NURSTEED Community Primary School

DESIGN TECHNOLOGY

Through kindness, teamwork and determination we thrive'

21/1/ 2025

Curriculum Yearly Coverage

	Term 2	Term 4	Term 6
Year R	Structures - Homes	Textiles – Mini beasts	Food - Picnic Food
Year 1	Mechanisms- Moving Pictures	Materials and Structures - Inventions	Food- Picnic food
Year 2	Textiles- Puppets	Food- Perfect Pizza	Mechanisms – vehicles
Year 3	Materials and Structure- photo frames	Food - Sandwiches	Textiles- pencil case
Year 4	Mechanisms- Mechanical Posters	Food- Seasonal food	Electrical systems - Alarms
Year 5	Textiles – Textiles and Fashion	Structures – Bridges	Food- food of west Asia
Year 6	Food- Burgers	Textiles- Funky Furnishings	Mechanisms- Fairground

Structure of Lessons

	Year 1/2	Year 3/4	Year 5/6
Lesson 1 **Background research** Exploring context and existing product	- Understand what a product is and who it is for. - Understand how a product works and how it is used. - Identify where you might find this product. - Identify the materials used to make the product. - Express an opinion about the product(YEAR 2)	- Identify who made the product, when it was made and what its purpose is. - Identify what the product has been made from. - Evaluate the product on design and use. - Brain Builders: Research facts about famous inventors/ chefs / designers etc. linked to product	- Identify who made the product, when it was made and what its purpose is. - Identify what the product has been made from and how environmentally friendly the materials are. - Evaluate the product on design, appearance and use - Identify the cost to make the product. - Brain Builders: Research facts about famous inventors/ chefs / designers etc linked to product
Lesson 2 **Design Criteria** Understanding their intended users and own products.	- Use own experiences and existing products to develop ideas (yr2) - Explain what product they will be designing and making. - Explain who their product will be used by. - Describe what their product will be used for and how it will work. - Explain why their product is suitable for the intended user	- Brain Builders: Understand and gather information about what a particular group or people want from a product Describe the purpose of their product - Identify design features that will appeal to intended users. - Explain how parts of their product works . - Develop their own design criteria and use for planning ideas. - Generate realistic ideas that meet needs of user and take into account availability of resources and intended users. - Explain how parts of their product will work Develop their own design criteria and use for planning ideas . - Generate innovative ideas that meet needs of user and take into account availability of resources.	- Brain Builders: Understand and gather information about what a particular group or people want from a product, using questionnaires, surveys etc. - Describe the purpose of their product. - Identify design features that will appeal to intended users. - Explain how parts of their product will work. - Create a design description for their product. - Highlight the impact of time, resources and cost within their design ideas. - Generate innovative ideas that meet needs of user.
Planning – Lesson 3 Communicating ideas and creating prototypes for product	- Discuss what their steps for making could be. - Represent ideas through talking, drawing and computing – (where appropriate) - Choose materials to use based on suitability of their properties. - Create templates/pattern pieces and explore materials whilst developing ideas.	- Share and discuss ideas with others. - Order the main stages of making. - Choose materials to use based on suitability of their properties. - Represent ideas in diagrams, annotated sketches and computer based programmes (where appropriate). - Create pattern pieces and prototypes	- Share and discuss ideas with others. - Record a step by step plan for making. - Produce lists for the tools, equipment and materials they will be using. - Choose materials to use based on suitability of their properties and aesthetic qualities. - Represent ideas in diagrams, annotated sketches and computer based programmes (where appropriate) - Create pattern pieces and prototypes

