

D.T**Y1**

Cooking and Nutrition - Preparing fruits and vegetables

Research

CORE

Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.

Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.

Taste and evaluate a range of fruits and vegetables to determine the user's preferences.

Design

CORE

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

Communicate ideas through talk and drawings.

Understand and use principles of a healthy and varied diet to prepare dishes e.g. fruits and vegetables as part of the 'Eatwell Plate'.

WORKING DEEPER

Communicate ideas clearly.

Make

CORE

Use simple utensils and equipment safely e.g. peel, cut, slice, squeeze, grate and chop.

Select from a range of fruits and vegetables according to their characteristics to create their product e.g colour, texture and taste.

WORKING DEEPER

Work confidently and independently, accurately designing and making a product.

Confidently demonstrate techniques to others.

Evaluate

CORE

Evaluate ideas and finished product against the design criteria including user and purpose.

WORKING DEEPER

Give detailed evaluations relating to the design brief.

Structures - Freestanding structures

Research

CORE

Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings.

Know how freestanding structures are made stronger, stiffer and more stable.

Design

CORE

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

Develop, model and communicate ideas through talking, mock-ups and drawings.

WORKING DEEPER

Communicate ideas clearly.

Make

CORE

Plan by suggesting what do to next.

Select and use tools, skills and techniques, explaining their choices.

Select new and reclaimed materials and construction kits to build their structure.

WORKING DEEPER

Work confidently and independently, accurately designing and making a product.

Confidently demonstrate techniques to others.

Evaluate

CORE

Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.

WORKING DEEPER

Give detailed evaluations relating to the design brief.

Mechanisms - Wheels and axles

Research

CORE

Explore and evaluate a range of products with wheels and axles.

Explore and use wheels, axles and axle holders.

Distinguish between fixed and freely moving axles.

Design

CORE

Generate ideas and simple design criteria through talking and using own experiences.

Develop and communicate ideas through drawings and mock-ups.

WORKING DEEPER

Communicate ideas clearly.

Make

CORE

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 according to their characteristics e.g. paper, card, plastic and wood.

WORKING DEEPER

Work confidently and independently, accurately designing and making a product.

Confidently demonstrate techniques to others.

Evaluate

CORE

Evaluate their ideas throughout and their products against original design brief.

WORKING DEEPER

Give detailed evaluations relating to the design brief.

D.T**Y2**

Cooking and Nutrition - Baking bread

Research

CORE

Generate initial ideas and design criteria through investigating a variety of products.

Carry out evaluations of products. Record the evaluations using tables.

Design

CORE

Plan the main stages of a recipe, listing ingredients and equipment.

Communicate ideas through discussion with adults and peers using annotated drawings.

WORKING DEEPER

Communicate ideas clearly.

Make

CORE

Prepare ingredients, understanding the importance of handwashing and good hygiene.

Use simple utensils and equipment safely to prepare and combine ingredients.

WORKING DEEPER

Work confidently and independently, accurately designing and making a product.

Confidently demonstrate techniques to others.

Evaluate

CORE

Evaluate ideas and finished product against the design criteria including user, purpose and the views of others.

WORKING DEEPER

Give detailed evaluations relating to the design brief.

Textiles - Templates and joining

Research

CORE

Explore and evaluate a range of existing textile products relevant to the project being undertaken.

Understand how simple 3-D textile products are made using templates to create two identical shapes.

Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.

Design

CORE

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.

WORKING DEEPER

Communicate ideas clearly.

Make

CORE

Select from and use textiles according to their characteristics.

Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing.

Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.

Evaluate

CORE

Evaluate their ideas throughout and their final products against original design criteria.

WORKING DEEPER

Give detailed evaluations relating to the design brief.

Mechanisms - Sliders and leavers

Research

CORE

Explore and research a range of existing books and everyday products that use simple sliders and levers.

Explore and use examples of sliders and levers.

Understand that different mechanisms produce different types of movement.

Design

CORE

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

Develop, model and communicate their ideas through drawings and mock-ups with card and paper.

WORKING DEEPER

Communicate ideas clearly.

Make

CORE

Plan by suggesting what to do next.

Select and use tools, explaining their choices, to cut, shape and join paper and card.

Use simple finishing techniques suitable for the product they are creating.

WORKING DEEPER

Work confidently and independently, accurately designing and making a product.

Confidently demonstrate techniques to others.

Evaluate

CORE

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

WORKING DEEPER

Give detailed evaluations relating to the design brief.

D.T**Y3**

Cooking and Nutrition - Healthy and varied diet

Research

CORE

Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.

Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.

Design

CORE

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.

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

Plan the main stages of a recipe, listing ingredients, utensils and equipment.

WORKING DEEPER

Communicate their ideas clearly and confidently using appropriate technical vocabulary.

Make

CORE

Select and use appropriate utensils and equipment to prepare and combine ingredients.

