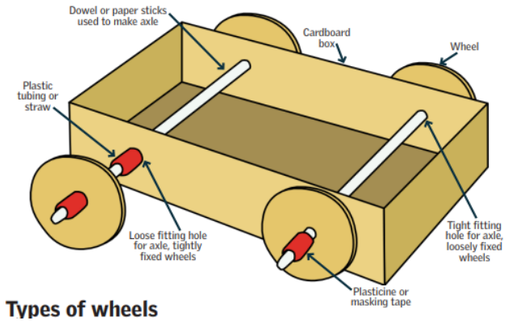
Charles Darwin Community Primary School Progression in Design Technology Year 2			
Term Topic	**Autumn Design, make and evaluate a finger puppet for someone in reception to use at story time**	**Spring Design, make and evaluate a rocket transporter for Neil Armstrong) to carry the rocket from the assembly building to the launch pad**	**Summer Design, make and evaluate a fruit smoothie for Year 2 for a healthy snack**
Themes	**Textiles - Templates and joining**	**Mechanisms – Wheels and axles**	**Food – preparing fruit and vegetables**
Prior knowledge	I can join paper together by gluing/stapling I have talked about material properties in Science	From Year 1 able to make a sliding mechanism for a card I have played with toy cars I have use construction kits to build vehicles	From Year 1 making a fruit kebab for a healthy snack
Prior skills	Explored and used different fabrics. • Cut and joined fabrics with simple techniques. • Thought about the user and purpose of products.	Assembled vehicles with moving wheels using construction kits. • Explored moving vehicles through play. • Gained some experience of designing, making and evaluating products for a specified user and purpose. • Developed some cutting, joining and finishing skills with card.	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.
Key vocabulary	names of existing products, joining and finishing techniques, tools, fabrics and components • template, pattern pieces, mark out, join, decorate, finish • features, suitable, quality mockup, design brief, design criteria, make, evaluate, user, purpose, function	vehicle, wheel, axle, axle holder, chassis, body, cab • assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism • names of tools, equipment and materials used • design, make, evaluate, purpose, user, criteria, functional	fruit and vegetable names, names of equipment and utensils soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria
NC Statutory Requirements	**Key stage 1** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to: **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.		
Technical knowledge and understanding	**Glossary** • Appliqué – to attach a decorative fabric item onto another piece of fabric by gluing and/or sewing. • Design – to generate, develop and communicate ideas for a product. • Embroider – to decorate fabric with stitches. • Evaluate – to judge how a product meets chosen criteria. • Fray – to unravel or become worn at the edge. • Glove puppet – a glove puppet fits over the hand, and the fingers operate its head and arms. • Mock-up – a model which allows children to try out ideas using cheaper materials and temporary joints. • Seam – a row of stitches joining two pieces of fabric. • Sew – to join pieces of fabric with stitches. • Template – a shape drawn to assist in cutting out shapes.	**Glossary** Axle – a rod on which one or more wheels can rotate, either freely or be fixed to and turn with the axle. • Axle holder – the component through which an axle fits and rotates. • Chassis – the frame or base on which a vehicle is built. • Friction – resistance which is encountered when two things rub together. • Dowel – wooden rods used for making axles to hold wheels.	**Glossary** • Fruit – plant or tree's edible seed with envelope. • Vegetable – plant used for food. • Nutrients – all the things in food that the body needs to remain healthy. • Pith – the soft white lining inside fruit such as oranges. • Salad – a cold dish of fresh and/or cooked vegetables or fruit. • Sensory evaluation – subjective testing of foods where senses are used to evaluate qualities such as appearance, smell, taste, texture (mouth feel). • Kebab – cooked and/or fresh ingredients on a skewer.