Making – Lesson 4-5 Selecting the tools and applying the practical skills and techniques	- Choose suitable tools for making whilst explaining why they should be used. - Follow safety and food hygiene procedures. - Measure, mark, cut and shape materials and components. - Join, assemble and combine materials and components. - Use finishing techniques, including skills learnt in Art.	- Choose suitable tools for making whilst explaining why they should be used. - Use design criteria whilst making Follow safety and food hygiene procedures. - Measure, mark, cut and shape materials and components with some accuracy. - Join, assemble and combine materials and components with some accuracy. - Use finishing techniques, including skills learnt in Art with some accuracy	- Choose suitable tools for making whilst explaining why they should be used. - Use design criteria whilst making. - Follow safety and food hygiene procedures. - Measure, mark, cut and shape materials and components accurately. - Join, assemble and combine materials and components accurately. - Demonstrate problem solving skills when encountering a mistake or practical problem. - Use finishing techniques that involve a number of steps, including skills learnt in Art accurately
Evaluation – Lesson 6 Referring to planning and initial ideas in evaluating their product	- Talk about their design ideas and what they have made. - Make simple judgements of how the product met their design ideas. - Suggest how their product could be improved	- Use design criteria to evaluate product – identifying both strengths and areas for development. - Consider the views of others, including intended user, whilst evaluating product	- Use design criteria to evaluate product – looking at quality of end product and design and whether it is fit for its intended purpose. - Consider the views of others, including intended user, whilst evaluating product.

Whole School Skills Progression.

The key skills you need to cover, how they progress and where prior and future learning will happen.

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Whole School Skills Progression

Structures	Previous knowledge	Skill progression	Future learning
Year R		Build and construct with a wide range of objects, selecting appropriate resources and adapting their work when necessary. Select the tools and techniques they need to shape, assemble and join materials they are using. Learning to construct with a purpose in mind.	Year 1 inventions
Year 1	Homes	**Inventions** Make a simple structure. Describe the materials used to make the structure. Measure and mark out the materials that are needed.	Year 3
Year 3	Year 1 inventions	**Photoframes** Make rectangular frames of different sizes using strip wood, reinforcing with different materials. Use a range of materials to make joints	Year 5 Bridges

Year 5	Year 3	**<u>Bridges</u>** Create nets and templates accurately in a range of sizes. Use a range of increasing methods to strengthen 3D structures and frames. Investigate measure and record the load tolerance of different structures and find ways of improving a structures loadbearing capacity.	KS3
Mechanisms	**Previous knowledge**	**Knowledge/ Skill progression**	**Future learning**
Year 1		**<u>Moving pictures</u>** Deconstruct a simple slider and describe how it works. Construct a simple slider independently. Make a lever by joining card strips with paper fasteners.	Year 2 inventions
Year 2	Year 1 Moving pictures	**<u>Axles- Safari vehicles</u>** Make a product that uses movement and use the correct materials for the product so it works well To know how an axle works and to be able to make on independently. Know that the product needs to be made from the materials that are suitable for the job	Year 4 Mechanical posters
Year 4	Year 2 Moving vehicles (axles)	**<u>Mechanical posters</u>** To recognise and explain why a lever and linkage system is used. To use a range of techniques to make a mechanism (cut and shape with precision, combine materials in a variety of ways) To select and explain materials based on a purposeful product.	Year 5

Electrical systems	Previous knowledge	Knowledge/ Skill progression	Future learning
Year 4		**Alarms** Explore and describe how an electric motor can be used in a circuit. Identify key features of electrical safety. Use a remote-controlled device to switch a device on and off.(including computer control packages)	Year 6 electrical vehicles
Year 6	Year 4 Alarms	**Fairground rides** Explore and describe how switches can be used in a range of circuits to control components, e.g. lights in a lighthouse, a movement sensor in a burglar alarm. Apply appropriate safety measures when constructing circuits. Explore and discuss ways in which electricity can be used to control movement.	

Textiles	Previous knowledge	Knowledge/ Skill progression	Future learning
Year R		**Minibeast** To begin to explore joining different materials using appropriate tools safely joining materials using a running stitch	Year 2 puppet making
Year 2	Year R Minibeasts	**Puppet Making** To Join textiles using glue, staples, tying or a simple stitch To Make a textile product that is finished well and does the job it was made for Know that textiles have different properties (feel, texture, insulation,	Year 3

		Select the appropriate textile so that it does the job well.	
Year 3	Year 2 puppet making	**<u>Pencil Case</u>** Give reasons for the selection of fabrics and techniques based on knowledge of characteristics. Make and use a simple paper pattern. Join fabrics in a range of different ways using zips, tie clasp, toggles, press-studs and buttons. Use a wide range of simple finishing techniques.	Year 5 Phone cases
Year 5		**<u>Phone cases</u>** Select appropriate materials to create a product. Create increasingly complex patterns and templates with more than one part that are accurately measured. Select and use the most appropriate sewing technique to join and decorate fabric. Identify the most effective finishing technique in order to maximise the aesthetic value of the product.	Year 6 Poppy making
Year 6	Year 5 Phone case	**<u>Cushions</u>** Use a broad range of material joining techniques including stitching, mechanical fastenings, heat processes and adhesives. Investigate and develop skills in modifying the appearance of materials including textiles and other manufactured materials	

