

Green Lane Infant School Design and Technology Curriculum "In Design and Technology we plan, design and create products that people use"

Nursery	Autumn 1	Autumn 2	Spring1	Spring 2	Summer 1	Summer 2
	<p><u>Structures: stability 1(pg35 & 37)</u></p> <p>Knowledge Category- technical knowledge Key Knowledge: A structure is something that is made either by nature or by people. To understand stable and unstable structures. Skills: To build stable structures using familiar and new resources. Ramping, bridging, stacking and enclosing. Vocab: Structure- something made either in nature or by people Nature- all things not made by people</p> <p>Resources: construction kits, Duplo, blocks, popoids, mobile</p>	<p><u>Solid Structures</u></p> <p>Knowledge Category- Technical Knowledge Key Knowledge: To understand that solid structures, are made from many smaller solid objects e.g. brick walls are strong because of the way they are connected Skill: exploration of blocks and stacking through play both indoors and out. Vocabulary: stacking- a neat pile of objects usually one on top of the other Arrange- putting things in order Build- joining together different parts Solid- keeps its size and shape Collapse- fall down Resources: blocks, boxes, tins, bricks</p>	<p><u>Sliders (pg79)</u></p> <p>Knowledge Category- technical knowledge Key Knowledge: to understand that a slider is a rod that moves when pushed or pulled. If an object is attached to one end the push or pull will move it. Skill: To create a slider mechanism that will allow a slider rod to push through a slot in the card. Vocabulary: back, front, up down, push, pull, slide, Resources: lolly sticks, paper, card, scissors, tape, glue.</p>	<p><u>Levers and Pivots (99)</u></p> <p>Knowledge Category- Technical Knowledge Key Knowledge: A lever is a mechanism that has a rigid rod which has a pivot point somewhere along its length. Skill: To use split pins to create a lever mechanism. Vocabulary: Pivot- balances or turns around a point Rigid- stiff and does not bend easily Resources: paper, split pins</p>	<p><u>Wheels & Axles (pg 115)</u></p> <p>Knowledge Category- Technical knowledge Key Knowledge: A wheel and an axle is a mechanism used for moving things. Skill: To use construction to make a vehicle with moving wheels Vocabulary: Wheel- a frame that turns on an axle. Axle- a bar on which wheels turn mechanism- something that changes the direction or size of a push or a pull Resources: mechano, mobilo</p>	<p><u>Food Tech- Toast</u></p> <p>Knowledge Category- Practical Knowledge Key Knowledge: spreading involves using a knife and spreading on soft food such as margarine, jam etc. Skill: To spread using a knife Vocabulary: cutting, spreading, knife, margarine/butter Resources: toaster, bread, knife, margarine/butter</p>

