Curriculum Map Design Technology

1	Y	E	A	R	В	

Spring: Layered Fruit Dish	
Food 'Preparing fruit and vegetables'	

Links to previous learning

Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell.

Experience of cutting soft fruit and vegetables using appropriate utensils.

Knowledge

I know that I can eat fruit to stay healthy

I know the names of some fruit

I know and understand where a range of fruit comes from e.g. farmed or grown at home.

Key Skills

I can taste and evaluate a range of fruit I can use simple utensils and equipment to e.g. peel, cut, slice,

squeeze, grate and chop safely.

I can select from a range of fruit according to their characteristics e.g. colour, texture and taste.

Vocabulary

range of fresh fruit and vegetables, chopping boards, knives, peelers, graters, juicers, spoons, jugs, plates, bowls, clear plastic cup, aprons,

hand washing and washing-up facilities **Cultural opportunities**

Fair Trade Fortnight

Key values

School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork. British Values: The rule of law. Individual liberty. Mutual respect for

and tolerance of those with different faiths and beliefs and for those without faith. Democracy.

Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness.

Book list & Resources

Eatwell guide 2016 FINAL MAR29 (publishing.service.gov.uk) Healthy eating (3-5 Years) - Food A Fact Of Life

Links to previous learning

Explored moving vehicles through play. Developed some cutting skills.

Knowledge

I know that vehicles have wheels and axels I know that when I push a toy vehicle it moves on its wheels

Key Skills

I can build construction kits with wheels and axels I can explore moving vehicles through play I can use 2Design and make (Purple Mash) Computer-Aided Design to work in 3D to make models and nets of objects e.g. vehicles. I can talk about my design

Vocabulary

Toy vehicles, wheels, axels, straws, net, design

Cultural opportunities TBC

Key values

Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork. **British Values:** The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy. Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness.

Book list & Resources

opic 1	Autumn: Christmas Cards Mechanisms 'Sliders and Leavers'		Spring: Layered Fruit Dish Food 'Preparing fruit and vegetables'	
F	Links to previous Learning		Links to previous Learning	Links to previous

Respectful and Caring. Inspired and Excited to Learn. Teamwork. British Values: The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy.

slider, lever, slot, glue, card, masking tape, paper fastener, join, pull, push,

Autumn: Christmas Cards

Mechanisms 'Sliders and Leavers'

Early experiences of working with paper and card to make simple flaps and

Experience of simple cutting, shaping and joining skills using scissors, glue,

(e.g. pop up books, books with sliders, wheels, levers and flaps that change

I know that some books and everyday products have moving parts

I know and understand that sliders move up and down or side to side

I can explore a range of existing books and everyday products that

I can select and use tools, explaining their choices, to cut, shape and

I can use simple finishing techniques suitable for the product they

I know that a lever is fixed at the end and moved, up and over (around).

Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness.

Book list & Resources

Christmas cards, books with moving parts

MovingPictures (stem.org.uk) (Saved on staff shared)

books and everyday products with levers and slider mechanisms, slider and lever teaching aids, card strips, card rectangles, paper, masking tape, paper fasteners, paper binders, stick glue, PVA glue, finishing materials and media left/right handed scissors, cutting mats, card drills

up, down, straight, curve, forwards and backwards

Year **EYFS**

Cultural opportunities

Links to previous learning

paper fasteners and masking tape.

use simple sliders and levers.

Join paper and card.

are creating.

Vocabulary

hinges.

Knowledge

a picture.

Key Skills

Christmas

Key values

School Values: Happy, Healthy and Secure. Confident and Independent.

Summer: Toy cars Mechanisms 'Wheels and Axels'

School Values: Happy, Healthy and Secure. Confident and

Let's Look at Vehicles - D&T Association (designtechnology.org.uk) Toys - D&T Association (designtechnology.org.uk)

Purple Mash 2Design and Make

Summer: Toy cars Mechanisms 'Wheels and Axels'

is Learning

Early experiences of working with paper and card to make simple flaps and hinges.

Experience of simple cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape.

