One Excellence Multi Academy Trust
DT Curriculum

EYFS Long Term Plan – Cycle A and B

EYFS - Aims
• To develop children's design and technical skill ability, in order to create for a purpose. • To provide frequent opportunities for children to see and participate in design and technology.
EYFS – Content
Pupils should be taught: • Use a range of materials, tools and techniques, experimenting with design, texture, form and function. • To share their creations, explaining the process they have used. • Create and make use of props and materials.

Each element of design and technology below will be explored across all terms through provision areas. In addition to this one specific element will be explored each term in greater detail. Opportunity across the year will be given for children to experience and talk about their creations using the following techniques.		
Ingredients. (Autumn 1) • Use a variety of ingredients for baking. • Collecting apples and brambles for crumble. • Bread making. Little Red Hen • Chopping vegetables and making soup for Harvest soup share. **Cooking:** Chop, cut, peel, mash, sieve, stir, bake, roll, kneed.	**Joining materials. (Spring 1)** • Exploring a range of ways to join materials. • Chinese New Year, dragon props and puppets. • Evaluate strength and durability. • Joining heavy and light materials. **Joining:** Cut, stick, join, attach, connect, glue, tie.	**Structures. (Summer 1)** • Test a range of materials for strength. • Building a strong bridge, and evaluate. Billy Goats Gruff • Den building, outdoors. • Making bird feeders and shelters. **Building:** Strong, heavy, solid, cover, shelter, weather proof
Textiles. (Autumn 2) • Using a variety of textiles to make Nativity costumes or props. • Natural/ man made textiles. • Sewing and stitching fabric and felt. • Weaving and plaiting fabrics. **Textiles:** Scissors, needles, thread, buttons, stich, sew, tie.	**Mechanisms. (Spring 2)** • Experimenting with split pins to create moving objects. • Moving chicks. Chicken Licken • Wind-up toys with elastic bands. (Boats, link to testing materials, waterproof) • Making Mother's Day and Easter cards. • Moving pictures. **Mechanisms:** Slide, fold, pull, twist, tight, press, pin.	**Woodwork (Summer 2)** • Balsa wood and panel pins, to make wind chimes. • Range of suitable materials to create sound. • Hammering and protective equipment. **Woodwork:** Hit, chop, saw, hold, tie, glue, pin

One Excellence Multi Academy Trust
DT Curriculum

KS1 Design and Technology Long Term Plan

KS1 - Aims
• The national curriculum for design and technology aims to ensure that all pupils: • develop the creative, technical and practical expertise needed to perform everyday • tasks confidently and to participate successfully in an increasingly technological world • build and apply a repertoire of knowledge, understanding and skills in order to design • and make high-quality prototypes and products for a wide range of users • critique, evaluate and test their ideas and products and the work of others
KS1 – Content
Pupils should be taught: 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 [for example, cutting, shaping, joining and finishing] • select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics Evaluate • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria Technical knowledge • build structures, exploring how they can be made stronger, stiffer and more stable • explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

One Excellence Multi Academy Trust
DT Curriculum

Design and Technology LTP Year 1/2 – Cycle A

Autumn	Spring	Summer
Mechanisms – Making cards with levers (Y2) and sliders (Y1). • Design • Make • Test • Evaluate	**Textiles – Puppets** • Design • Make • Test • Evaluate	**Structures – Bridges – beam bridge** • Design • Make • Test • Evaluate
Key Vocabulary	**Key Vocabulary**	**Key Vocabulary**
Design, Plan, test, pin, stick, join, connect, materials, tools, equipment, function, lever, slider, fold, template, design criteria, decorate, split pin, product.	*Appearance, design, Equipment, Evaluation, texture, textile, materials, function, proportion, felt, sew, running stitch, hot glue gun, decoration, template, product.*	*Brittle, Design, diagram, structure, engineering, flexible, strong, strength, via duct, pedestrian bridge, beam bridge, crossing, mock up, design criteria, product.*
Suggested Websites	**Suggested Websites**	**Suggested Websites**
https://www.redtedart.com/20-card-making-ideas-for-kids/ https://www.science-sparks.com/mechanisms-pop-up-cards/ https://www.stem.org.uk/resources/collection/2892/designing-key-stage-one	https://artfulparent.com/hand-puppets-for-kids/ https://www.kidspot.com.au/things-to-do/activity-articles/5-fun-puppets-to-make/news-story/829c3a6fd8d81aad4449bc335d8c140e https://www.accessart.org.uk/fingerpuppets/	https://easyscienceforkids.com/all-about-bridges/ https://kids.kiddle.co/Bridge https://www.youtube.com/watch?v=oVOnRPefcno (What makes bridges so strong?) https://kids.britannica.com/kids/article/bridge/352881 https://www.stem.org.uk/resources/community/collection/285271/structures https://www.twinkl.co.uk/resource/t2-d-068-structures-lesson-teaching-pack