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Reception	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<p><u>Stability 2 (pg 38)</u> Knowledge Category- Technical Knowledge Key Knowledge: To understand that a stable object is one that is fixed firmly in position and is not able to move or fall. Anchoring prevents object from moving, fixing it in that place, bracing prevents it from spreading apart, a base prevents tall objects from falling over. Skill: To stabilise objects by anchoring, bracing, creating bases and buttresses. Vocabulary: Stable- not likely to move all fall free-standing able to support itself anchor-fix something so it doesn't move brace-something that gives support base- the bottom of a structure</p>	<p><u>Wheels & Axels (117)</u> Knowledge Category- Technical Knowledge Key Knowledge: A wheel and axel is a mechanism used for moving things. They work together turning the wheel, turns the axle in the same direction. Skill: design and make a mechanism that has moving wheels e.g. bike, car, wheelbarrow Vocabulary Attach- if you attach something you fasten or join it to another object Chassis- the frame on which a vehicle is built. Resources: mechano, bottle lids, straws, matchsticks, reels, card, box, pegs</p>	<p><u>Solid structures</u> Knowledge Category- Technical Knowledge/ Existing products Key Knowledge: Solid structures are made from either one solid object or lots of solid objects joined together. Stone and brick structures are joined together with mortar. There is a natural structure such as mountains, icebergs and coastal arches or manufactured such as a wall, a pyramid or a stone bridge. Skill: To explore structures using familiar and new resources. Focusing on stability and balance Vocabulary: Solid- made of objects that have little or no space inside them. Mortar- cement used to join bricks or stones together. Resources: wooden blocks, boxes, tins, bricks, planks, crates, tyres, Duplo, Mega blocks.</p>	<p><u>Sliders (pg 81)</u> Knowledge Category- Technical Knowledge Key Knowledge: To understand that slider mechanisms can guide an object in a straight or curved line as well as up and down. To be aware that slots can be cut horizontally, vertically and diagonally or a curve. A guide bridge stops the slider from rotating. Skill: to make a slider mechanism with a curved slot or wavy one. Attaching a guide bridge to prevent it falling out. Vocabulary: Horizontal- flat and level with the ground Vertical- standing or pointing straight up Diagonal- in a sloping direction. Rotating- turning Resources: card, paper, colours, glue, tape, stapler, scissors, rods</p>	<p><u>Levers & Pivots (pg99)</u> Knowledge Category- Practical Knowledge Key Knowledge: A lever is a mechanism that has a rigid rod which has a pivot point somewhere along its length. This pivot point is called the fulcrum and a lever can either balance or turn about the fulcrum, A force at one end of the lever leads to movement at the other. Skills: To make lever mechanisms in lots of different ways e.g. measuring, cutting, joining Vocabulary: Rigid-still and does not bend easily Pivot-balances or turns around a point Fulcrum- another word for a pivot Resources: split pins, card</p>	<p><u>Food Tech- sandwich</u> Knowledge Category- Practical knowledge- finger fluency Key Knowledge: it is important to secure the grater with one hand before grating and use the other to grate. Skill: To make a sandwich using one hand to spread and grate and the other to secure, then to fold it in half. Vocabulary: cutting, spreading, securing, folding, grating Resources: bread, cheese, margarine, knives</p>

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Year 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<p><u>Solid structures- Strength, stability & Finger Fluency (pg 61,63,65) Knowledge Category- Technical & Practical Knowledge</u></p> <p>Key Knowledge: Solid structures are strong because of the way they are arranged. If an object is stable, it is balanced and is not likely to move or fall. Designers need to practise making things until their hands and fingers do things automatically without much thinking, this is called fluency.</p> <p>Skills: To create a stabilised structure that's centre of gravity is wider than its base.</p> <p>Vocab: Arranged- how objects are placed Bond- how bricks are arranged Remove- take something away</p>	<p><u>Sliders, Rods and Objects (pg 83) Knowledge Category- Technical Knowledge</u></p> <p>Key Knowledge: attaching an object to a slider rod in various ways so that it stands out from the background.</p> <p>Skill: To manipulate a piece of card to attach and to a slider rod to allow it to stand out and not sit flat against your background.</p> <p>Vocabulary: Attach- join or fasten to an object</p> <p>Resources: card, paper, colours, glue, tape, stapler, scissors, rods</p>	<p><u>Levers- Design Make and Evaluate Knowledge Category- Design Process</u></p> <p>Key Knowledge: There are levers all around us e.g. scissors, balances and seesaws. They all have a fulcrum (pivot) in the middle</p> <p>Skill: To design a seesaw with a lever mechanism</p> <p>Vocabulary: Practise- doing something again in order to improve Apply- to make use of Decide- to make a final choice</p>	<p><u>Strength- folding/rolling/joining (pg 40) Knowledge Category- Technical Knowledge</u></p> <p>Key Knowledge: For a structure to be strong it needs to be rigid, some materials are not very rigid like paper. Designers look at the properties of materials to help them construct their products.</p> <p>Skill: To make paper more rigid by folding, rolling or joining techniques.</p> <p>Vocabulary: Rigid- something that is stiff and does not bend, stretch or twist easily Properties the ways in which a material behaves in a situation Construct to make or build something Resources: paper, card, glue, stapler, tape.</p>	<p><u>Food Tech- Design a product (pizza) Knowledge Category- Design Inspiration</u></p> <p>Key Knowledge: know that products have a purpose and be able to talk about</p> <p>Skill: To design and make a pizza using the techniques of weighing, peeling stirring, grating and slicing in order to make a pizza</p> <p>Vocabulary: weighing, peeling stirring, grating, slicing</p> <p>Resources: scales, knives, oven, onions, cheese, tomato sauce, pizza base, peppers etc</p>	<p><u>Wheels & Axels (118) Knowledge Category- Technical Knowledge</u></p> <p>Key Knowledge: An axel is attached to a chassis. There are a number of different techniques to do this which are attaching wheels to an axel or attaching axels to chassis</p> <p>Skill: To create wheels and axels to a product that moves.</p> <p>Vocabulary: automatically- an action that you do without thinking about it Fluency- do it effortlessly Resources: pegs, cardboard wheels, cardboard tubes, bottle lids, wooden sticks</p>

