 Design Technology Long Term Overview 

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| **Class** | **Autumn Term** | **Spring Term** | **Summer Term** |
|  | **1** | **2** | **1** | **2** | **1** | **2** |
| **Pre-School**  | **All About me!**  Starting Pre- School Who is in my family?  What makes me special?     | **Celebrations!**  Birthdays Christmas  Bonfire Night The Nativity Story  Halloween Celebrations  What do others celebrate? (RE)  Dinosaurs (linking to personal interests)     | **Marvellous Minibeasts!**   Minibeasts Who am I? describing minibeasts Comparing animals- jungle, arctic Cold and hot countries  Planting flowers to attract minibeasts  Rising 3’s New topics based on children’s interests       | **People who help us!** **Construction**  How does Fireman Sam help people?  999, what’s your emergency?  Cars and different modes of transport Trains Aero planes Baby clinic and nurses   What does the Easter Bunny do?  Dentist visit? Teeth bushing and oral health  Rising 3’s New topics based on children’s interests. | **Let’s grow!**  Growing sunflowers Nature walks and looking at the weather Making a rain catcher Rainbows Planting and growing own fruit and vegetables Fruit salads  Rising 3’s New topics based on children’s interests    | **FANTASY LAND!**  Graduation ceremony Personal interests – Sooty, Elsa, Peppa, Toy story Castles, knights and Dragons Sleeping Beauty Frozen- Elsa Pirates  Rising 3’s New topics based on children’s interests  |
| **Personalisation and Subject Links**  | Everything planned from children’s interests from parent’s questionnaires on children’s likes.  DT in Pre- School won’t follow a set DT week but children will explore the pre learning needed for DT using the statements from Development Matters as a guide for leaning. All learning will be based upon children’s interests.  I can make a simple collage I can develop simple joining techniques – glue sticks/ PVA/ sellotape I can use various construction materials – joining pieces/ stacking / balancing  I can use resources available to create props / support my play  **Key learning in D&T in Pre-School will come up as the year progresses on children’s interests (See EX A & D floor book)**   |
| **Reception**  **Key learning will come up as the year progresses on children’s interests (See EX A & D floor book)**   |   Use different textures and materials to make houses for the three little pigs   |  Shadow Puppets  Teach children different techniques for joining materials, such as how to use adhesive tape and different sorts of glue.    | Design and make rockets. Design and make objects they may need in space, thinking about form and function.    |
| **Personalisation and Subject Links** | Everything planned from children’s interests from parent’s questionnaires on children’s likes.Key Skills from New Early Adopter• Explore – experiment and build with a range of construction resources, find out about the properties and functions of different construction materials. • Design – talk about their ideas, choose resources, tools and techniques with a purpose in mind. • Make – make models and props using different construction materials, e.g. construction kits, reclaimed materials. Experiment with different ways to build, construct and join resources. Make props to use in their play /role play/ when acting out stories/taking on story characters. • Evaluate – talk about what they like/dislike about their models/constructions/props say why, and how they would change them. • Tools and equipment – use equipment and tools to build, construct and make simple models and props; use tools and equipment linked to food preparation. • Safety – handle and use equipment appropriately and safely.Ongoing: Creating with Materials ELGs• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • Share their creations, explaining the process they have used. Make use of props and materials when role playing characters in narratives and stories. |
| **vocabulary** | Build, Plan, Design, Make, Test, Structure, pigs, wolf, strong, bricks, wood, sticks, paper | Glue, tape, shadow, lollypop stick, puppet, show, sun, light, dark  | Design, make, plan, evaluate, rockets, space  |
|  |
|  | **1** | **2** | **1** | **2** | **1** | **2** |
| **Elm** |  | **Mechanisms:** **Moving pictures incorporating sliding mechanisms****Design a moving Christmas card for your parents****Design*** 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

**Make*** Select from and use a range of tools and equipment to perform practical tasks.
* Select from and use a wide range of materials and components, including materials and construction according to their characteristics.