Techniques	Joining fabric  Gluing Stapling Safety pin Pinning Sewing	 Dowel or paper sticks used to make axle Cardboard box Wheel Plastic tubing or straw Loose fitting hole for axle, tightly fixed wheels Tight fitting hole for axle, loosely fixed wheels Plasticine or masking tape **Types of wheels**	 Grating  Squeezing
KPIs	**Designing** • Design a functional and appealing product for a chosen user and purpose based on simple design criteria. • Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.	**Designing** • Generate initial ideas and simple design criteria through talking and using own experiences. • Develop and communicate ideas through drawings and mock-ups.	**Designing** • Design appealing products for a particular user based on simple design criteria. • Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. • Communicate these ideas through talk and drawings
	Making • Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. • Select from and use textiles according to their characteristics	**Making** • Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. • Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.	**Making** • Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. • Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.
	Evaluating • Explore and evaluate a range of existing textile products relevant to the project being undertaken. • Evaluate their ideas throughout and their final products against original design criteria	**Evaluating** • Explore and evaluate a range of products with wheels and axles. • Evaluate their ideas throughout and their products against original criteria.	**Evaluating** • Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. • Evaluate ideas and finished products against design criteria, including intended user and purpose.
	Technical knowledge and understanding • Understand how simple 3-D textile products are made, using a template to create two identical shapes. • Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. • Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. • Know and use technical vocabulary relevant to the project	**Technical knowledge and understanding** • Explore and use wheels, axles and axle holders. • Distinguish between fixed and freely moving axles. • Know and use technical vocabulary relevant to the project	**Technical knowledge and understanding** • Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The Eatwell Guide. • Know and use technical and sensory vocabulary relevant to the project.
Links to other subjects	**Art and design** – quick drawings or detailed observational drawings of one product to develop and share ideas. Use colour, pattern, texture, and shape as appropriate. **Science** – everyday materials. Investigate physical properties of fabric types against suitability for the product to be made. Use knowledge of properties of everyday materials to select appropriate ones for their products. **Spoken language** – ask questions throughout the process to check understanding, develop vocabulary and build knowledge. Listen and respond to adults.	**Science** – working scientifically: ask simple questions and observe closely. Explore use of everyday materials. **Mathematics** – number of wheels, more than, less than, equal. Measuring length using non-standard and standard units. **Spoken Language** – use of technical vocabulary. Ask relevant questions to extend understanding and build vocabulary and knowledge. **Art and Design** – use a range of media and materials creatively to design and make products. **Computing** – use technology purposefully to create and manipulate digital content.	**Science** – understand that plants have leaves, stems, roots, flowers and fruits; understand the importance of growing plants and how seasons affect growth. Talk about a balanced diet, different types of food and hygiene. **Spoken language** – children develop and use a sensory vocabulary. **Writing** – develop descriptive writing based on first-hand experience of tasting fruit and vegetables. **Mathematics** – carry out a simple survey to find out which are the favourite fruits/vegetables; construct and interpret the information in e.g. pictograms and bar graphs. **Art and design** – use and develop drawing skills. **Computing** – use digital photographs to help order the main stages of making and support children's writing.

Lessons	**Investigative and Evaluative Activities (IEAs)** • Children investigate and evaluate existing products linked to the chosen project. Explore and compare e.g. fabrics, joining techniques, finishing techniques and fastenings used. • Use questions to develop children's understanding • Make drawings of existing products, stating the user and purpose. Identify and label, if appropriate, the fabrics, fastenings and techniques used	**Investigative and Evaluative Activities (IEAs)** • Explore and evaluate a range of wheeled products such as toys and everyday objects. Through questioning, direct children's observations e.g. the number, size, position and methods of fixing wheels and axles. • Draw an example of a wheeled product, stating the user and purpose, and labelling the main parts e.g. body, chassis, wheels, axles and axle holders. • Walk around the school building and grounds, recording how wheels and axles are used in daily life. • Read a story or non-fiction book that includes a wheeled product. Use this to introduce relevant vocabulary and to emphasise user and purpose	**Investigative and Evaluative Activities (IEAs)** • Children examine a range of fruit/vegetables. Use questions to develop children's understanding • Provide opportunities for children to handle, smell and taste fruit and vegetables in order to describe them through talking and drawing. • Evaluate existing products to determine what the children like best; provide opportunities for the children to investigate preferences of their intended users/suitability for intended purposes