Knowledge

I know that some books and everyday products have moving parts

(e.g. pop up books, books with sliders, wheels, levers and flaps that change a picture.

I know and understand that different mechanisms produce different types of movement.

I know and can use some technical vocabulary relevant to the project

Key Skills

Designing

I can generate ideas based on simple design criteria and their own experiences, explaining what they could make.

I can develop, model and communicate their ideas through drawings and mock-ups with card and paper.

Making

I can plan by suggesting what to do next.

I can select and use tools, explaining their choices, to cut, shape and Join paper and card.

I can use simple finishing techniques suitable for the product they are creating.

Evaluating

I can explore a range of existing books and everyday products that use simple sliders and levers.

I can evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.

Technical knowledge and understanding

I can explore and use sliders and levers.

I can use technical vocabulary relevant to the project.

Vocabulary

slider, lever, pivot, slot, bridge/glue, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards backwards

Cultural Opportunities

Christmas

Key values

School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork. British Values: The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy.

Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell. Experience of cutting soft fruit and vegetables using appropriate utensils.

Knowledge

I know and understand where a range of fruit comes from e.g. farmed or grown at home.

I know and understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The eatwell plate.

I know and use technical and sensory vocabulary relevant to the project.

Key Skills

Designing

I can design appealing products for a particular user based on simple design criteria.

I can generate initial ideas and design criteria through investigating a variety of fruit and vegetables.

I can communicate these ideas through talk and drawings.

Making

I can use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.

I can select from a range of fruit according to their characteristics e.g. colour, texture and taste to create a chosen product.

Evaluating

I can taste and evaluate a range of fruit to determine the intended user's preferences.

I can evaluate ideas and finished products against design criteria, including intended user and purpose.

Vocabulary

range of fresh fruit and vegetables, chopping boards, knives, peelers, graters, juicers, spoons, jugs, plates, bowls, clear plastic cup, aprons, hand washing and washing-up facilities

Cultural Opportunities

Fairtrade Fortnight

Key values

School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork.

products for Knowledge

holders.

I know the difference between fixed and freely moving axles. I know and use technical vocabulary relevant to the project. I know that I can use Purple Mash 2Design to create a vehicle and other 3D models and shapes. I know how to save and retrieve my work.

Key Skills

Designing ups.

Making

movement and finishing. characteristics. **Evaluating**

axles.

I can evaluate my ideas throughout and my products against original criteria.

CAD Technical Skills

I can use 2Design and make (Purple Mash) Computer-Aided Design to work in 3D to make models and nets of objects e.g. vehicles. I can save and retrieve my work.

Vocabulary

selection of toy vehicles with differently fixed axles, card boxes, card, cotton reels, plastic tubing, dowel, clothes pegs, paper sticks/dowel, paper/plastic straws, card discs, MDF wheels, wooden wheels, single hole punch, card drill, cutting mat, masking tape, PVA glue, paint, thin/thick paint brushes, felt tip pens, decorative paper, double sided sticky fixers, junior hacksaw, vice, left/right handed scissors

Cultural Opportunities TBC

Key values School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork.

Assembled vehicles with moving wheels using construction kits. Explored moving vehicles through play.

Gained some experience of designing, making and evaluating

a specified user and purpose. Developed some cutting, joining and finishing skills with card.

I know about and have explored how to use wheels, axles and axle

I can generate initial ideas and simple design criteria through talking and using own experiences.

I can develop and communicate ideas through drawings and mock-

I can select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow

I can select from and use a range of materials and components such as paper, card, plastic and wood according to their