Aims and focused content:

- Design
- Make
- Test
- Evaluate
- Technical Knowledge – mechanisms, improving structures
- Equipment – making appropriate selections
- Develop key skills – cutting, shaping, joining and finishing
- Use of ICT

One Excellence Multi Academy Trust
DT Curriculum

Design and Technology LTP Year 1/2 – Cycle B

Autumn	Spring	Summer
Mechanisms – Vehicles • Design • Make • Test • Evaluate	**Structures - Towers** • Design • Make • Test • Evaluate	**Ingredients – Food / Picnic food.** • Food and nutrition • Make
Key Vocabulary	**Key Vocabulary**	**Key Vocabulary**
Template, measure, mark out, assemble, build, combine, evaluate, design, research, process, design criteria, wheel, axel, axel holder, mechanism, chassis, body, cab.	*Materials, free standing structure, construct, strength, strong, base, wall, brick, cubes, triangles, structure, framework.*	*Equipment, cutting, heat source, prepare, slice, weigh, ingredients, hygiene, picnic food, healthy foods, spread, mix, combine, peel, cut, core, dairy, vegetables, fruits, meat, water, 'five a day', grate.*
Suggested Websites	**Suggested Websites**	**Suggested Websites**
https://www.teachitprimary.co.uk/resources/y3/designing-and-making/how-to-make-a-simple-moving-vehicle/19556 https://www.twinkl.co.uk/resource/ks1-making-a-toy-car-instructions-t-d-69 https://www.stem.org.uk/resources/community/collection/279027/get-moving	http://www.sciencekids.co.nz/sciencefacts/engineering/eiffeltower.html https://www.stem.org.uk/resources/elibrary/resource/34191/spaghetti-towers https://www.pinterest.co.uk/pin/25684660352676026/ https://www.twinkl.co.uk/resource/ni-t-16-tallest-tower-challenge-powerpoint https://www.planbee.com/design-technology/dt-programmes-of-study/structures	https://www.kids-cooking-activities.com/ https://www.deliciousmagazine.co.uk/kids-cookery-classes/

Aims and focused content:

- Design
- Make
- Test
- Evaluate
- Technical Knowledge – mechanisms, improving structures
- Equipment – making appropriate selections
- Develop key skills – cutting, shaping, joining and finishing
- Use of ICT

One Excellence Multi Academy Trust
DT Curriculum

Design and Technology Long Term Plan KS2

KS2 - Aims
• The national curriculum for design and technology aims to ensure that all pupils: • develop the creative, technical and practical expertise needed to perform everyday • tasks confidently and to participate successfully in an increasingly technological world • build and apply a repertoire of knowledge, understanding and skills in order to design • and make high-quality prototypes and products for a wide range of users • critique, evaluate and test their ideas and products and the work of others
KS2 – Content
Pupils should be taught: 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 • 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 • understand how key events and individuals in design and technology have helped shape the world Technical knowledge • apply their understanding of how to strengthen, stiffen and reinforce more complex structures • understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • apply their understanding of computing to program, monitor and control their products

One Excellence Multi Academy Trust
DT Curriculum

Design and Technology LTP Year 3/4 – Cycle A

Autumn	Spring	Summer
Materials – Textiles – Design and make a pillow case. • Design • Make • Test • Evaluate	**Structures – Towers** • Design • Make • Test • Evaluate	**Mechanisms – Lighthouse – adding circuit and pully (Linked to Lighthouse Keepers lunch)** • Design • Make • Test • Evaluate
Key Vocabulary	**Key Vocabulary**	**Key Vocabulary**
Initial design, stitching, sketch, adhesive, design brief, design process, modify, annotate, prototype, pattern piece, basting stitch, running stitch, pillowcase, textile, cotton, needle, thread, technique.	*Design brief, Design process, practicality, annotations, prototype, framework, construction kit, hardwood, style, stability, cross-section, product, assemble, square based pyramid, free standing, narrow, wide, tetrahedron, evaluate, test.*	*Electric circuit, crocodile clip, wire, pulley, Design brief, design process, mechanism, specification, cross-sectional diagram, finishing techniques, electrical circuit, battery, conductor, insulator, crocodile clip, light bulb, switch.*
Suggested Websites	**Suggested Websites**	**Suggested Websites**
https://www.twinkl.co.uk/resources/keystage2-ks2/ks2-subjects/ks2-design-and-technology	http://www.sciencekids.co.nz/sciencefacts/engineering/eiffeltower.html https://www.stem.org.uk/resources/elibrary/resource/34191/spaghetti-towers https://www.pinterest.co.uk/pin/25684660352676026/ https://www.stem.org.uk/resources/community/collection/285271/structures https://www.stem.org.uk/resources/community/collection https://www.twinkl.co.uk/resource/t2-d-068-structures-lesson-teaching-pack	https://wiki.kidzsearch.com/wiki/Lighthouse https://www.sciencekids.co.nz/gamesactivities/electricitycircuits.html https://www.theschoolrun.com/what-is-electricity https://www.dkfindout.com/uk/science/simple-machines/pulleys/ https://www.youtube.com/watch?v=LiBcur1aqcg

