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| **A DESIGN AND TECHNOLOGY EXPERT in Reception** |  |
| Will experience ….   * Making diva lamps * Building and designing houses * Making fruit kebabs   Technical Knowledge  Structures Materials  Food and Nutrition  Design Make Evaluate | **Will know (SUBSTANTIVE KNOWLEDGE) ….**  what different materials are available what materials are the best to use. will know what tools to use  that materials can be joined in a variety of ways how to be hygienic  how to work safely  different materials have different textures that eating well contributes to good health  you need to have a variety in your food choices |
| **Will be able to (DISCIPLINARY KNOWLEDGE) ….**  Use gestures, talking and arrangements of materials and components to show design Use language of designing and making  Use appropriate simple tools  Construct with a simple purpose in mind.  Select appropriate tools to assemble and join Discuss how to make an activity safe and hygienic  Explore different ways of joining and choosing appropriate joining techniques Discuss how a product works  Talk about existing products - what they like/dislike about them.  Talk about textures. |

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| **A DESIGN AND TECHNOLOGY EXPERT in YR1** |  |
| **Will experience ….**  using levers, pivots and sliders to create a Dancing Santa and Christmas card  making a moving train,  designing and creating a healthy fruit salad  Technical Knowledge  Structures Mechanisms  Food and Nutrition  Design Make Evaluate | **Will know (SUBSTANTIVE KNOWLEDGE) ….**  which tools are appropriate to use and how to use them safely. how a plan will help to develop a product.  which materials are appropriate to use how to work safely and hygienically  what a lever and a slider is / what a wheel an axel is where different food comes from  how to decorate food so it looks appetising that fruits and vegetables are healthy |
| **Will be able to (DISCIPLINARY KNOWLEDGE) ….**  to develop their own ideas into a plan with support  explain and describe ideas using pictures and words and ICT skills where appropriate use knowledge of existing products to produce ideas.  select tools/equipment to cut, shape, join, finish and explain choices –for example scissors measure, mark out, cut and shape, with support  choose suitable materials and explain their choices  try to use finishing techniques to make product look good work in a safe and hygienic manner  use a lever / slider to create a dancing santa  begin to understand how to use wheels and axles with support. describe different textures – food choices  wash hands and surfaces  discuss how to decorate food fit for purpose cut, peel and grate safely with support.  describe what went well and refer to the planning document. talk about and begin to evaluate existing products  talk about what they would do differently if they were to do it again |

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| **A DESIGN AND TECHNOLOGY EXPERT in Y2** |  |
| **Will experience ….**  Making a 3D phone case  Making a bridge /structure  Making a healthy food art  Design Make Evaluate  Technical Knowledge   * Textiles   Structures  Food and Nutrition | **Will know (SUBSTANTIVE KNOWLEDGE) ….**  what a template is.  what materials are best to use.  Different designs of bridges  where food comes from (different places in the world)  what sort of foods are healthy and show this with a food plate. the term ‘five a day’  how to cut, grate and peel |
| **Will be able to (DISCIPLINARY KNOWLEDGE) ….**  have their own ideas and plan what to do next.  explain the purpose of the product that is being produced.  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 join materials/components in different ways  mark out, measure, cut and shape materials with support.  discuss the characteristics of materials and how to make a product stronger u  create a strong/sturdy bridge or structure  choose suitable materials and tools and explain choices  use finishing techniques to make the product look appealing  work safely and hygienically and keep hands and surface hygienic at all times describe the properties and importance of the ingredients they are using  cut, grate and peel with increasing confidence describe what went well referring to the plan  talk about and evaluate how good existing products are in relation to use/audience/materials  talk about what they would do differently if they did it again. |

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| **A DESIGN AND TECHNOLOGY EXPERT in Y3** |  |
| **Will experience ….**  Making Christmas gift boxes  Designing and making a moving Easter ornament  Making a light box  Technical Knowledge  Structures  Mechanisms/materials  Electronics/Materials | **Will know (SUBSTANTIVE KNOWLEDGE)….**  they need to work from a clear plan the materials available to use  what tools they need to use  what a lever and linkage is  how to mark out an measure accurately how to make a structure strong  why it is important to make a product look good where food comes from  that you can grow your foods to cook with such as herbs that food is needed for a healthy/active body  that food can come from all over the world |
| **Will be able to (DISCIPLINARY KNOWLEDGE) ….**  plan a design which meets a range of requirements describe the purpose of the product  follow a design criteria  create a plan which shows order, tools and equipment  design the product using detailed sketches and labels explain how a product will work  select appropriate tools and equipment discuss why they have been chosen and begin to use them accurately  set materials fit for purpose  work through a plan in the correct order  mark out, measure, cut and shape with little support assemble, join and combine materials with some accuracy apply finishing techniques with some accuracy  use simple lever and linkages to create movement begin to make strong structures  use design criteria to evaluate finished product  discuss what they would do to make the produce better  learn about famous inventors and designers and ground breaking products |