Food and Nutrition	Previous knowledge	Knowledge/ Skill progression	Future learning
Year R		**<u>Picnic Food</u>** Beginning to understand some of the tools, techniques and processes involved in food preparation. E.g. taking turns stirring the mixture for a cake and then watching it rise while cooking. Children should practise stirring, mixing, pouring and blending ingredients during cookery activities.	Year 1
Year 1	Year R	**<u>Picnic food</u>** With support Sort and classify food into food groups, e.g. vegetables, pulses, cereals, dairy etc. Talk about what happens when food is heated and cooled. Measure and weigh accurately using cups and spoons. Work safely and hygienically.	Year 2 pizza making
Year 2	Year 1	**<u>Pizza Making</u>** Sort and classify an increasing range of food according to specific food groups, e.g. proteins, carbohydrates, fats etc. Measure and weigh using standard units and scales. Discuss about the way in which food processing can affect the taste, appearance, texture and colour of food.	Year 3 Sandwiches

Year 3	Year 2 Pizza Making	**Healthy Sandwiches** Sort and classify an increasing range of food according to specific food groups, e.g. proteins, carbohydrates, fats etc and discuss the purpose of each food group. Be able to follow a recipe and then create their own. To be able to work safely and hygienically.	Year 4 Bread
Year 4	Year 3 Sandwiches	**Seasonal food** Understand seasonality, know where and how a variety of ingredients are grown, reared, caught and processed. Talk about and give reasons for the need to work safely and hygienically. Talk about the impact of changing proportions within a recipe and use knowledge of food and cooking to generate own recipes. Talk in scientific terms about the physical and chemical changes that take place when food e.g heated and cooled	Year 6 3 course Mexican meal
Year 6	Year 4 Bread making	**Burgers** Understand the source, seasonality and characteristics of a broad range of ingredients. Understand the principles of cleaning to prevent cross-contamination, chilling foods thoroughly and reheating food until steaming hot. Understand and apply the principles of nutrition and health including the implications of excess and deficiency. Become competent in a range of cooking techniques, e.g. selecting and preparing ingredients, application of heat, seasoning dishes, combining ingredients	

DESIGN TECHNOLOGY

Key Knowledge and Skills Statements for units of work.

Rhianne Collings

EYFS AND KS1					
	Food and Nutrition	**Material and structures**	**Textiles**	**Mechanisms**	**Electrical systems**
Year R	**Picnic Food** Own Planning	**Homes** Own Planning	**Minibeasts** Own Planning		
Knowledge	• I know how use a knife safely • I know I need to wash my hands before preparing food.	• I can say my ideas • I know a way of joining two materials together. • I know how to use safely scissors.	• I know how to use running stitch. • I know whom my product is for. • I know a way of joining materials.		
Skills					
Design	I can suggest foods I like.	I can verbally explain how I want my boat to look. I can choose from a selection of materials.	I can suggest a mini beast I'd like to make.		

Make	To safely practise, stirring, mixing and preparing To be able to safely cut food using a knife.	To join materials together using sellotape and glue To select the correct tools, e.g scissors to cut, glue to stick.	To join my material together using a basic running stitch.		
Evaluate	To be able to say what they like about their product. To be able to identify when something isn't working e.g the tape isn't sticking and try a different method.				
Year 1	**Food and Nutrition**	**Materials and Structures**	**Textiles**	**Mechanisms**	
	Fruit salad Planbee	**Inventions** Own Planning		**Moving pictures** Planbee	
Knowledge	I understand basic food hygiene, e.g. washing hands, tying long hair back and keeping surfaces clean. I can name a variety of fruits and vegetables I know that some fruits and vegetables need to be washed, cut, cored, peeled or grated before they can be eaten.	I know what an invention is. I know what a material is. I know two different ways of joining two materials together.		I know what a mechanism does. I can name two different mechanisms (slider, lever, axle) I know how to make a pivot and lever.	
Skills					
Design	To suggest a variety of fruits. To draw my own plan.	Describe the materials they will use to make the structure.		To be able to discuss my ideas. To complete a drawing complete with labels.	
Make	With help children can use knives safely to cut food Use mixing bowls to prepare a mixture	Measure and mark out the materials that are needed. Make a simple structure by joining materials together.		Explore how moving objects work. Look at wheels, axles. Turning mechanisms, hinges and simple Levers.	