I can explore and evaluate a range of products with wheels and

	Christian Star Qualities: Love, <mark>Joy</mark> , Peace, <mark>Patience</mark> , <mark>Kindness</mark> , Gentleness, Self-Control, Faithfulness, Goodness.	British Values: The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy.Christian Star Qualities: Love, Joy, Gentleness, Self-Control, Faithfulness, Goodness.	British Values for and tolera those without Christian Star Gentleness, Se
	Book List & Resources Christmas cards, books with moving parts MovingPictures (stem.org.uk) (Saved on staff shared) books and everyday products with levers and slider mechanisms, slider and lever teaching aids, card strips, card rectangles, paper, masking tape, paper fasteners, paper binders, stick glue, PVA glue, finishing materials and media left/right handed scissors, cutting mats, card drills	Book List & Resources Eatwell guide 2016 FINAL MAR29 (publishing.service.gov.uk) Healthy eating (5-7 Years) - Food A Fact Of Life 24 Fantastic Fruit Facts for Kids - Facts Legend YEAR C	Book List & Re Let's Look at V Toys - D&T As Purple Mash 2
	Autumn: Christmas Cards Mechanisms 'Sliders and Leavers' Links to previous Learning I know and understand how simple 3-D textile products are made, using a template to create two identical shapes. I know and understand how to join using different techniques e.g. glue and stapling.	Spring: Layered Fruit Dish Food 'Preparing fruit and vegetables' Links to previous Learning Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell. Experience of cutting soft fruit and vegetables using appropriate utensils. I know where some fruit and vegetables come from I explored characteristics of some vegetables I used some simple utensils and equipment (knife, bowl, peeler) I know the basic principles of a healthy diet	Links to previo Assembled ve Explored movi Gained some of products for a specified use Developed som
	KnowledgeI know that some books and everyday products have moving parts(e.g. pop up books, books with sliders, wheels, levers and flaps that change a picture.I know and understand that different mechanisms produce different types of movement.I know and can use some technical vocabulary relevant to the project.	KnowledgeI know and understand where a range of fruit comes from e.g. farmed or grown at home.I know and understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of <i>The eatwell plate</i> .I know and use technical and sensory vocabulary relevant to the project.	Knowledge I know about a holders. I know the diff I know and us I know that I c other 3D mod I know how to
2 10 10 10	Key Skills Designing I can generate ideas based on simple design criteria and their own experiences, explaining what they could make. I can develop, model and communicate their ideas through drawings and mock-ups with card and paper. Making I can plan by suggesting what to do next. I can select and use tools, explaining their choices, to cut, shape and Join paper and card. I can use simple finishing techniques suitable for the product they are creating. Evaluating I can explore a range of existing books and everyday products that use simple sliders and levers. I can evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.	 Key Skills Designing I can design appealing products for a particular user based on simple design criteria. I can generate initial ideas and design criteria through investigating a variety of fruit and vegetables. I can communicate these ideas through talk and drawings. Making I can use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. I can select from a range of fruit according to their characteristics e.g. colour, texture and taste to create a chosen product. Evaluating I can taste and evaluate a range of fruit to determine the intended user's preferences. I can evaluate ideas and finished products against design criteria, including intended user and purpose. 	Key SkillsDesigningI can generatetalking and usI can develop aups.MakingI can select fromperform practmovement anI can select fromsuch as paper,characteristicsEvaluatingI can evaluateoriginal criteri
			CAD Tec I can use to work

es: The rule of law<mark>. Individual liberty. Mutual respect</mark> rance of those with different faiths and beliefs and for ut faith. <mark>Democracy.</mark>

ar Qualities: Love, Joy, Peace, <mark>Patience</mark>, Kindness, <mark>Self-Control</mark>, Faithfulness, Goodness.

Resources

t Vehicles - D&T Association (designtechnology.org.uk) Association (designtechnology.org.uk) h 2Design and Make

Summer: Toy cars Mechanisms 'Wheels and Axels'

vious Learning

vehicles with moving wheels using construction kits. oving vehicles through play.

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ser and purpose.

some cutting, joining and finishing skills with card.

It and have explored how to use wheels, axles and axle

lifference between fixed and freely moving axles. use technical vocabulary relevant to the project. I can use Purple Mash 2Design to create a vehicle and odels and shapes.

to save and retrieve my work.

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p and communicate ideas through drawings and mock-

from and use a range of tools and equipment to actical tasks such as cutting and joining to allow and finishing.

from and use a range of materials and components er, card, plastic and wood according to their ics.

e and evaluate a range of products with wheels and

te my ideas throughout and my products against eria.

al Skills

esign and make (Purple Mash) Computer-Aided Design D to make models and nets of objects e.g. vehicles.