**Evaluate*** Explore and evaluate a range of existing products.
* Evaluate their ideas and products against design criteria.

**Technical Knowledge**Know how a sliding and pivoted lever work | **Textiles:** **Design a scarf to keep the queen warm (story The Queen’s Hat).****Design*** design purposeful, functional, appealing products for themselves and other users based on design criteria.
* Generate, develop, model and communicate their ideas through talking, drawing

**Make*** select from and use a range of tools and equipment to perform practical tasks
* Select from and use a wide range of materials and components, including materials and textiles according to their characteristics

**Evaluate*** evaluate their ideas and products against design criteria
* Explore and evaluate a range of existing products.

**Technical Knowledge*** Know how to create a template for the umbrella.
* Know how to do a running stitch to join
 |  | . **Food Tech:** **Design a fruit salad as a healthy snack for a reception child****Design*** use research and develop design criteria to inform the design of innovative and functional products that are fit for purpose, aimed at particular individuals or groups
* generate and communicate their ideas through discussion, diagrams and drawings.

**Make*** prepare a fruit salad to complement a healthy diet
* select from and use a wider range of tools and equipment to perform practical tasks

**Technical Knowledge*** Use the basic principles of a healthy and varied diet to prepare dishes.
* Understand where food comes from
 |  |
| **Personalisation and Subject Links** |  | R.E. Christmas | Science (testing materials and ways of joining together)English: classic stories |  | Science- The Human BodyFitness Week- Keeping Healthy |  |
| **vocabulary** |  | evaluate, investigate, design, plan, make, user, purpose, product, tools, materials |  |
|  | Moving picture, mechanism, test, move,, materials, tools, Sellotape, masking tape, PVA glue, glue, scissors, split pin, fire, Fire of London, create, test, slider, lever, pivot, slot, bridge/guide, upwards, downwards, forwards, backwards | Material, waterproof, test, join, decorate, smooth, soft, rough, bumpy, cut, scissors, template, pattern pieces, mark out, finish, fabricnames of fabrics & components |  | Food, fruit, fruit salad, The Body, Healthy eating, colours, supermarket, tinned, fresh, frozen. chop, knife, grate, juice, create, taste, hygienic, sensory vocab.names of ingredients |  |
| **Oak Y1** |  | **Mechanisms: Moving pictures incorporating sliding mechanisms****Design*** 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

**Make*** Select from and use a range of tools and equipment to perform practical tasks.
* Select from and use a wide range of materials and components, including materials and construction according to their characteristics.

**Evaluate*** Explore and evaluate a range of existing products.
* Evaluate their ideas and products against design criteria.

**Technical Knowledge*** Know how a sliding and pivoted lever work
 | **Textiles: Design a pair of Knickers for Queen Victoria to wear on her royal visits.****Design*** 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

**Make*** Select from and use a range of tools and equipment to perform practical tasks.
* Select from and use a wide range of materials and components, including materials and textiles according to their characteristics.

**Evaluate*** Explore and evaluate a range of existing products.
* Evaluate their ideas and products against design criteria

**Technical Knowledge*** Know how to create a template. Use a running stitch to join. Thread a needle.
 |  | **Food/****Design a fruit face to encourage a young child to eat healthily.**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

**Make*** select from and use a range of tools and equipment to perform practical tasks e.g. cutting, grating, slicing, peeling.
* select from and use a range of ingredients, according to their characteristics.

**Evaluate*** Explore and evaluate a range of existing products.
* Evaluate their ideas and products against design criteria.