Evaluate	Talk about their own and others' work Describe how a product works				
Year 2	**Food and Nutrition**	**Materials and Structures**	**Textiles**	**Mechanisms**	
	Perfect pizza Planbee		**Puppets** Planbee	**Axles – vehicles** Planbee	
Knowledge	I know which food group a variety of pizza toppings belong to. I know why each of the food groups is important for a balanced diet. I know 3 ways to stay safe whilst in the kitchen.		I can name 3 different types of puppets. I know how I can join some textiles. I know the difference between a running stitch and an over stitch.	I know what an axle and a chassis is. I know how to design a vehicle with wheels, axles and chassis, as well as a body. I know there are different ways of using axles, chassis and wheels to create a moving base.	
Skills					
Design	To design a pizza based on a balanced diet. To create a plan with labelled diagrams based on a given design criteria.		Creating a design Criteria for a puppet. Use models, pictures and words to describe my designs.	Designing a vehicle that includes wheels, axles and axle holders, that when combined, will allow the wheels to move. Creating clearly labelled drawings that illustrate movement.	
Make	Describe the properties of the Ingredients Weigh and measure accurately		To join materials using a running and over stitch. To Select the appropriate textile so that it does the job well.	To make a product that uses movement and use the correct materials for the product so it works well To decorate my product, or add detail	

Evaluate	Talk about ideas, saying what they like and dislike ·Identify what they could have done differently and how they could improve their work in the future				

Lower KS2

Year 3	**Food and Nutrition**	**Materials and Structures**	**Textiles**	**Mechanisms**	**Electrical**
	Sandwiches Planbee	**Photo frame** Planbee	**Pencil case** Planbee		
Knowledge	I know that food belongs to different food groups. I know the names of the different food groups and its purpose. I Know 3 ways to work hygienically within the kitchen.	I know ways to make a structure stable and strong. I can name the features of a photo frame.	I know what a backstitch and whipstitch are. I know different ways to add embellishments to fabric (buttons, sequins, bead etc) I know what a fastening is and how to attach one.		
			Skills		
Design	To design a healthy and nutritious sandwich by Communicating ideas using a variety of methods , including drawing and models	To design a photo frame suitable for a purpose. To explain how the photo frame will be finished to a high quality.	To follow design criteria to plan their own product, explaining decisions made when designing a personalised pencil case.		
Make	Select ingredients for the product Work in a safe and hygienic way. Measure ingredients by weight or quantity using scales.	Use appropriate mouldable materials suitable for the product.	Select appropriate textiles for my product. · Use scissors accurately.		

		Shape the product carefully using appropriate techniques and tools.	To be able to use a backstitch and Whipstitch.		
Evaluate	Reflect on work in relation to intended use (and users) and identify improvements needed • Carry out appropriate tests first • Recognise quality depends on how something is made and if it meets its intended use • Evaluate products and suggest improvements.				
Year 4	**Food and Nutrition**	**Materials and Structures**	**Textiles**	**Mechanisms**	**Electrical**
	Seasonal food **Planbee**			**Mechanical posters** Own Planning	**Alarms** Planbee
Knowledge	To know several bread products. I can explain the process of making bread. I know the nutritional benefits of bread in our diet.			To know what a lever is. To know what a linkage is. To know how to measure and mark out accurately.	I know how a torch works I know how to make a simple circuit I know what a switch in a circuit does.
Skills					
Design	To Design a bread within a given budget, drawing upon previous taste testing judgements.			To design a mechanical poster using a lever aand linkage. Creating a detailed plan modifying where appropriate	To designing a torch, giving consideration to the target audience and creating both design and success criteria.
Make	To following a baking recipe, from start to finish, including the preparation of ingredients.			To accurately measuring using cm's.	To make a torch with a working electrical circuit and switch. Using appropriate equipment

	To cook safely, following basic hygiene rules.		To be able to explain choices in materials for creating linkage and levers.	to cut and attach materials. To assembling a torch according to the design and success criteria.
Evaluate	Reflect on my designs and develop them throughout the process Identify what is working well and what can be improved.			

Upper KS2

Year 5	**Food and Nutrition**	**Material and Structures**	**Textiles**	
	Food of West Africa Planbee	**Bridges** Planbee	**Textiles and Fashion** Planbee	
Knowledge	I know what the term 'seasonal food' means I know some of the nutrients we get from fruits, vegetables, meat, fish and dairy products. I can discuss the benefits and problems of unseasonal food being available in shops all year round.	To name ways that bridges are strengthened – pillars and beams. To name three types of bridges – truss, arch and suspension. To understand how bridges utilise compression and tension forces.	I know several different stitches. I know when to use a certain stitch. Design criteria tells the designer what the product has to do and what it must include.	
		Skills		
Design	To design a dish based on seasonal ingredients explaining choices throughout the process	Design a stable structure that is able to support weight.	To draw pattern pieces, adding details such as seam allowance.	

	and linking it to their design criteria.	Creating a plan that draws on various sources of information.	To design an item made using textiles according to design criteria.		
Make	Use a selection of ingredients to meet an identified need Work in a safe and hygienic way.	Explaining why selecting appropriating materials is an important part of the design process Independently measuring and marking whilst selecting appropriate tools and equipment for particular tasks.	Make careful and precise measurements so that joins, holes and openings are exactly in the right place. Add colour and texture to my work Mark out using own patterns and templates		
Evaluate	With Some support - Reflect on designs and develop them - Identify what is working well and what can be improved - Have an awareness of limited resources (budget, time availability) - Evaluate products in light of information sources used to inform the design - understand how key events and individuals in design and technology have helped shape the world e.g Brunel				
Year 6	**Food and Nutrition**	**Materials and Structures**	**Textiles**	**Mechanisms**	**Electrical**
	Burgers Planbee		**Funky furnishing** Planbee		**Fairground** Own Planning
Knowledge	To develop ideas and make changes to a recipe for a Mexican starter, main or dessert dish. To work as a team to create design logos and business plans To chop, dice, mix, stir and measure correctly to cook a course for our collective.		Poppies were the only things to grow in the fields during conflict in WW1.The red colour symbolised the bloodshed. Poppies can be made primarily using card; felt; cotton materials. Sewing is the best method to keep the materials together. We use running, back and blanket stitch.		To move my electrical vehicle forwards and backwards and up a ramp To measure, saw and glue wood to create a chassis/frame To attach pulleys and create an electrical

			I can sew on a button/bead and a safety brooch to my design.		circuit to drive my vehicle.
			Skills		
Design	Writing a recipe, explaining the key steps, method and ingredients. Including facts and drawings from research undertaken.		Designing a Poppy in accordance to a specification linked to set of design criteria. Annotating designs, to explain their decisions.		To design an appropriate electrical circuit for their car. To describe the process they will need to go through to successfully complete their product
Make	Following a recipe, including using the correct quantities of each ingredient. Adapting a recipe based on research. Working safely and hygienically with independence.		Using a template when cutting fabric to ensure they achieve the correct shape. Using pins effectively to secure a template to fabric Marking and cutting fabric accurately, in accordance with their design. Sewing using an appropriate choice of stitch.		To work accurately and safely with a variety of tools, materials and components. To suggest ways of adapting and improving their design to give a high quality finish.
Evaluate	· Reflect on designs and develop them · Identify what is working well and what can be improved · Awareness of limited resources (budget, time availability) · Evaluate products in light of information sources used to inform the design · understand how key events and individuals in design and technology have helped shape the world				

DESIGN TECHNOLOGY

Assessment

Assessment of Design Technology

- Assessment are to be completed not only at the end of a unit but throughout the teaching with questioning and observations.
- Assessments will be completed using Quizzes focusing on the Key Knowledge, questioning and observation of skills.

Questions to Aid the Assessment of DT

- What materials/ tools/ techniques have you chosen?
- Why have you chosen to do it like that?
- How does it work?
- What will make your product successful?
- Who are you designing this for?
- What is it for?
- What will/ does it do?
- What else have you tried?
- What worked well? What didn't? What did you learn?