		I can explore and use sliders and levers.			I can save and r
		I can use technical vocabulary relevant to the project.			
		Vocabulary		Vocabulary	Vocabulary
		slider, lever, pivot, slot, bridge/glue, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards backwards design, make, evaluate, user, purpose, ideas, design criteria, product,		range of fresh fruit and vegetables, chopping boards, knives, peelers, graters, juicers, spoons, jugs, plates, bowls, clear plastic cup, aprons, hand washing and washing-up facilities	selection of toy card, cotton ree sticks/dowel, p wooden wheels
		function			tape, PVA glue, decorative pape left/right hande
		Cultural Opportunities		Cultural Opportunities	Cultural Oppor
		Christmas		Fairtrade Fortnight	
		Key values		Key values	Key values
		 School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork. British Values: The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy. Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness. Book List & Resources 		 School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork. British Values: The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy. Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness. 	School Values: Independent. R Teamwork. British Values: for and tolerand those without f Christian Star C Gentleness, Sel
				Book List & Resources	Book List & Res
		Christmas cards, books with moving parts <u>MovingPictures (stem.org.uk)</u> (Saved on staff shared) books and everyday products with levers and slider mechanisms, slider and lever teaching aids, card strips, card rectangles, paper, masking tape, paper fasteners, paper binders, stick glue, PVA glue, finishing materials and media left/right handed scissors, cutting mats, card drills		Eatwell guide 2016 FINAL MAR29 (publishing.service.gov.uk) Healthy eating (5-7 Years) - Food A Fact Of Life 24 Fantastic Fruit Facts for Kids - Facts Legend	Let's Look at Ve Toys - D&T Asso Purple Mash 21
				YEAR C	
				TEAR C	
		Autumn: Mechanical Systems 'Pulleys or Gears'		Spring Food 'Healthy and Varied Diet'	Electrica
		Autumn: Mechanical Systems 'Pulleys or Gears' Links to previous Learning		Spring	Electrica Links to previou
		Mechanical Systems 'Pulleys or Gears'		Spring Food 'Healthy and Varied Diet'	· · · · · · · · · · · · · · · · · · ·
		Mechanical Systems 'Pulleys or Gears' Links to previous Learning Experience of axles, axle holders and wheels that are fixed or free moving, Experience of cutting and joining techniques with a range of materials including card, plastic and wood An understanding of strengthening and stiffening structures is also		Spring Food 'Healthy and Varied Diet' Links to previous Learning I know and understand where a range of fruit and vegetables come from, e.g. farmed or grown at home. I know and understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of <i>The eatwell plate</i> . I can use simple utensils and equipment to e.g. peel, cut, slice,	Links to previou (Taught after c Constructed a s switches and bu Cut and joined card, plastic, re Constructed a s
3	Topic	Mechanical Systems 'Pulleys or Gears' Links to previous Learning Experience of axles, axle holders and wheels that are fixed or free moving, Experience of cutting and joining techniques with a range of materials including card, plastic and wood An understanding of strengthening and stiffening structures is also required for good outcomes.	Topic	Spring Food 'Healthy and Varied Diet'Links to previous LearningI know and understand where a range of fruit and vegetables come from, e.g. farmed or grown at home.I know and understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of <i>The eatwell plate</i> .I can use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.	Links to previou (Taught after c Constructed a s switches and bu Cut and joined card, plastic, re Constructed a s switches and bu

Key Skills

Designing

I know and can use technical vocabulary relevant to the project.

I know how to safely work with tools and equipment.

Key Skills Designing

I can generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.

I can develop a simple design specification to guide their thinking.

I can generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose.