**Technical Knowledge*** Know how to slice, peel, cut different fruits - safely with the correct equipment.
 |  |
| **Personalisation and Subject Links** |  | history: Fire of London | history: Queen VictoriaEnglish: story |  |  |  |
| **vocabulary** |  | evaluate, investigate, design, plan, make, user, purpose, product, tools, materials |
|  | Moving picture, mechanism, test, move,, materials, tools, Sellotape, masking tape, PVA glue, glue, scissors, split pin, fire, Fire of London, create, test, slider, lever, pivot, slot, bridge/guide, upwards, downwards, forwards, backwards | needle, pin (cushion), thread, stitch, knot, join, template, pattern piecesmark out, decorate, finish, fabricnames of fabrics & components |  | Food, fruit, fruit salad, The Body, Healthy eating, colours, supermarket, tinned, fresh, frozen. chop, knife, grate, juice, create, taste, hygienic, sensory vocab.names of ingredients |  |
| **Y2** |  | **Construction: Bridges****Design and build a bridge for a toy vehicle so it can bridge a gap****Design*** 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

**Make*** build structures, exploring how they can be made stronger, stiffer and more stable

**Evaluate*** Explore and evaluate a range of existing products.
* Evaluate their ideas and products against design criteria.

**Technical Knowledge*** Know how to strengthen structures
 | **Mechanisms: wheels & axles****Design and build a lunar buggy for Bob the spaceman so he can travel around the moon****Design*** 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, ICT.

 **Make*** Select from and use a range of tools and equipment to perform practical tasks.
* Select from and use a wide range of materials and components.
* Build structures, exploring how they can be made stronger, stiffer and more stable.
* Explore and use mechanisms (wheels & axles) in their products

 **Evaluate*** Explore and evaluate a range of existing products.
* Evaluate their ideas and products against design criteria.

**Technical Knowledge*** Know how wheels and axles work together to allow movement
 |  | **Cooking and nutrition:** **Make a healthy snack for Reception*** Use the basic principles of a healthy and varied diet to prepare dishes.
* Understand where food comes from

**Technical Knowledge**Know how to grate, slice, peel, cut different fruits and vegetables- safely and with the correct equipment. |  |
| **Personalisation and Subject Links** |  |  | ScienceHistory: Explorers |  | Science healthy eating |  |
| **vocabulary** |  | purpose, product, user, design criteria, evaluate, tools, plan, diagram, label, investigate, adapt, functionnames of materials, components and tools used |  |
|  | cut, fold, join, fix, weak/strong, stablethinner/thicker, fixed joint, moving jointreduce/reuse/recycle, material, paper, card, glue, tape, names of shapes & properties structure, framework, base, top/side/edge, surface, corner, straight, load, span | wheel, axle, axle holder, chassis, fixed, free, moving, mechanism, vehicle, assembling, cutting, joining, shaping, finishing |  | sensory vocab, shop, supermarket, factoryfarm, names of equipment and utensils used, slice, peel, cut, chop, squeeze, juice, fruit and vegetable names, skin/peel, seed/pip/stone core, salad, clean, hygienic, healthy diet, balance, ingredients, carbohydrate, fruit, vegetables, protein, dairy, fat, sugar, tinned, dried, fresh, frozen |  |
| **Year 3** |  | **Food technology:** **Design a healthy sandwich that your Y3 friend would enjoy eating.****Design*** use research and develop design criteria to inform the design of innovative and functional products that are fit for purpose, aimed at particular individuals or groups
* generate, model and communicate their ideas through discussion, annotated sketches and cross-sectional diagrams.

**Make*** prepare a savoury dish for a relevant occasion & consumer
* select from and use a wider range of tools and equipment to perform practical tasks

**Technical Knowledge*** Know that food ingredients can be fresh, pre-cooked and processed
* understand and apply the principles of a healthy and varied diet
* understand seasonality, and know where and how a variety of ingredients are grown or reared
 | **DT : pneumatic mechanisms****Design a moving monster to surprise R/Y1 children and mane them smile.****Design*** develop design criteria to inform the design of 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 and prototypes

**Make*** 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, according to their functional properties and aesthetic qualities

**Evaluate*** investigate and analyse a range of existing products
* evaluate their ideas and products against their own design criteria as they progress and consider the views of others (inc intended users) to improve their work