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

Know how to use appropriate equipment and utensils to prepare and combine food.

WORKING DEEPER

Work confidently and independently, accurately designing and making their product at each stage.

Confidently demonstrate techniques to others.

Evaluate

CORE

Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.

WORKING DEEPER

Give detailed evaluations using appropriate technical vocabulary.

Structures - Shell structures

Research

CORE

Investigate and evaluate a range of shell structures including the materials, components and techniques that have been used.

Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.

Design

CORE

Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the functional and aesthetic purposes of the product.

Develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas.

Plan the order of the main stages of making.

WORKING DEEPER

Communicate their ideas clearly and confidently using appropriate technical vocabulary.

Make

CORE

Develop and use knowledge of how to construct strong, stiff shell structures.

Explain their choice of materials according to functional properties and aesthetic qualities.

Select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy.

Use computer-generated finishing techniques suitable for the product they are creating.

WORKING DEEPER

Work confidently and independently, accurately designing and making their product at each stage.

Confidently demonstrate techniques to others.

Evaluate

CORE

Test and evaluate their own products against design criteria and the intended user and purpose.

WORKING DEEPER

Give detailed evaluations using appropriate technical vocabulary.

Mechanical systems - Levers and linkages

Research

CORE

Investigate and analyse books and, where available, other products with lever and linkage mechanisms.

Identify, understand and use lever and linkage mechanisms.

Distinguish between fixed and loose pivots.

Design

CORE

Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user.

Use annotated sketches and prototypes to develop, model and communicate ideas.

WORKING DEEPER

Communicate their ideas clearly and confidently using appropriate technical vocabulary.

Make

CORE

Plan and order the main stages of making.

Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.

Select from and use finishing techniques suitable for the product they are creating.

WORKING DEEPER

Work confidently and independently, accurately designing and making their product at each stage.

Confidently demonstrate techniques to others.

Evaluate

CORE

Evaluate their own products and ideas against criteria and user needs, as they design and make.

WORKING DEEPER

Give detailed evaluations using appropriate technical vocabulary.

D.T**Y4**

Cooking and Nutrition - Oatcakes

Research

CORE

Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using tables, and simple graphs and charts.

Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose with adult support.

Design

CORE

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.

Use keywords, annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.

Plan and write a simple recipe including the main stages, a list of ingredients, equipment and utensils.

WORKING DEEPER

Communicate their ideas clearly and confidently using appropriate technical vocabulary.

Make

CORE

Select and use appropriate utensils and equipment to measure and combine appropriate ingredients.

Know how to use utensils and equipment, including heat sources, to prepare and cook food safely.

Make and present the food product appropriately for the intended user and purpose.

WORKING DEEPER

Confidently demonstrate techniques to others.

Work confidently and independently, accurately designing and making their product at each stage.

Evaluate

CORE

Evaluate ongoing work and the final product to the design brief, taking into account the views of others to identify improvements.

WORKING DEEPER

Give detailed evaluations using appropriate technical vocabulary.

Textiles - 2d shape to 3d product

Research

CORE

Investigate a range of 3-D textile products relevant to the project.

Understand how a key event/individual has influenced the development of the chosen product and/or fabric.

Design

CORE

Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user(s).

Produce annotated sketches, prototypes, final product sketches and pattern pieces.

Plan and order the main stages of making.

Understand the need for patterns and seam allowances.

WORKING DEEPER

Communicate their ideas clearly and confidently using appropriate technical vocabulary.

Make

CORE

Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.

Select fabrics and fastenings according to their functional characteristics (e.g. strength) and aesthetic qualities (e.g. pattern).

Know how to strengthen, stiffen and reinforce existing fabrics.

Understand how to securely join two pieces of fabric together.

WORKING DEEPER

Work confidently and independently, accurately designing and making their product at each stage.

Confidently demonstrate techniques to others.

Evaluate

CORE

Test their product against the original design criteria and with the intended user.

Take into account others' views when evaluating.

WORKING DEEPER

Give detailed evaluations using appropriate technical vocabulary.

Electrical systems - Simple circuits and switches

Research

CORE

Investigate and analyse a range of existing battery-powered products.

Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups.

Design

CORE

Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.

Plan and order the main stages of making.

Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.

WORKING DEEPER

Communicate their ideas clearly and confidently using appropriate technical vocabulary.

Make

CORE

Select from and use tools and equipment to cut, shape, join and finish with some accuracy.

Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities.

WORKING DEEPER

Work confidently and independently, accurately designing and making their product at each stage.

Confidently demonstrate techniques to others.

Evaluate

CORE

Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.

WORKING DEEPER

Give detailed evaluations using appropriate technical vocabulary.

D.T**Y5**

Cooking and Nutrition - Celebrating culture and seasonality

Research

CORE

Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams.

Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.

Understand how key chefs have influenced eating habits to promote varied and healthy diets.

Design

CORE

Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.

Use keywords with notes, annotated sketches, and information and communication technology as appropriate, to develop and communicate ideas.

Write a step-by-step recipe, including a list of ingredients, equipment and utensils, and how they are used.

WORKING DEEPER

Communicate their ideas clearly and confidently using appropriate technical vocabulary, and answer appropriate questions.

Make

CORE

Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.

Make, decorate and present the food product appropriately for the intended user and purpose.

Use utensils and equipment, including heat sources, to prepare and cook food, showing a good awareness of safety.

WORKING DEEPER

Work confidently and independently, accurately designing and making their product with precision at each stage including a quality finish.

Confidently demonstrate techniques to others.

Evaluate

CORE

Evaluate each stage and the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.

WORKING DEEPER

Give detailed evaluations using appropriate technical vocabulary, making suggestions for improvements.

Structures - Frame structures

Research

CORE

Investigate and evaluate a range of existing frame structures.

Research key events and individuals relevant to frame structures.

Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources.

Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.

Design

CORE

Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.

Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.

Understand how to strengthen, stiffen and reinforce 3-D frameworks.

WORKING DEEPER

Communicate their ideas clearly and confidently using appropriate technical vocabulary, and answer appropriate questions.

Make

CORE

Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.

Use finishing and decorative techniques suitable for the product they are designing and making.

WORKING DEEPER

Work confidently and independently, accurately designing and making their product with precision at each stage including a quality finish.

Confidently demonstrate techniques to others.

Evaluate

CORE

Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.

WORKING DEEPER

Give detailed evaluations using appropriate technical vocabulary, making suggestions for improvements.

Mechanical systems - Cams

Research

CORE

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

Develop a simple design specification to guide their thinking.

Investigate famous manufacturing and engineering companies relevant to the project.

Understand that mechanical systems have an input, process and an output, and how cams can be used to produce different types of movement and change the direction of movement.

Design

CORE

Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.

Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.

WORKING DEEPER

Communicate their ideas clearly and confidently using appropriate technical vocabulary, and answer appropriate questions.

Make

CORE

Select from and use a range of tools, equipment and materials to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

WORKING DEEPER

Work confidently and independently, accurately designing and making their product with precision at each stage including a quality finish.

Confidently demonstrate techniques to others.

Evaluate

CORE

Compare the final product to the original design specification.

Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.

Consider the views of others in their evaluations to improve their work.

WORKING DEEPER

Give detailed evaluations using appropriate technical vocabulary, making suggestions for improvements.

D.T**Y6**

Cooking and Nutrition - Seasonality and healthy diets

Research

CORE

Understand about seasonality in relation to food products and how it may affect availability.

Understand about the source of different food products, differentiating between animals and plants, and whether they are grown, reared, caught or processed.

Describe the five main food types and explain their importance in maintaining a healthy body.

Design

CORE

Add your text here

Make

CORE

Add your text here

Evaluate

CORE

Add your text here

Textiles - Using CAD/combining different fabric shapes

Research

CORE

Investigate and analyse textile products linked to their final product.

Generate innovative ideas through research including surveys, interviews and questionnaires.

Understand that 3-D textile products can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.

Design

CORE

Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes including using computer-aided design.

Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.

Produce detailed lists of equipment and fabrics relevant to their tasks.

Formulate step-by-step plans and, if appropriate, allocate tasks within a team.

WORKING DEEPER

Communicate their ideas clearly and confidently using appropriate technical vocabulary, and answer appropriate questions.

Make

CORE

Select from and use a range of tools and equipment, including CAD, to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

Fabrics can be strengthened, stiffened and reinforced where appropriate.

WORKING DEEPER

Work confidently and independently, accurately designing and making their product with precision at each stage including a quality finish.

Confidently demonstrate techniques to others.

Evaluate

CORE

Compare the final product to the original design specification.

Test products with intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.

Consider the views of others when evaluating to improve their work.

WORKING DEEPER

Give detailed evaluations using appropriate technical vocabulary, making suggestions for improvements.

Electrical/mechanical systems - More complex switches and circuits/pulleys or gears

Research

CORE

Investigate famous manufacturing and engineering companies relevant to the project.

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

Develop a simple design specification to guide their thinking.

Understand that mechanical and electrical systems have an input, process and an output, and how pulleys, motors and switches can change the direction and speed of movement.

Design

CORE

Develop and communicate ideas through discussion, annotated drawings, cross-sections and circuit diagrams where appropriate.

Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.

WORKING DEEPER

Communicate their ideas clearly and confidently using appropriate technical vocabulary, and answer appropriate questions.

Make

CORE

Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

WORKING DEEPER

Work confidently and independently, accurately designing and making their product with precision at each stage including a quality finish.

Confidently demonstrate techniques to others.

Evaluate

CORE

Compare the final product to the original design specification.

Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.

Consider the views of others when evaluating to improve their work.

WORKING DEEPER

Give detailed evaluations using appropriate technical vocabulary, making suggestions for improvements.

