Ashurst Wood Primary School- Progression of Skills- Design and Technology

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|  | **EYFS** | **Year One** | **Year Two** | **End of KS 1 expectations** | **Year Three** | **Year Four** | **Year Five** | **Year Six** | **End of KS2****expectations** |
| **DESIGNING** | * Select appropriate resources
* Use gestures, talking and
* arrangements of materials and components to show design
* Use contexts set by the teacher and myself
* Use language of designing and making (join, build, shape, longer, shorter, heavier etc.)
 | * have own ideas
* explain what I want to do
* explain what my product is for, and how it will work
* use pictures and words to plan, begin to use models
* design a product for myself following design criteria
* research similar existing products
 | * have own ideas and plan what to do next
* explain what I want to do and describe how I 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, mock ups 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, cross sectional 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 I’m making and why
* consider what I 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 I’m 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* |

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| **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 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 | * 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 ground breaking 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 ground breaking 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* |

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| **Technical Knowledge. Materials and 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 system 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 I 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, caughtdraw eat well plate; explain there are groups of fooddescribe “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, Mgrating, 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* |