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| **DESIGN AND TECHNOLOGY EXPERT in Y4** |  |
| **Will experience ….**  Making healthy wraps  Designing and making an electrical game  Making a moving monster  Design Make Evaluate  Technical Knowledge  Structures Mechanisms  Food and Nutrition | **Will know (SUBSTANTIVE KNOWLEDGE) …**   * that ingredients can be fresh, pre-cooked or processed * about food being grown, reared or caught in the UK or wider world * where food comes from * how to work from a clear annotated plan * which materials are available to them * which materials are the most appropriate to use. * What a lever and linkage is. * How to make a moving picture * how to make a structure strong and fit for purpose * will know how to make a product look good. |
| **Will be able to (DISCIPLINARY KNOWLEDGE)….**   * use research for design ideas * show design meets a range of requirements * begin to create own design criteria * have at least one idea about how to create product and suggest improvements for design. * include an annotated sketch * make and explain design decisions considering availability of resources * explain how product will work * make a prototype * explain how to be safe/hygienic * think about presenting product in interesting/ attractive ways * select suitable tools and equipment, explain choices in relation to required techniques and use accurately * select appropriate materials, fit for purpose. * work through plan in order * consider how good product will be * 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 * attempt to make product strong * continue working on product even if original didn’t work * make a strong, stiff structure * use levers and linkages to create movement * prepare and cook some dishes safely and hygienically * use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking * 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 * research whether products can be recycled or reused * know about some inventors and designers |

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| **A DESIGN AND TECHNOLOGY EXPERT in Y5** |  |
| **Will experience ….**  Making a wooden shelter  Making a moving Greek tory  Making some African food  Design Make Evaluate  Technical Knowledge  Structures  Mechanisms/CAMS Food and Nutrition | **Will know (SUBSTANTIVE KNOWLEDGE) ….**   * that ingredients can be fresh, pre-cooked or processed * about food being grown, reared or caught in the UK or wider world * where food comes from * how to work from a clear annotated plan * which materials are available to them * which materials are the most appropriate to use. * how to measure, mark and cut accurately * how to strengthen a product to make it fit for purpose * what a CAM, pulley and gear is * different techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. * how to evaluate an existing product effectively * how to evaluate their own design effectively and suggest changes |
| **Will be able to (DISCIPLINARY KNOWLEDGE) ….**   * use research for design ideas * show design meets a range of requirements and is fit for purpose * begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose * produce a logical, realistic plan and explain it to others. * use cross-sectional planning and annotated sketches * make design decisions considering time and resources. * explain how product will work * make a prototype * 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 * work through plan in order. * 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 * ensure product is strong and fit for purpose * begin to reinforce and strengthen a 3D frame * begin to use cams, pulleys or gears to create movement * 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. * present product well - interesting, attractive, fit for purpose * evaluate quality of design while designing and making * evaluate ideas and finished product against specification, considering purpose and appearance. * evaluate 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 |

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| **A DESIGN AND TECHNOLOGY EXPERT in Y 6** |  |
| **Will experience ….**  Making a hat  Making a carousel  Making a burglar alarm  Design Make Evaluate  Technical Knowledge  Textiles/materials  Mechanisms  Electronics | **Will know (SUBSTANTIVE KNOWLEDGE)….**  what a detailed step-by step plan is what a design criteria is  how to create a cross sectional plan and include annotated sketches the seasonality of different foods  which tools are available to use  what a template is  how to join materials together  what a CAM, gear or pulley is and how it creates movement  .how to evaluate existing products |
| **Will be able to (DISCIPLINARY KNOWLEDGE) ….**  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  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 begin to understand seasonality of foods  understand food can be grown, reared or caught in the UK and the wider world 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  begin to use cams, pulleys or gears to create movement ensure product is strong and fit for purpose  think about user and aesthetics when choosing textiles use own template  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. present product well - interesting, attractive, fit for purpose  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, including how much they cost and how innovate they are talk about key inventors, designers and engineers.  describe how recipes can be adapted to change appearance, taste, texture, aroma |