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| **SUBJECT: DESIGN TECHNOLOGY** | **DESIGN TECHNOLOGY CURRICULUM PLAN (Primary)** | | | | | | | |
|  | **Technical Knowledge** | | **Design** | | **Make** | | **Evaluate** | |
| *NC objectives* | *Skills progression* | *NC objectives* | *Skills progression* | *NC objectives* | *Skills progression* | *NC objectives* | *Skills progression* |
| **Year 6** | Understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors). Apply their understanding of computing to program, monitor and control their products. | Select materials based on the way the product will be used and its function, and explain why they are fit for purpose, showing a good understand-ing of the situations in which their designs have to function. | Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose, and aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. | Use a few different sources of information, as well as prior knowledge, to help generate a variety of ideas. Respond creatively to briefs, drawing models and sketches to explore & test their design thinking, discussing their ideas with users. Produce plans that outline alternative methods of progressing and develop detailed criteria for their designs and use these to explore design briefs. | Select from and use a wider range of tools and equipment to perform practical tasks accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. | Use a range of tools, materials and processes, showing they understand their characteristics. Work with a range of tools, materials, equipment, components and processes with precision. Work to ensure quality of finish. | Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world. | Check their work as it develops and modify their approach in the light of progress. Reflect on the success of their design/product and their own skill set. Evaluate their product in use and identify ways of improving it, as well as evaluating how effectively they have used information sources. |
| **Year 5** | Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products (e.g. gears, pulleys, cams and levers). | Select materials based on the way the product will be used and its function, and explain why they are fit for purpose, showing a good understand of the situations in which their designs have to function. | Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose, and aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches and prototypes. | Use a few different sources of information as well as prior knowledge to help generate a variety of ideas. Be aware of constraints and how to tackle them. Use discussion, labelled sketches and models to communicate their designs, showing understanding of the characteristics of familiar products and processes, and the users' views. Work from their own plans, modifying them where appropriate. | Select from and use a wider range of tools and equipment to perform practical tasks accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. | Work with a range of tools, materials, equipment, components and processes with some precision. Pay attention to the quality of finish. Pay attention to function of product. | Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world. | Check their work as it develops and modify their approach in the light of progress. Evaluate their design/product and their own skill set. Test and evaluate materials and products, showing an understanding of the situations in which their designs have to function. |
| **Year 4** | Understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors. | Select materials based on the way the product will be used and its function, and explain why they are fit for purpose. | Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose, and aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches and prototypes. | Use research (products and designers) to help generate ideas. Use labelled sketches and models to show their ideas. Make a logical step by step plan. Take users' views into account when exploring their ideas. Think about constraints (things they may not be able to do in time/with the available materials etc.) | Select from and use a wider range of tools and equipment to perform practical tasks. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. | Select and work with a range of tools and materials. Use tools/equipment with some accuracy. Pay attention to the quality of finish. Pay attention to function of product. | Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shaped the world. | Evaluate their designs as they develop (they may change things as they go along - give reason). Identify what is working well and what could be improved. |
| **Year 3** | Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products (e.g. gears, pulleys, cams and levers). | Select appropriate materials without help, and explain why they are fit for purpose. | Develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose. Generate, develop, model and communicate their ideas through discussion and annotated sketches. | Make designs that meet a range of needs. Explain their ideas with some clarity. Use labelled sketches and models to show their ideas. Think ahead about the order of their work. | Select from and use a wider range of tools and equipment to perform practical tasks. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. | Select appropriate tools and equipment. Use appropriate techniques for materials and ideas chosen. Use tools/ equipment with some accuracy to cut and shape materials, and put together components. | Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. | Evaluate their end product design to show how it could be improved. |
| **Year 2** | Build structures, exploring how they can be made stronger, stiffer and more stable. | Begin to select appropriate materials and explain their choices. | Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. | Think of ideas and plan what to do next. Use models, pictures and words to describe their designs. | Select from and use a range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing). Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. | Choose correct tools, techniques and materials, and say why they chose them. Use tools and assemble, join and combine materials and components in different ways. | Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria. | Know what they have done well whilst making and say what they could do better. |
| **Year 1** | Explore and use mechanisms (e.g. levers, sliders, wheels and axles) in their products | Need significant guidance to select appropriate materials. | Design purposeful, functional and appealing products for themselves and other users based on design criteria. | Show an intention to create. They begin to communicate preferences in their designing. Can come up with ideas. With help, can put ideas into practice. Use pictures and words to show what they want to do. | Select from and use a range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing). | With help, they manipulate a wider range of basic tools in making activities, e.g. joining components together to make their intended product. Explain what they are making and which tools they are using. Use tools and materials with help, where needed. | Evaluate their ideas and products against design criteria. | Talk about their own and others' work. Describe, in simple terms, how a product works. |
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