Designing I can gather information about users' needs and wants, and develop design criteria to inform the design of products that are fit

d retrieve my work.

oy vehicles with differently fixed axles, card boxes, reels, plastic tubing, dowel, clothes pegs, paper paper/plastic straws, card discs, MDF wheels, els, single hole punch, card drill, cutting mat, masking ne, paint, thin/thick paint brushes, felt tip pens, aper, double sided sticky fixers, junior hacksaw, vice, ided scissors

ortunities

s: Happy, Healthy and Secure. Confident and

Respectful and Caring. Inspired and Excited to Learn.

s: The rule of law. Individual liberty. Mutual respect ance of those with different faiths and beliefs and for t faith. Democracy.

r **Qualities:** Love, Joy, Peace, <mark>Patience</mark>, Kindness, elf-Control, Faithfulness, Goodness.

lesources

Vehicles - D&T Association (designtechnology.org.uk) ssociation (designtechnology.org.uk)

2Design and Make

Summer Night Light ical Systems 'simple programming and control'

ious Learning

Key Skills

for purpose.

r covered in science during summer 1)

a simple series electrical circuit, using bulbs, batteries, buzzers.

d a variety of construction materials, such as wood, reclaimed materials and glue.

a simple series electrical circuit, using bulbs, batteries, buzzers.

rstand and use computing to program and control taining electrical systems, such as series circuits switches, bulbs and buzzers.

se technical vocabulary relevant to the project.

I can develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. Making

I can produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. I can select from and use a range of tools and equipment to make products that that are accurately assembled and well finished.

I can work within the constraints of time, resources and cost.

Evaluating

I can compare the final product to the original design specification. I can test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. I can consider the views of others to improve their work.

I can investigate famous manufacturing and engineering companies relevant to the project.

Technical knowledge and understanding

I can understand that mechanical and electrical systems have an input, process and an output.

I can understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.

Vocabulary

Pulley, Drive belt, Gear, Rotation, Spindle, Driver, Follower, Ratio, Transmit, Axle, Motor, Circuit, Switch, Circuit diagram, Microcontroller Annotated drawings, Exploded diagrams, Mechanical system, Electrical system, Input, Process, Output, Design decisions, Functionality, Innovation, Authentic, User, Purpose, Design specification, Design brief

Cultural Opportunities

Key values

School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork. British Values: The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy.

Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness.

Book List & Resources

videos, photographs and everyday products or toys with pulleys or gears batteries, battery holders, wires, crocodile clips, motors, switches, aluminium foil, paper fasteners, paper clips, card, motors, motor stands, dowel, paper sticks, consumable and construction kit pulleys or gears of different sizes, elastic bands, junior hacksaws, glass paper, G-clamps, bench hooks, hand drill, automatic wire strippers, PVA glue, sticky pads, masking tape, dowel, double-sided tape, card triangles, square section wood, card, corrugated plastic, finishing media

I can use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.

Making

I can plan the main stages of a recipe, listing ingredients, utensils and equipment.

I can select and use appropriate utensils and equipment to prepare and combine ingredients.

I can select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.

Evaluating

I can carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. I can evaluate the ongoing work and the final product with reference to the design criteria and the views of others.

Vocabulary

information about foods from around the world, basic recipes range of relevant example foods to taste and evaluate suitable equipment and utensils such as: knives, chopping board, weighing scales, measuring jugs, bowls, baking trays, spoons (various sizes), parchment paper, plastic film

Cultural Opportunities

Residential

Key values

School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork.

British Values: The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy.

Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness.

Book List & Resources

Dips and dippers YR3 - D&T Association (designtechnology.org.uk) Super Salads - D&T Association (designtechnology.org.uk) Soups - Celebrating culture and seasonality - D&T Association (designtechnology.org.uk) Free education resources for teaching young people aged 3-16 years about where food comes from, cooking and healthy eating, and teacher training. - Food A Fact Of Life The Eatwell Guide - GOV.UK (www.gov.uk)

I can generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, crosssectional and exploded diagrams. Making

Evaluating

I can investigate and analyse a range of existing battery-powered products, including pre-programmed and programmable products. I can evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.

Vocabulary

series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, light emitting diode (LED), bulb, bulb holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, process user, purpose, function, prototype, design criteria, innovative, appealing, design brief

Key values Teamwork.

Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness.

