Abbey Road Primary School - Design and Technology Progression (Equals Trust)

		EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Topics	Mechanisms		• Sliders and Levers- make a moving picture	• Wheels and Axels- moving vehicle	• Pneumatics- moving mascot	• Electrical- simple circuits and switches	• Cams- moving toy	• Fairground ride with electrical links/ coding
	Structures			• Freestanding - playground equipment		• Shell structures (environmental link)	• Frame structures - bird hide	
	Textiles		• Templates and joining-		• 2D shape to 3D product		• Combining fabric shapes- designer bag with fastener	
	Food		• Food – Biscuits	• Food- Preparing fruit and vegetables	• Sandwich snacks	• Soups	• Bread	• WWII rationing- seasonality and culture.
Designing	Understand users and purposes	• Say who they are making things for • Talk about how their products work	• Say who their products are for • Talk about how their products will work	• Describe what their products are for & say how their products will work • Say how they will make their products suitable for their intended users • Use simple design criteria to help develop their ideas	• Describe what their products are for say how their products will work • Explain how particular parts of their products work • Use design criteria to shape their ideas	• Explain how the features of their products will appeal to intended users • Explain how particular parts of their products work • Gather information about the needs and wants of particular individuals and groups • Develop their own simple design criteria and use these to shape their ideas	• Describe the purpose of their products • Indicate the design features of their products that will appeal to the intended users • Explain how particular parts of their products work • Gather information about the needs and wants of particular individuals and groups • Develop a simple design specification to guide their thinking	• Describe the purpose of their products • Indicate the design features of their products that will appeal to intended users • Explain how particular parts of their products work • Use market research to inform ideas • Develop a design specification to guide their thinking
	Ideas	• Use ideas from imagination or the world to make something	• Use own ideas to make something • Test out some ideas and materials with support	• Use own experiences in their ideas • Draw ideas and explain why they have been chosen • Model ideas (try materials, parts and construction kits) • Make a templates and mock-ups	• Design a product, how it looks and works • Think through ideas with someone else • Model ideas using prototypes and pattern pieces • Draw and label designs • Use ICT to design to develop and communicate ideas	• Share and clarify ideas through discussion • Model ideas using prototypes and pattern pieces • Use annotated sketches to develop and communicate ideas • Use ICT to design to develop and communicate their ideas	• Share and clarify ideas through discussion • Model ideas using prototypes and pattern pieces • Use annotated sketches and cross-sectional drawings to develop and communicate their ideas • Use ICT to develop and communicate their ideas • Generate ideas drawn from research	• Share and clarify ideas through discussion • Model ideas using prototypes and pattern pieces • Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas • Use ICT to develop and communicate their ideas • Generate innovative ideas, drawing on research • Make design decisions, taking account of constraints such as time and resources
Making	Planning	• Talk about how their idea will work	• Explain how they will make their product	• Choose tools and materials and explain why they have been chosen • Make a simple plan before making	• Select tools and equipment suitable for the task • Follow a step by step plan, choosing the right materials and tools	• Explain their choice of tools and equipment in relation to the skills and techniques they will be using and the task • Choose materials and components according to how they work and look • Order the main stages of making	• Select tools and equipment suitable for the task • Explain their choice of tools and equipment in relation to the skills and techniques they will be using • Select materials and components suitable for the task • Explain their choice of materials and components according to functional properties and aesthetic qualities • Produce appropriate lists of tools, equipment and materials that they will need • Make step-by-step plans as a guide to making	
	Practical skills and techniques	• Use scissors to cut straight and curved lines. • Cut around marked lines with increased accuracy • Colour finished work	• Use scissors safely to cut around a marked line • Make a product which moves • Colour finished product	• Join and combine materials in different ways • Choose appropriate resources and tools safely • Measure, mark out, cut and shape materials • Use finishing techniques, including those from art and design **Food**: • Prepare simple dishes safely and hygienically without heat • Use techniques such as cutting, peeling and grating	• Follow procedures for safety and hygiene • Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components • Measure, mark out, cut and shape materials and components with some accuracy • Assemble, join and combine materials and components with some accuracy • Apply a range of finishing techniques, including those from art and design, with some accuracy **Food**: • Prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.		• Follow procedures for safety and hygiene • Use a wider range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components • Accurately measure, mark out, cut and shape materials and components • Accurately assemble, join and combine materials and components • Accurately apply a range of finishing techniques, including those from art and design • Use techniques that involve a number of steps • Demonstrate resourcefulness when tackling practical tasks **Food**: • How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking • Adapt recipes to change the appearance, taste, texture and aroma	
Evaluating	Own ideas and products	• Talk about their design ideas and what they are making • Say if their idea worked	• Talk about their design ideas and what they are making • Say if their idea worked	• Make simple judgements about their products and ideas against design criteria • Suggest how their products could be improved	• Show how their final product meets the design criteria • Explain what went well and what they would change in their final design	• Explain what went well and what they would change • Use design criteria as they design and make • Use their design criteria to evaluate their completed products • Explain how they improved their original design	• Identify the strengths and areas for development in their ideas and products • Consider the views of others, including intended users • Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make • Evaluate their ideas and products against their original design specification	
	Investigating existing products	• Talk about how toys work and what different parts do.	• Who are they for? • What are they for? • How does it work? • How and where are they used • What materials is it made from? • What do you like and dislike about it?		• How well have products been designed and made? • Why have those materials been chosen? • What methods of construction have been used? • How well do they work and achieve their purposes and meet user needs and wants? **Investigate and analyse:** • Where products were designed and made • When products were designed and made • Whether products can be recycled or reused		• How well have products been designed and made? • Why have those materials been chosen? • What methods of construction have been used? • How well do they work and achieve their purposes and meet user needs and wants? **Investigate and analyse:** • How much products cost to make • How innovative products are • How sustainable the materials in products are • What impact products have beyond their intended purpose