Balanced- stays steady and does not fall
Architects- people who design buildings
Foundations- the underground bases of structures
Resources: construction kits, plasticine



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Year 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<p>Sliders (pg 87) Knowledge Category- Design inspirations Key Knowledge: To think about a products purpose, the users and how it is designed. Skill: To create a magic picture slide mechanism that uses two images, one transparent and one opaque. Vocabulary: inspiration where you got your ideas from Purpose the reason for which something is made User the person for whom the product is designed Transparent- see through Opaque- cannot be see through</p>	<p>Guided Design- bridge building Knowledge Category- Design inspiration Key Knowledge: Designers take inspiration from existing products, they think about the products purpose, the user's needs and how it is designed. Skill: Apply your knowledge of solid structures to design a diagram and make a stable bridge Vocabulary: Adapt- changing so that it is better Organise- to arrange things into order Arrange- putting things in order Experiment- trial or test something Resources: glue, sugar cubes</p>	<p>Frame structures, finger fluency & design inspiration (pg 43, 45, 47,50) Knowledge Category- Technical Knowledge Key Knowledge: Frame structures are made up of 3 things, beams, columns and slabs. There are also natural frame structures e.g. coral, trees, skeletons, spider webs. Skill: To make a stable frame using fingers with accuracy and fluency. To design and adapt work when necessary Vocabulary: Beam- a bar of wood, metal or concrete used to support a structure Column- a tall cylinder that forms part of a structure. Slab- a thin piece of wood, stone or other material. Automatically- without thinking about it Fluency- do it effortlessly Accurate- without making mistakes Resources: glue, tape, art straws</p>	<p>Levers - Design/make/evaluate Grabber (105) Knowledge Category- Design Process Key Knowledge: A grabber allows you to pick up things without using your hands. It is a lever mechanism that uses two levers and has a fulcrum (pivot) in the middle e.g. scissors, pliers etc Skill: To apply your knowledge of lever mechanisms to design and make a grabber. To measure, cut, estimate, assemble, join Vocabulary: purpose, user, joined, fulcrum, lever mechanism, rigid, plan, modify, test (from previous years) Resources: thick cardboard, paint, split pins</p>	<p>Wheels and axels- Design/make/evaluate (123) Knowledge Category- Design inspiration Key Knowledge: Wind powered cars transport people without any fuel, the sails catch the wind and move the wheels. Skill: To apply knowledge of axel mechanisms to design and make a product that's wheels move by wind power Vocabulary: rigid, strength, frame, axel, chassis, purpose, user, inspiration, wheel, automatically, fluency (from previous years) Resources: dowels, cardboard boxes, wooden wheels, lids, paper</p>	<p>Food Tech- Design a product- (pg149) Knowledge Category- Design inspiration Key Knowledge: Inspirations for a product may come from many different places. Designers create mood boards to collect their ideas. It also helps others to see what type of product they are making Skill: To create a product outline for a dish. Peeling, slicing, chopping, snipping, weighing, stirring Vocabulary: inspiration- where you get your ideas from Purpose- the reason for which the product is designed User- the person for whom the product is designed Resources: e.g. couscous, stock cube, spring onions, yellow pepper, cucumber, tomatoes, olive oil, parsley</p>