**Technical knowledge*** know how mechanical systems such as pneumatic systems create movement
 |  | **DT: structures****Design and build an outdoor shelter to keep a group of five Y3 children shaded from the sun.****Design*** use research and develop design criteria to inform the design of innovative and functional products that are fit for purpose, aimed at particular individuals or groups
* generate, develop, model and communicate their ideas through discussion, annotated sketches/ diagrams and prototypes

**Make*** select from and use a wider range of tools and equipment to perform practical tasks
* select from and use a wider range of materials including construction materials, according to their functional properties

**Evaluate*** investigate and analyse existing products
* evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

**Technical knowledge*** Know how to make a structure more stable.
 |  |
| **Personalisation and Subject Links** |  | Link to science healthy eating | Link to Iron Man / story (Eng, sci forces) |  | science: light & shadowsUse of outdoor area & team-building skills  |  |
| **vocabulary** |  | model, design, evaluate, prototype, investigate, plan, construction sequence, appealing, intended user, purpose, function, functional, design criteria, exploded diagram, annotated sketch, adapt, modifynames of materials, tools and components used |  |
|  | ingredient, slice, chop, grate, peel, fresh, processed, consumer, seasonal, grown vs reared, farmed, hygienic, (vocab concerning “Eatwell Plate”), aesthetics, cross-section, (vocab for ingredients used), chopping board, grater, peeler, vegetable knife, butter knife, vegetarian ,vegan, allergy, diet | design criteria, function, functional, modify, evaluate, purpose, mechanism, pneumatic system, pressure, compress, force, input, output, component, design sequence, (vocab for components, materials & fixatives used inc. syringe, tubing, masking tape, sticky tape, PVA) |  | structure, prototype, mock up, user, stable, stability, strength, support, frame, framework, joint, (vocab for components, materials & fixatives used) |  |
| **Year 4** |  | **Electrical Systems:** **Design a Christmas card that lights up for a family member or friend.****Design*** use research and develop design criteria to inform the design of innovative and functional products that are fit for purpose, incorporating electrical systems (switches, bulbs, buzzers & motors) and aimed at particular individuals or groups
* generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional diagrams and prototypes

Make* select from and use a wider range of tools and equipment to perform practical tasks
* select from and use a wider range of materials including construction materials & electrical components, according to their functional properties

**Evaluate*** investigate and analyse a range of existing products
* evaluate their ideas and products against their own design criteria as they progress and consider the views of others to improve their work

**Technical knowledge*** Know how simple electrical circuits and components can be used to create functional products
 | **Textiles: pencil case****Design a pencil case for a Y4 child to use in school.****Design*** 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 ideas through …

**Make*** Select from and use a wider range of tools and equipment to perform practical tasks (cutting, shaping, joining and finishing) accurately
* Select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities

**Evaluate*** Evaluate their ideas and products against their own design criteria and consider the views of others, including intended users, to improve their work
* investigate and analyse a range of existing products

**Technical Knowledge*** Know that a single fabric shape can be used to make a 3D textiles product
 |  | **Food Technology****Make a healthy fajita for us to eat for our lunch*** 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*** Know that food ingredients can be fresh, pre-cooked and processed
 |  |
| **Personalisation and Subject Links** |  | Science: electrical circuits | useful product |  | Science: healthy eating |  |
| **vocabulary** |  | evaluate, prototype, purpose, function, appealing, plan, adapt, modify, innovative, evaluation, annotated sketch, construction sequence, design brief, design criteria, intended usermanes of materials, components and tools used |  |
|  | names of tools, equipment and materials used, series circuit, connection, switchbattery (holder) bulb (holder) wire, insulator, conductor, crocodile clip, control, system, mechanism, lever, linkage, pivot, slot, bridge, guide, system, input/output, process, linear/ rotary motion | fastening, button, hook, compartment, structure, finishing technique, strength/weakness, stiffening, templates, fabric, names of fabrics, stitch, seam, seam allowance |  | texture, taste, flavour, sweet/sour, hot, spicy, appearance, smell, moist/dry, savoury, bake, cook, boil, prepare, hygienic, harvested, grown, reared,caught, seasonal, processed, fresh, dried, grate, chop, slice, peel, spread, ingredients, balance, amount, quantitycarbohydrate, fruit, vegetables, fibre, protein, dairy, fat, sugar, diet, allergy, vegetarian, vegan |  |
| **Year 5** |  | **Food Tech : Mexican food*** 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
* evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