Book List & Resources

Torches, Lamps and Lanterns - D&T Association (designtechnology.org.uk) Developing handmade switches - D&T Association (designtechnology.org.uk)

Night lights (links to Literacy) YR3 - D&T Association (designtechnology.org.uk)

Hand-made switches helpsheet - D&T Association (designtechnology.org.uk)

YEAR C						
		Autumn: Mechanical Systems 'Pulleys or Gears'		Spring		
	<u>.</u>					
4	lop	Links to previous Learning	<u> </u>	Links to previous Learning		Links to previous
		Experience of axles, axle holders and wheels that are fixed or free moving,		I know and understand where a range of fruit and vegetables come		(Taught after co
				from, e.g. farmed or grown at home.		

I can order the main stages of making.

- I can select from and use tools and equipment to cut, shape, join and finish with some accuracy.
- I can connect simple electrical components and a battery in a series circuit to achieve a functional outcome.
- I can program a standalone control box, microcontroller or interface box to enhance the way the product works.

Cultural Opportunities

Link to science (taught after being covered in science)

School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn.

British Values: The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy.

Summer

us Learning

overed in science during summer 1)

Experience of cutting and joining techniques with a range of materials including card, plastic and wood

An understanding of strengthening and stiffening structures A basic understanding of electrical circuits, simple switches and components.

Knowledge

I know that mechanisms are devices that we create to help us. I know that most mechanisms are designed to change smaller input forces and motion into greater output force and motion. I know what a pulley is and I understand how it works. I know some uses of pulleys.

I know what a gear is and I understand how it works.

I know some uses of gears.

I know and can use technical vocabulary relevant to the project.

I know how to safely work with tools and equipment.

Key Skills

Designing

I can generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.

I can develop a simple design specification to guide their thinking. I can develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.

Making

I can produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. I can select from and use a range of tools and equipment to make products that that are accurately assembled and well finished.

I can work within the constraints of time, resources and cost.

Evaluating

I can compare the final product to the original design specification. I can test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.

I can consider the views of others to improve their work.

I can investigate famous manufacturing and engineering companies relevant to the project.

Technical knowledge and understanding

I can understand that mechanical and electrical systems have an input, process and an output.

I can understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.

Vocabulary

Pulley, Drive belt, Gear, Rotation, Spindle, Driver, Follower, Ratio, Transmit, Axle, Motor, Circuit, Switch, Circuit diagram, Microcontroller Annotated drawings, Exploded diagrams, Mechanical system, Electrical system, Input, Process, Output, Design decisions, Functionality, Innovation, Authentic, User, Purpose, Design specification, Design brief

Cultural Opportunities

TBC

Key values

School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork.

I know and understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The eatwell plate.

I can use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.

Knowledge

I know how to use appropriate equipment and utensils to prepare and combine food.

I know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. I know and use relevant technical and sensory vocabulary appropriately.

Key Skills

Designing

I can generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. I can use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.

Making

I can plan the main stages of a recipe, listing ingredients, utensils and equipment.

I can select and use appropriate utensils and equipment to prepare and combine ingredients.

I can select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.

Evaluating

I can carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. I can evaluate the ongoing work and the final product with reference to the design criteria and the views of others.

Vocabulary

information about foods from around the world, basic recipes range of relevant example foods to taste and evaluate suitable equipment and utensils such as: knives, chopping board, weighing scales, measuring jugs, bowls, baking trays, spoons – various sizes, parchment paper, plastic film

Cultural Opportunities

Residential

Key values

School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork.

switches and buzzers. switches and buzzers. Knowledge

Key Skills

Designing for purpose. Making

Evaluating

their work.

Vocabulary

Cultural Opportunities

Link to science (taught after being covered in science)

Key values

Teamwork.

- Constructed a simple series electrical circuit, using bulbs, batteries,
- Cut and joined a variety of construction materials, such as wood, card, plastic, reclaimed materials and glue.
- Constructed a simple series electrical circuit, using bulbs, batteries,
- I know, understand and use computing to program and control products containing electrical systems, such as series circuits incorporating switches, bulbs and buzzers.
- I know and use technical vocabulary relevant to the project.