Aims and focused content:

- **Design** – Research functionality, appeal and purpose. Communicate ideas and develop prototypes using CAD.
- **Make** – Select materials, recognising functional and aesthetic properties.
- **Test**
- **Evaluate –** analyse current product and own ideas against a design criterion.
- Technical Knowledge – mechanisms, improving complex structures, use mechanical systems i.e. gears, pulleys, cams levers and linkages
- Use electrical systems
- Equipment – making appropriate selections
- Develop key skills – cutting, shaping, joining and finishing
- Use of ICT
- Recognise how events and individuals have influenced the word.

One Excellence Multi Academy Trust
DT Curriculum

Design and Technology LTP Year 3/4 – Cycle B

Autumn	Spring	Summer
Mechanisms – Vehicles (pneumatic – balloon powered) • Design • Make • Test • Evaluate	**Structures – Bridges Truss Bridge. Strength and size** • Design • Make • Test • Evaluate	**Ingredients – Food / Pizza and cakes** • Principles of a varied healthy diet • Research seasonality and where food comes from • Prepare • Make
Key Vocabulary	**Key Vocabulary**	**Key Vocabulary**
Design brief, design process, mechanism, specification, scale, axles, chassis, cross-sectional diagram, vehicle features, prototypes, accuracy, finishing techniques, motion, pneumatic	*structure, tension, strong, strengthen, stiffen, reinforce, engineer, design brief, performance, beam bridge, truss bridge, cross- sectional diagram, sketching, prototype, product.*	*Market research, method, preparation, baking sheet, chopping, balanced diet, grill, bake, taste test, chopping board, allergy, peel, cut, slice, knead, appealing, hygiene, pre-cooked, fresh, processed, energy, 'The Eat Well Plate'.*
Suggested Websites	**Suggested Websites**	**Suggested Websites**
https://www.science-sparks.com/easy-balloon-car/ https://www.scienceworld.ca/resource/balloon-powered-car/ https://www.teachitprimary.co.uk/design-technology https://www.stem.org.uk/resources/collection https://www.tes.com/teaching-resource/ks2-d-and-t-activity-design-and-build-junk-model-cars-bloodhound-lsr-sustainability-activity-week-11989266 https://www.tes.com/teaching-resource/making-a-moving-vehicle-6016536 https://www.stem.org.uk/resources/collection/2897/designing-key-stage-two https://www.tts-group.co.uk/blog/2016/11/02/pulley-motorised-vehicle.html https://www.bbc.co.uk/teach/class-clips-video/science-design-and-technology-ks2-experimenting-with-balloon-powered-cars/zjsygwx Consider a trip to organising a trip to Nissan. Invite a parent/visitor into school to speak about designing and building cars.	https://www.bbc.co.uk/teach/class-clips-video/drawbridge/zft7nrd https://www.stem.org.uk/resources/elibrary/resource/35888/bridge-building https://www.pinterest.co.uk/bluejay362/kids-bridge-design/ https://easyscienceforkids.com/all-about-bridges/ https://kids.kiddle.co/Bridge https://www.youtube.com/watch?v=oVOnRPefcno (What makes bridges so strong?) https://kids.britannica.com/kids/article/bridge/352881 https://www.tes.com/teaching-resource/bridges-6016590 https://www.stem.org.uk/resources/elibrary/resource/25329/bridges-and-structures Consider organising a trip to the Baltic- free workshop on bridges with viewing galleries https://baltic.art/learn/baltic-bridges Or Visit the Tees Transporter Bridge	https://www.bbc.co.uk/bitesize/topics http://www.primaryresources.co.uk/dandt https://www.theschoolrun.com/cooking-and-nutrition-in-primary-schools