**Technical Knowledge** * Knowthat a recipe can be adapted by adding or substituting one or more ingredients
 | **Mechanical Systems: Cams****Design*** 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*** select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
* **Evaluate**
* 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

**Technical Knowledge*** know how mechanical systems such as cams are used to create movement
 |  | **Textiles: mobile phone holders** (joining with seam allowance, combining fabrics)**Design*** 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

**Make*** 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**
* 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

**Technical Knowledge*** Know that a 3D textiles product can be made from a combination of fabric shapes
 |  |
| **Personalisation and Subject Links** |  | Link with English writing recipes |  link sci animals/ history mythological creatures/art |  | useful product |  |
| **vocabulary** |  | design process, design decisions, design specification, design brief, design criteria, evaluate, mock-up, prototype, modify, adapt, annotate, plan of construction, annotated sketch, exploded diagram, cross-sectional diagram, authentic, functional, functionality, innovative, affordability, appeal, intended user, purpose, function, research, innovationnames of components, tools and materials used |  |
|  | Hygiene, Food safety, Equipment, Utensils, Techniques, Ingredients, Sweet, Sour, Taste, Hot, Spicy, Fresh, Savoury, Edible, Grown, Reared, Tinned, Frozen, Seasonal, Recipe, Nutritional information, Calories, Harvested, spice, herbs, fat, dough, knead, proof, names of food groups, vitamins, fibre, allergen, allergy, intolerance, vegan, vegetarian, source, combine | Round, Egg-shaped, Ellipse, Eccentric, Snail, Hexagon, Cam, Follower, Slider, Handle, action |  | names of textiles and fastenings used seam, seam allowance, hem, Press stud, Embellish, Evaluation, Material, Fastenings, Decoration, reinforce, pattern pieces, durability, right/wrong side |  |
| **Year 6** |  | **Structures: (to be included in summer unit 2023)****Design** * 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** * 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

**Evaluate** * 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*** Know how to reinforce and strengthen a 3D framework
 | **Food Tech: Design and make a loaf of bread for your parents to enjoy.****Design** * 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** * 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

**Evaluate** * 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*** Know that a recipe can be adapted by adding or substituting one or more ingredients
 |  | **Mechanisms:** **Theme Park: Moving Features****Design a moving theme park ride (that can be coded and controlled) as part of the theme park maths project****Design** * 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** * 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

**Evaluate** * 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*** Know how to program a computer to monitor changes in the environment and control their products.
* Apply prior knowledge of mechanisms.
 |  |
| **Personalisation and Subject Links** |  |  |  |  | Theme Park Maths |  |
|  |  | design decisions, design specification, design brief, design criteria, evaluate, mock-up, prototype, modify, adapt, annotate, plan of construction, annotated sketch, exploded diagram, cross-sectional diagram, authentic, functional, functionality, innovative, affordability, appeal, intended user, purpose, function, research, innovationnames of components, tools and materials used |  |
| **vocabulary** |  | frame structure, shell structure, stiffen, strengthen, reinforce, stability, shape, score, tab, temporary, permanent, join, joint | ingredients, spice, herbs, food groups, vitamins, nutrients, nutrition, healthy, varied, edible, calories, nutritional information, allergy, intolerance, savoury, source, seasonal, grown, reared, harvested, farmed, caught, fresh, dried, utensils, combine, fold, stir, pour, mix,, roll out, shape, sprinkle, crumble |  | tilt switch, bulb (holder), battery (holder), wire, insulator, conductor, crocodile clip, control, program, system, input device, output device, series circuit, parallel circuit |  |