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| **DESIGN & TECHNOLOGY** | **EYFS** | **Year 1** | **Year 2** | **End of Key Stage Expectations** | **Year 3** | **Year 4** | **Year 5** | **Year 6** | **End of Key Stage Expectations** |
| **Design** | Select appropriate resources.  Use gestures, talking and arrangements of materials and components to show design.  Use contexts set by the teacher.  Use language of designing and making (join, build, shape, longer, shorter, heavier etc.). | Have own ideas.  Explain what they want to do.  Explain what their product is for, and how it will work.  Use pictures and words to plan, begin to use models.  Design a product for themselves following design criteria.  Research similar existing products. | Have their own ideas and plan what to do next  Explain what they want to do and describe how they may do it  Explain purpose of product, how it will work and how it will be suitable for the user  Describe design using pictures, words, models, diagrams, begin to use ICT  Design products for myself and others following design criteria  Choose best tools and materials, and explain choices  Use knowledge of existing products to produce ideas | Design purposeful, functional, appealing products for themselves and other users based on design criteria  Generate, develop, model and communicate their ideas through talking, drawing, templates, mockups and, where appropriate, information and communication technology | Begin to research others’ needs  Show design meets a range of requirements  Describe purpose of product  Follow a given design criteria  Have at least one idea about how to create product  Create a plan which shows order, equipment and tools  Describe design using an accurately labelled sketch and words  Make design decisions  Explain how product will work  Make a prototype  Begin to use computers to show design | Use research for design ideas  Show design meets a range of requirements and is fit for purpose  Begin to create own design criteria  Have at least one idea about how to create product and suggest improvements for design.  Produce a plan and explain it to others  Say how realistic plan is.  Include an annotated sketch  Make and explain design decisions considering availability of resources  Explain how product will work  Make a prototype  Begin to use computers to show design. | Use internet and questionnaires for research and design ideas  Take a user’s view into account when designing  Begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose  Create own design criteria  Have a range of ideas  Produce a logical, realistic plan and explain it to others.  Use cross-sectional planning and annotated sketches  Make design decisions considering time and resources.  Clearly explain how parts of product will work.  Model and refine design ideas by making prototypes and using pattern pieces.  Use computer-aided designs | Draw on market research to inform design  Use research of user’s individual needs, wants, requirements for design  Identify features of design that will appeal to the intended user  Create own design criteria and specification  Come up with innovative design ideas  Follow and refine a logical plan.  Use annotated sketches, crosssectional planning and exploded diagrams  Make design decisions, considering, resources and cost  Clearly explain how parts of design will work, and how they are fit for purpose  Independently model and refine design ideas by making prototypes and using pattern pieces  Use computer-aided designs | Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, 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 |
| **Make** | Construct with a purpose, using a variety of resources  Use simple tools and techniques  Build / construct with a wide range of objects  Select tools & techniques to shape, assemble and join  Replicate structures with materials / components  Discuss how to make an activity safe and hygienic  Record experiences by drawing, writing, voice recording  Understand different media can be combined for a purpose | Explain what they are making and why  Consider what they need to do next  Select tools/equipment to cut, shape, join, finish and explain choices  Measure, mark out, cut and shape, with support  Choose suitable materials and explain choices  Try to use finishing techniques to make product look good  Work in a safe and hygienic manner | Explain what I am making and why it fits the purpose  Make suggestions as to what I need to do next.  Join materials/components together in different ways  Measure, mark out, cut and shape materials and components, with support.  Describe which tools they are using and why  Choose suitable materials and explain choices depending on characteristics.  Use finishing techniques to make product look good  Work safely and hygienically | Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]  Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics | Select suitable tools/equipment, explain choices; begin to use them accurately  Select appropriate materials, fit for purpose.  Work through plan in order  Consider how good product will be  Begin to measure, mark out, cut and shape materials/components with some accuracy  Begin to assemble, join and combine materials and components with some accuracy  Begin to apply a range of finishing techniques with some accuracy | Select suitable tools and equipment, explain choices in relation to required techniques and use accurately  Select appropriate materials, fit for purpose; explain choices  Work through plan in order.  