I can gather information about users' needs and wants, and develop design criteria to inform the design of products that are fit

I can generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, crosssectional and exploded diagrams.

- I can order the main stages of making.
- I can select from and use tools and equipment to cut, shape, join and finish with some accuracy.
- I can connect simple electrical components and a battery in a series circuit to achieve a functional outcome.
- I can program a standalone control box, microcontroller or interface box to enhance the way the product works.

I can investigate and analyse a range of existing battery-powered products, including pre-programmed and programmable products. I can evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in

series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, light emitting diode (LED), bulb, bulb holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, process user, purpose, function, prototype, design criteria, innovative, appealing, design brief

School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn.

		British Values: The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy. Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness.	 British Values: The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy. Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness. Book List & Resources 			British Values: The for and tolerance those without fai Christian Star Que Gentleness, Self-
		Book List & Resources				Book List & Reso
		videos, photographs and everyday products or toys with pulleys or gears batteries, battery holders, wires, crocodile clips, motors, switches, aluminium foil, paper fasteners, paper clips, card, motors, motor stands, dowel, paper sticks consumable and construction kit pulleys or gears of different sizes, elastic bands junior hacksaws, glass paper, G-clamps, bench hooks, hand drill, automatic wire strippers PVA glue, sticky pads, masking tape, dowel, double-sided tape, card triangles, square section wood, card, corrugated plastic, finishing media	Dips an Super S Soups - (design Free ed about v teacher	d dippers YR3 - D&T Association (designtechnology.org.uk) Galads - D&T Association (designtechnology.org.uk) Celebrating culture and seasonality - D&T Association technology.org.uk) lucation resources for teaching young people aged 3-16 years where food comes from, cooking and healthy eating, and r training Food A Fact Of Life twell Guide - GOV.UK (www.gov.uk)		Torches, Lamps a (designtechnolog Developing hand (designtechnolog Night lights (links (designtechnolog Hand-made swite (designtechnolog
				YEAR C		
		Autumn: Mechanical Systems 'Pulleys or Gears'		Spring		
5		Links to previous Learning Experience of axles, axle holders and wheels that are fixed or free moving, Experience of cutting and joining techniques with a range of materials including card, plastic and wood An understanding of strengthening and stiffening structures A basic understanding of electrical circuits, simple switches and components.	I know from, e I know varied o part of I can us	ow and understand where a range of fruit and vegetables come m, e.g. farmed or grown at home. ow and understand and use basic principles of a healthy and ied diet to prepare dishes, including how fruit and vegetables are t of <i>The eatwell plate</i> . n use simple utensils and equipment to e.g. peel, cut, slice, eeze, grate and chop safely.		Links to previous (Taught after con Constructed a sin switches and buz Cut and joined a card, plastic, recl Constructed a sin switches and buz
	Topic	KnowledgeI know that mechanisms are devices that we create to help us.I know that most mechanisms are designed to change smaller inputforces and motion into greater output force and motion.I know what a pulley is and I understand how it works.I know some uses of pulleys.I know what a gear is and I understand how it works.I know some uses of gears.I know and can use technical vocabulary relevant to the project.	combin I know for thei	how to use appropriate equipment and utensils to prepare and e food. about a range of fresh and processed ingredients appropriate r product, and whether they are grown, reared or caught. and use relevant technical and sensory vocabulary	p Topic	Knowledge I know, understan products contain incorporating swi I know and use te
		I know how to safely work with tools and equipment. Skills	Skills			Skills
		DesigningI can generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.I can develop a simple design specification to guide their thinking.I can develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.MakingI can produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.I can select from and use a range of tools and equipment to make products that that are accurately assembled and well finished.I can compare the final product to the original design specification.I can test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.	Designi I can ge adults t and arc I can us commu and cor Making I can pl equipm I can se and cor I can se	enerate and clarify ideas through discussion with peers and to develop design criteria including appearance, taste, texture oma for an appealing product for a particular user and purpose. The annotated sketches and appropriate information and unication technology, such as web-based recipes, to develop mmunicate ideas. The main stages of a recipe, listing ingredients, utensils and tent. The main stages of a recipe, listing ingredients, utensils and tent. The and use appropriate utensils and equipment to prepare mbine ingredients. The arange of ingredients to make appropriate food ts, thinking about sensory characteristics.		Designing I can gather infor develop design cu for purpose. I can generate, du through discussion sectional and exp <u>Making</u> I can order the m I can select from and finish with so I can connect sim series circuit to a I can program a s interface box to e Evaluating

