****Stakesby Primary Academy Design Technology Progression of Skills *Commitment Kindness Excellence*

Declarative skills Procedural skills

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| Year Group | Design | Make | Evaluate | Food and Nutrition | Materials/ Structures | Mechanisms |
| EYFS | Select appropriate resources.Use gestures, talking and arrangements of materials and components to show design.Use contexts set by the teacher and themselves. Use vocabulary plan, make, evaluate.  | Construct with a purpose, using a variety of resources. Use simple tools and techniques.Build / construct with a wide range of objects. Select tools and 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.  | Practise some appropriate safety measures independently. Talk about how things work. Discuss similarities and differences between existing objects / materials / tools. Describe what worked well/ not so well when making their design.Suggest ways to improve their work.  | Name some food preparation tools.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. | Begin to build structures with a range of materials inside and out. Describe textures.  | With support, begin to incorporate simple moving parts into models.  E.g. use split pins to make body parts move.Show an interest in technological toys.  |
| Year 1 | Have their own ideas.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. | Explain what they are making and 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.Work in a safe and hygienic manner. | Talk about their work, linking it to what they were 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 food textures.Wash hands and 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. | Begin to measure and join materials, with some support. Describe differences in materials.Suggest ways to make material/product stronger. | Begin to use levers or slides |
| Year 2 | 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 themselves and others following design criteria. Choose best tools and materials, and explain choices. Use knowledge of existing products to produce ideas. | Explain what they are making and why it fits the purpose. Make suggestions as to what they 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. | 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 they would do differently if they were to do it again and why. | 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. | 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. | With some independence explore and use winding mechanisms.Use levers or slides. Begin to understand how to use wheels and axles.Use scissors safely.  |
| Year 3 | 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.Explain how product will work.  | 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. | Look at design criteria while designing and making.Use design criteria to evaluate finished product.Say what I 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 ground-breaking products. | 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. | Use appropriate materials. Work accurately to make cuts and holes. Understand techniques such as cutting, shaping, hole punching and drilling.Join materials.Begin to make strong structures. | 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. |
| Year 4 | 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 sketches.Make and explain design decisions considering availability of resources. Explain how product will work. Make a prototype. Begin to use computers to show design. | 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 plans 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.  | Refer to design criteria while designing and making. Use criteria to evaluate product.Begin to explain how they 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.Research whether products can be recycled or reused. Know about some inventors/ designers/ engineers/ chefs/ manufacturers of ground-breaking products. | 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. Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. | Measure carefully to avoid mistakes.Understand techniques such as scoring, folding, hole punching and drilling.Attempt to make product strong.Continue working on product even if original didn’t work.Make a strong, stiff structure. | 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. |
| Year 5 | 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. | 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. | 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.Research how sustainable materials are.Talk about some key inventors/ designers/ engineers/ chefs/ manufacturers of ground-breaking products. | 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. | 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. | Refine product after testing.Grow in confidence about trying new / different ideas. Use cams, pulleys or gears to create movement. |
| Year 6 | Draw on market research to inform design. Use research of user’s individual needs, wants and 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, cross-sectional planning and 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 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. | Evaluate quality of design while designing and making; is it fit for purpose? Keep checking design is the 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, consider: how well they’ve been made, materials, whether they work, how they’ve been made, are they 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.Give opinions on some key inventors/designers/ engineers/ chefs/ manufacturers. | 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. | 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. | Begin to develop an understanding of electrical systems which use a buzzer/light/motor and a switch. 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. |