Realise if product is going to be good quality  Measure, mark out, cut and shape materials/components with some accuracy  Assemble, join and combine materials and components with some accuracy  Apply a range of finishing techniques with some accuracy | Use selected tools/equipment with good level of precision  Produce suitable lists of tools, equipment/materials needed  Select appropriate materials, fit for purpose; explain choices, considering functionality  Create and follow detailed step-by-step plan  Explain how product will appeal to an audience  Mainly accurately measure, mark out, cut and shape materials/components  Mainly accurately assemble, join and combine materials/components  Mainly accurately apply a range of finishing techniques  Use techniques that involve a small number of steps  Begin to be resourceful with practical problems | Use selected tools and equipment precisely  Produce suitable lists of tools, equipment, materials needed, considering constraints  Select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics  Create, follow, and adapt detailed step-by-step plans  Explain how product will appeal to audience; make changes to improve quality  Accurately measure, mark out, cut and shape materials/components  Accurately assemble, join and combine materials/components  Accurately apply a range of finishing techniques  Use techniques that involve a number of steps  Be resourceful with practical problems | Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], 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 |
| **Evaluate** | \*Adapt work if necessary  \*Dismantle, examine, talk about existing objects/structures  \*Consider and manage some risks  \*Practise some appropriate safety measures independently  \*Talk about how things work  \*Look at similarities and differences between existing objects / materials / tools  \*Show an interest in technological toys  \*Describe textures | Talk about my work, linking it to what I was asked to do  Talk about existing products considering: use, materials, how they work, audience, where they might be used  Talk about existing products, and say what is and isn’t good  Talk about things that other people have made  Begin to talk about what could make product better | Describe what went well, thinking about design criteria  Talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion  Evaluate how good existing products are  Talk about what I would do differently if I were to do it again and why | \*Explore and evaluate a range of existing products  \*Evaluate their ideas and products against design criteria | Look at design criteria while designing and making  Use design criteria to evaluate finished product  Say what they would change to make design better  Begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose  Begin to understand by whom, when and where products were designed  Learn about some inventors/designers/ engineers/chefs/ manufacturers of groundbreaking products | Refer to design criteria while designing and making  Use criteria to evaluate product  Begin to explain how I could improve original design  Evaluate existing products, considering: how well they’ve been made, materials, whether they work, how they have been made, fit for purpose  Discuss by whom, when and where products were designed  Research whether products can be recycled or reused  Know about some inventors/designers/ engineers/chefs/manufacturers of ground-breaking products | Evaluate quality of design while designing and making  Evaluate ideas and finished product against specification, considering purpose and appearance.  Test and evaluate final product  Evaluate and discuss existing products, considering: how well they’ve been made, materials, whether they work, how they have been made, fit for purpose  Begin to evaluate how much products cost to make and how innovative they are  Research how sustainable materials are  Talk about some key inventors/designers/ engineers/ chefs/manufacturers of groundbreaking products | Evaluate quality of design while designing and making; is it fit for purpose?  Keep checking design is best it can be.  Evaluate ideas and finished product against specification, stating if it’s fit for purpose  Test and evaluate final product; explain what would improve it and the effect different resources may have had  Do thorough evaluations of existing products considering: how well they’ve been made, materials, whether they work, how they’ve been made, fit for purpose  Evaluate how much products cost to make and how innovative they are  Research and discuss how sustainable materials are  Consider the impact of products beyond their intended purpose  Discuss some key inventors/designers/ engineers/ chefs/manufacturers of groundbreaking products | 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 |
| **Technical Knowledge – MATERIALS/STRUCTURES** |  | Begin to measure and join materials, with some support  Describe differences in materials  Suggest ways to make material/product stronger. | Measure materials  Describe some different characteristics of materials  Join materials in different ways  Use joining, rolling or folding to make it stronger  Use own ideas to try to make product stronger | Build structures, exploring how they can be made stronger, stiffer and more stable | Use appropriate materials  Work accurately to make cuts and holes  Join materials  Begin to make strong structures | Measure carefully to avoid mistakes  Attempt to make product strong  Continue working on product even if original didn’t work  Make a strong, stiff structure | Select materials carefully, considering intended use of product and appearance  Explain how product meets design criteria  Measure accurately enough to ensure precision  Ensure product is strong and fit for purpose  Begin to reinforce and strengthen a 3D frame | Select materials carefully, considering intended use of the product, the aesthetics and functionality.  Explain how product meets design criteria  Reinforce and strengthen a 3D frame | Apply their understanding of how to strengthen, stiffen and reinforce more complex structures |
| **Technical Knowledge –**  **MECHANISMS** |  | Begin to use levers or slides | Use levers or slides  Begin to understand how to use wheels and axles | Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. | Select appropriate tools/ techniques  Alter product after checking, to make it better  Begin to try new/different ideas  Use simple lever and linkages to create movement | Select most appropriate tools / techniques  Explain alterations to product after checking it  Grow in confidence about trying new / different ideas.  Use levers and linkages to create movement  Use pneumatics to create movement | Refine product after testing  Grow in confidence about trying new / different ideas  Begin to use cams, pulleys or gears to create movement | Refine product after testing, considering aesthetics, functionality and purpose  Incorporate hydraulics and pneumatics  Be confident to try new / different ideas  Use cams, pulleys and gears to create movement | Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] |
| **Technical Knowledge –**  **TEXTILES** |  | Measure, cut and join textiles to make a product, with some support  Choose suitable textiles | Measure textiles  Join textiles together to make a product, and explain how they did it  Carefully cut textiles to produce accurate pieces  Explain choices of textile  Understand that a 3D textile structure can be made from two identical fabric shapes. |  | Join different textiles in different ways  Choose textiles considering appearance and functionality  Begin to understand that a simple fabric shape can be used to make a 3D textiles project | Think about user when choosing textiles  Think about how to make product strong  Begin to devise a template  Explain how to join things in a different way  Understand that a simple fabric shape can be used to make a 3D textiles project | Think about user and aesthetics when choosing textiles  Use own template  Think about how to make product strong and look better  Think of a range of ways to join things  Begin to understand that a single 3D textiles project can be made from a combination of fabric shapes. | Think about user’s wants/needs and aesthetics when choosing textiles  Make product attractive and strong  Make a prototype  Use a range of joining techniques  Think about how product might be sold  Think carefully about what would improve product Understand that a single 3D textiles project can be made from a combination of fabric shapes. |  |
| **Technical Knowledge –**  **FOOD AND NUTRITION** | Begin to understand some food preparation tools, techniques and processes  Practise stirring, mixing, pouring, blending  Discuss how to make an activity safe and hygienic  Discuss use of senses  Understand need for variety in food  Begin to understand that eating well contributes to good health | Describe textures  Wash hands & clean surfaces  Think of interesting ways to decorate food  Say where some foods come from, (i.e. plant or animal)  Describe differences between some food groups (i.e. sweet, vegetable etc.)  Discuss how fruit and vegetables are healthy  Cut, peel and grate safely, with support | Explain hygiene and keep a hygienic kitchen  Describe properties of ingredients and importance of varied diet  Say where food comes from (animal, underground etc.)  Describe how food is farmed, home-grown, caught  Draw eat well plate; explain there are groups of food  Describe “five a day”  Cut, peel and grate with increasing confidence | Use the basic principles of a healthy and varied diet to prepare dishes  Understand where food comes from. | Carefully select ingredients  Use equipment safely  Make product look attractive  Think about how to grow plants to use in cooking  Begin to understand food comes from UK and wider world  Describe how healthy diet= variety/balance of food/drinks  Explain how food and drink are needed for active/healthy bodies.  Prepare and cook some dishes safely and hygienically  Grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking | Explain how to be safe/hygienic  Think about presenting product in interesting/ attractive ways  Understand ingredients can be fresh, pre-cooked or processed  Begin to understand about food being grown, reared or caught in the UK or wider world  Describe eat well plate and how a healthy diet=variety / balance of food and drinks  Explain importance of food and drink for active, healthy bodies  Prepare and cook some dishes safely and hygienically  Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking | Explain how to be safe / hygienic and follow own guidelines  Present product well - interesting, attractive, fit for purpose  Begin to understand seasonality of foods  Understand food can be grown, reared or caught in the UK and the wider world  Describe how recipes can be adapted to change appearance, taste, texture, aroma  Explain how there are different substances in food / drink needed for health  Prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source  Use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. | Understand a recipe can be adapted by adding / substituting ingredients  Explain seasonality of foods  Learn about food processing methods  Name some types of food that are grown, reared or caught in the UK or wider world  Adapt recipes to change appearance, taste, texture or aroma.  Describe some of the different substances in food and drink, and how they can affect health  Prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source.  Use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. | Understand and apply the principles of a healthy and varied diet  Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques  Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed |
| **Technical Knowledge –**  **ELECTRICAL SYSTEMS** |  |  |  |  | Use simple circuit in product  Learn about how to program a computer to control product. | Use number of components in circuit  Program a computer to control product | Incorporate switch into product  Confidently use number of components in circuit  Begin to be able to program a computer to monitor changes in environment and control product | Use different types of circuit in product  Think of ways in which adding a circuit would improve product  Program a computer to monitor changes in environment and control product | Understand and use electrical systems in their products [for example, series circuits |