	Focused Tasks (FTs) • Investigate fabrics to determine which is best for the purpose of the product they are creating. • Using prepared teaching aids, demonstrate the use of a template or simple paper pattern. Children could make their own templates or paper patterns. If necessary, they can use ones provided by the teacher. • Using prepared teaching aids, demonstrate the correct use of appropriate tools to mark out, tape or pin the fabric to the templates or paper patterns and cut out the relevant fabric pieces for the product. • Using prepared teaching aids, demonstrate appropriate examples of joining techniques for children to practise in guided groups e.g. running stitch including threading own needle, stapling, lacing and gluing. Talk about the advantages and disadvantages of each technique. • Using prepared teaching aids, demonstrate examples of finishing techniques for children to practise in guided groups e.g. sewing buttons, 3-D fabric paint, gluing sequins, printing	**Focused Tasks (FTs)** • Using construction kits with wheels and axles, ask children to make a product that moves. • Demonstrate to children how wheels and axles may be assembled as either fixed axles or free axles. • Show different ways of making axle holders and stress the importance of making sure the axles run freely within the holders. • Ensure that children are taught how to mark out, hold, cut and join materials and components correctly. • Using samples of materials and components they will use when designing and making, ask the children to assemble some examples of wheel, axle, axle holder combinations. Display the work completed as a reference for their DMEA	**Focused Tasks (FTs)** • Discuss basic food hygiene practices when handling food including the importance of following instructions to control risk • Demonstrate how to use simple utensils and provide opportunities for the children to practise food processing skills such as washing, grating, peeling, slicing, squeezing. Discuss different effects achieved by different processes. • Discuss healthy eating advice, including eating more fruit and vegetables; using The Eatwell Guide model talk about the importance of fruit and vegetables in our balanced diet
	Design, Make and Evaluate Assignment (DMEA) • Provide the children with a context that is authentic. Discuss with children the purpose and user of the products they will be designing, making and evaluating. Design criteria developed with the teacher should be used to guide the development and evaluation of the children's products. • Ask the children to generate a range of ideas • Through talk, drawings and mock-ups, ask the children to develop and communicate their ideas. Information and communication technology could be used for symmetry and pattern ideas. Choose one idea to follow through. • Talk with the children about the stages in making before assembling quality products, applying the knowledge, understanding and skills learnt through the IEAs and FTs. • Evaluate ongoing work and the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed.	**Design, Make and Evaluate Assignment (DMEA)** • Discuss with the children what they will be designing, making and evaluating within an authentic context. • With the children identify a user and purpose for the product and generate simple criteria. • Ask children to generate, develop and communicate their ideas as appropriate e.g. through talk and drawing. Talk about, evaluate and share ideas with other children/adults. • Make their wheel and axle product using their design ideas and criteria as an ongoing guide. • Discuss how the children might add finishing techniques to their product with reference to their design ideas and criteria. Direct the children to information and communication technology opportunities such as clip art, word processing, paint or simple drawing programs. • Ask children to evaluate their finished product, communicating how it works and how it matches their design criteria, including any changes they made	**Design, Make and Evaluate Assignment (DMEA)** • Set a context for designing and making which is authentic and meaningful. • Discuss with the children the possible products that they might want to design, make and evaluate and who the products will be for. Agree on design criteria that can be used to guide the development and evaluation of children's products • Use talk and drawings when planning for a product; ask the children to develop, model and communicate their ideas • Talk to the children about the main stages in making, considering appropriate utensils and food processes they learnt about through IEAs and FTs. • Evaluate as the children work through the project and the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed
Assessment questions	Who did you design your product for? How did you find out what they liked? What tools did you use? How did you join pieces of material together? How did you make sure your product looked like the design? Did you make a pattern? What worked well? What went wrong and how did you fix it? Did the person who you made your puppet for like it?	What did you have to find out before you made your product? How did you use that information? How did the axel work? Did the product work? What worked well? Did you change anything?	How did you choose which ingredients to use? Did you test them first? Which utensils and techniques did you use? Which was the easiest and the hardest? Did you enjoy your smoothie? Which bits would you change if you made it again? Did it look like the design?