s: The rule of law. Individual liberty. <mark>Mutual respect</mark> ance of those with different faiths and beliefs and for t faith. Democracy. r **Qualities:** Love, Joy, Peace, Patience, Kindness,

elf-Control, Faithfulness, Goodness.

lesources

ps and Lanterns - D&T Association ology.org.uk) andmade switches - D&T Association ology.org.uk)

inks to Literacy) YR3 - D&T Association ology.org.uk)

witches helpsheet - D&T Association ology.org.uk)

Summer

ious Learning

covered in science during summer 1)

a simple series electrical circuit, using bulbs, batteries, buzzers.

d a variety of construction materials, such as wood, reclaimed materials and glue.

a simple series electrical circuit, using bulbs, batteries, buzzers.

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om and use tools and equipment to cut, shape, join th some accuracy.

simple electrical components and a battery in a to achieve a functional outcome.

n a standalone control box, microcontroller or

to enhance the way the product works.

I can consider the views of others to improve their work. I can investigate famous manufacturing and engineering companies relevant to the project.

Technical knowledge and understanding

I can understand that mechanical and electrical systems have an input, process and an output.

I can understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.

Vocabulary

Pulley, Drive belt, Gear, Rotation, Spindle, Driver, Follower, Ratio, Transmit, Axle, Motor, Circuit, Switch, Circuit diagram, Microcontroller Annotated drawings, Exploded diagrams, Mechanical system, Electrical system, Input, Process, Output, Design decisions, Functionality, Innovation, Authentic, User, Purpose, Design specification, Design brief

Cultural Opportunities

TBC

Key values

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Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness.

Book List & Resources

videos, photographs and everyday products or toys with pulleys or gears batteries, battery holders, wires, crocodile clips, motors, switches,

aluminium foil, paper fasteners, paper clips, card, motors, motor stands, dowel, paper sticks

consumable and construction kit pulleys or gears of different sizes, elastic bands

junior hacksaws, glass paper, G-clamps, bench hooks, hand drill, automatic wire strippers

PVA glue, sticky pads, masking tape, dowel, double-sided tape, card triangles, square section wood, card, corrugated plastic, finishing media

I can carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. I can evaluate the ongoing work and the final product with reference to the design criteria and the views of others.

Vocabulary

information about foods from around the world, basic recipes range of relevant example foods to taste and evaluate suitable equipment and utensils such as: knives, chopping board, weighing scales, measuring jugs, bowls, baking trays, spoons – various sizes, parchment paper, plastic film

Cultural Opportunities

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Book List & Resources

Dips and dippers YR3 - D&T Association (designtechnology.org.uk) Super Salads - D&T Association (designtechnology.org.uk) Soups - Celebrating culture and seasonality - D&T Association (designtechnology.org.uk) Free education resources for teaching young people aged 3-16 years about where food comes from, cooking and healthy eating, and teacher training. - Food A Fact Of Life

The Eatwell Guide - GOV.UK (www.gov.uk)

I can investigate and analyse a range of existing battery-powered products, including pre-programmed and programmable products. I can evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.

Vocabulary

series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, light emitting diode (LED), bulb, bulb holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, process user, purpose, function, prototype, design criteria, innovative, appealing, design brief **Cultural Opportunities**

Key values

Teamwork.

Book List & Resources

Torches, Lamps and Lanterns - D&T Association (designtechnology.org.uk) Developing handmade switches - D&T Association (designtechnology.org.uk)

YEAR B

Link to science (taught after being covered in science)

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Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness.

Night lights (links to Literacy) YR3 - D&T Association (designtechnology.org.uk)

Hand-made switches helpsheet - D&T Association (designtechnology.org.uk)