Abbey Road Primary School - Design and Technology Progression (Equals Trust)

Technical knowledge

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Designers				• Know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	• Use learning from science and maths helps design and make products that work • Know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	• Apply learning from science and maths to help design and make products that work • Know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	
Textiles	• Explore what materials are like.	• Know simple properties of materials	• Know characteristics of materials and components • Know that a 3-D textiles product can be assembled from two identical fabric shapes	• Know that materials have both functional properties and aesthetic qualities • Know that a single fabric shape can be used to make a 3D textiles product	• Know materials can be combined and mixed to create more useful characteristics	• Know that materials have both functional properties and aesthetic qualities • Know that materials can be combined and mixed to create more useful characteristics • Know that a 3D textiles product can be made from a combination of fabric shapes	
Structure	• Explore building structures from construction materials (blocks)		• Know how to make structures stronger, stiffer and more stable	• Know how to make strong, stiff shell structures	• Know how to make strong, stiff shell structures	• Know how to reinforce and strengthen a 3D framework (eg triangulation, Jinx Joints, cross beams)	
Mechanism		• Know how to make part of a model move (slider, wheels)	• Know how to make a model move using simple mechanisms such as levers, sliders, wheels and axles • Know about the movement of simple mechanisms such as levers, sliders, wheels and axles	• Know how mechanical systems such as levers and linkages create movement	• Know how mechanical systems such as levers and linkages or pneumatic systems create movement • Know how simple electrical circuits and components can be used to create functional products	• Know how mechanical systems such as cams or pulleys or gears create movement • Know that mechanical and electrical systems have an input, process and output • Know how to program a computer to monitor changes in the environment and control their products	
Food		• Know that all food comes from plants or animals • Know that everyone should eat at least five portions of fruit and vegetables every day	• Know that food has to be farmed, grown elsewhere (e.g. home) or caught • Know that food ingredients should be combined according to their sensory characteristics • Know how to name and sort foods into the five groups in The Eatwell plate	• Know that food is **grown** (such as tomatoes, wheat and potatoes), **reared** (such as pigs, chickens and cattle) and **caught** (such as fish) in the UK, Europe and the wider world. • Know that seasons may affect the food available • Know how food is processed into ingredients that can be eaten or used in cooking • Know that food ingredients can be fresh, pre-cooked and processed • Know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the Eatwell plate • Know that to be active and healthy, food and drink are needed to provide energy for the body		• Know that seasons may affect the food available • Know how food is processed into ingredients that can be eaten or used in cooking • Know the environmental impact of food and food miles • Know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health • Know that a recipe can be adapted by adding or substituting one or more ingredients • Know that a recipe can be adapted by adding or substituting one or more ingredients

Vocabulary

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design process	• ideas, make	• design, make, evaluate, user, ideas, product, function, features,	• purpose, design criteria, function, suitable	• prototype, innovative, appealing, design brief, research, evaluate, ideas, constraints, investigate • model, annotated sketch, functional, aesthetics, function,		• functionality, authentic, user, market research • annotated sketches, exploded diagrams	
Mechanisms		• slider, lever, pivot, slot, bridge/guide • card, masking tape, paper fastener, join	**Wheels and axels:** • vehicle, wheel, axle, axle holder, chassis, body, cab • assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism	**Pneumatics**: • components, attaching, tubing, syringe, plunger, split pin, • pneumatic system, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight • linear, rotary, oscillating, reciprocating (motion) **Electrical circuits** • series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip • control, program, system, input device, output device		Cams: • cam, snail cam, off-centre cam, peg cam, pear shaped cam follower, • axle, shaft, crank, handle, housing, framework • rotation, rotary motion, oscillating motion, reciprocating motion • mechanical system, input movement, process, output movement electrical circuits: • series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart
structures			• structure, wall, tower, framework, weak, strong, • base, top, underneath, side, edge, surface, corner, point • thinner, thicker, straight, curved • metal, wood, plastic	• shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity • marking out, scoring, shaping, tabs, adhesives, joining, assemble, • stiff, strong, corrugating, ribbing, laminating		• frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent	
textiles		• thread, pins, needles, staplers, staples, fabric glue, template, pattern pieces, mark out, join, decorate, finish		• fabric, fastening, compartment, zip, button, structure, finishing technique, • strength, weakness, stiffening, templates, • stitch, seam, seam allowance, pattern pieces		• seam, seam allowance, wadding, reinforce, right side, wrong side, hem, • template, pattern pieces • pins, needles, thread, pinking shears, iron transfer paper • mock-up, prototype	
Food			• fruit and vegetable names, names of equipment and utensils • sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard • flesh, skin, seed, pip, core, • slicing, peeling, cutting, squeezing, • healthy diet, ingredients, • arranging,	• name of products, names of equipment, utensils, techniques and ingredients • texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, sensory evaluations • hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet		• ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs • fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality • utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble