shell structuresKnow that a single fabric shape can be used to make a 3D textiles productKnow that food ingredients can be fresh, pre-cooked and processed | How to use learning from science to help design and make products that workHow to use learning from mathematics to help design and make products that workKnow how simple electrical circuits and components can be used to create functional productsBegin to understand how to program a computer to control their products | Know how mechanical systems such as cams or pulleys or gears create movementKnow how to program a computer to monitor changes in the environment and control their productsKnow how to reinforce and strengthen a 3D frameworkKnow that a 3D textiles product can be made from a combination of fabric shapesKnow that a recipe can be adapted by adding or substituting one or more ingredients | Use the correct technical vocabulary for the projects they are undertakingKnow how more complex electrical circuits and components can be used to create functionalproductsUnderstand that materials can be combined and mixed to create more useful characteristics and enhance products.Describe how materials have been used or combined to create useful characteristics or enhance a product Know that mechanical and electrical systems have an input, process and outputUse the correct vocabulary to explain a process for a mechanical or electrical system they have used |
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| **Skill** | **Area** | **EYFS** | **Y1/2** | **Y3/4** | **Y5/6** |
| **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 |
| Know 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 | That seasons may affect the food available | Know why food is transported and the effects this can have on the environment | Know how food is processed into ingredients that can be eaten or used in cooking |
| **Food preparation, cooking and nutrition** | Know and talk about the different factors that support healthy eating. Sort healthy and unhealthy foods.  | 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 sourceKnow how to use techniques such as cutting, peeling and grating | Know how to name and sort foods into the five groups in the eat well plate Confidently use techniques such as cutting, peeling and grating | Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing and spreadingKnow that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the eat well plate. | Appropriately select from a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading kneading and baking to prepare food Know that to be active and healthy, food and drink are needed to provide energy for the body | Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat sourceKnow that different food and drink contain different substances – nutrients, water and fibre – that are needed for health | Know that recipes can be adapted to change the appearance, taste, texture and aroma |
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