One Excellence Multi Academy Trust
DT Curriculum

Design and Technology LTP Year 5/6 – Cycle A

Autumn	Spring	Summer
Ingredients – Food / Celebration cakes. • Principles of a varied healthy diet • Research seasonality and where food comes from • Prepare • Make	**Mechanisms – Fairground (incl. electrical component)** • Design • Make • Test • Evaluate	**Structures – Bridges (strength and aesthetics) Draw bridge** • Design • Make • Test • Evaluate
Key Vocabulary	**Key Vocabulary**	**Key Vocabulary**
Icing, decorate, fold, whisk, ingredients, exploded diagram, cross-sectional diagram, bake, assemble, temperature, vessel.	*Exploded diagram, cross-sectional diagram, function, hydraulics, gears, belt, motor, motion, cams, rotate, linear, linkages, accelerometer, product.*	*Member, innovative, appealing, stability, design process, , disassembly, dismantle, arch, truss, exploded diagram, prototype, cross-sectional diagram, assemble, draw bridge, pulley, aesthetics, evaluate, test, strengthen, stiffen, reinforce.*
Suggested Websites	**Suggested Websites**	**Suggested Websites**
https://www.twinkl.co.uk/resource/tp2-d-063-planit-dt-uks2-global-food-unit-pack https://www.theschoolrun.com/cooking-and-nutrition-in-primary-schools https://www.stem.org.uk/resources/collection/2900/working-textiles-and-food-key-stages-one-and-two	https://www.tes.com/teaching-resource/making-a-board-game-6016594 https://www.stem.org.uk/elibrary/resource/25487 https://www.bbc.co.uk/bitesize/topics/zj44jxs https://www.twinkl.co.uk/resource/t2-d-072-moving-toys-cam-mechanisms-lesson-teaching-pack	https://www.stem.org.uk/resources/elibrary/resource/35888/bridge-building https://www.pinterest.co.uk/bluejay362/kids-bridge-design/ https://easyscienceforkids.com/all-about-bridges/ https://kids.kiddle.co/Bridge https://www.youtube.com/watch?v=oVOnRPefcno (What makes bridges so strong?) https://kids.britannica.com/kids/article/bridge/352881 https://www.tes.com/teaching-resource/bridges-6016590 https://www.stem.org.uk/resources/elibrary/resource/25329/bridges-and-structures https://www.stem.org.uk/resources/elibrary/resource/25329/bridges-and-structures

Aims and focused content:

- **Design** – Research functionality, appeal and purpose. Communicate ideas and develop prototypes using CAD.
- **Make** – Select materials, recognising functional and aesthetic properties.
- **Test**
- **Evaluate –** analyse current product and own ideas against a design criteria.
- Technical Knowledge – mechanisms, improving complex structures, use mechanical systems i.e. gears, pulleys, cams levers and linkages
- Use electrical systems
- Equipment – making appropriate selections
- Develop key skills – cutting, shaping, joining and finishing
- Use of ICT
- Recognise how events and individuals have influenced the word.

One Excellence Multi Academy Trust
DT Curriculum

Design and Technology LTP Year 5/6 – Cycle B

Autumn	Spring	Summer
Mechanisms – Wind Turbines • Design • Make • Test • Evaluate	**Structures – Bird house / Bug hotels** • Design • Make • Test • Evaluate	**Materials – Textiles – Design and make a bag.** • Design • Make • Test • Evaluate
Key Vocabulary	**Key Vocabulary**	**Key Vocabulary**
Mechanical movement, gears, pulleys, components, 3D framework, suitability, oscillate, pneumatics, pivot, rotary, resistance, linkage, propeller, dowel, drive belt, turbine, blades, generate.	*supported structure, water resistant, components, strong, stiff, design, test, evaluate, saw, hammer, nail, clamp, balsa wood, cross-sectional diagram, exploded diagram.*	*Cutting, shaping, joining, finishing, seam allowance, needles, decoration, weave, template, pattern piece, back stitch, slip stitch.*
Suggested Websites	**Suggested Websites**	**Suggested Websites**
https://www.tes.com/teaching-resource/how-to-make-a-model-wind-turbine-6319724 https://www.pinterest.co.uk/pin/550424385690416368/ https://www.ducksters.com/science/environment/wind_power.php https://www.twinkl.co.uk/resource/t2-s-1254-make-a-turbine-activity	https://www.tes.com/teaching-resource/make-a-sailboat-materials-and-forces-ks1-2-6307338 https://www.tes.com/teaching-resource/balanced-forces-submarines-science-ks1-ks2-12081260 http://www.sciencekids.co.nz/sciencefacts/vehicles/submarines.html https://www.teachwire.net/teaching-resources/float-your-boat-make-a-mini-canoe-dt-activity-for-ks2	https://www.stem.org.uk/resources/collection/2900/working-textiles-and-food-key-stages-one-and-two https://www.tes.com/teaching-resource/dt-year-5-textiles-sewing-project-laptop-ipad-mobile-phone-sleeve-11112146

Aims and focused content:

- **Design** – Research functionality, appeal and purpose. Communicate ideas and develop prototypes using CAD.
- **Make** – Select materials, recognising functional and aesthetic properties.
- **Test**
- **Evaluate –** analyse current product and own ideas against a design criteria.
- Technical Knowledge – mechanisms, improving complex structures, use mechanical systems i.e. gears, pulleys, cams levers and linkages
- Use electrical systems
- Equipment – making appropriate selections
- Develop key skills – cutting, shaping, joining and finishing
- Use of ICT
- Recognise how events and individuals have influenced the word.