



# End Points for Design and Technology

## YEAR ONE

### Food

#### 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

- 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

- 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 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 plate*.
- Know and use technical and sensory vocabulary relevant to the project.

### Structures

#### Designing

- Generate ideas based on simple design criteria and their own experiences, explaining what they could make.
- Develop, model and communicate their ideas through talking, mock-ups and drawings.

#### Making

- Plan by suggesting what to do next.
- Select and use tools, skills and techniques, explaining their choices.
- Select new and reclaimed materials and construction kits to build their structures.
- Use simple finishing techniques suitable for the structure they are creating.

#### Evaluating

- Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings.
- Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.

#### Technical knowledge and understanding

- Know how to make freestanding structures stronger, stiffer and more stable.
- Know and use technical vocabulary relevant to the project.

### Mechanisms

#### Designing

- 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.

#### Making

- 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.

#### Evaluating

- Explore a range of existing books and everyday products that use simple sliders and levers.
- Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.

#### Technical knowledge and understanding

- Explore and use sliders and levers.
- Understand that different mechanisms produce different types of movement.
- Know and use technical vocabulary relevant to the project.



# End Points for Design and Technology

## YEAR TWO

### Food

#### 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

- 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

- 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 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 plate*.
- Know and use technical and sensory vocabulary relevant to the project.

### Textiles

#### 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.

#### 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.

#### 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.

#### 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.

### Mechanisms

#### Designing

- Generate initial ideas and simple design criteria through talking and using own experiences.
- Develop and communicate ideas through drawings and mock-ups.

#### 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.

#### Evaluating

- Explore and evaluate a range of products with wheels and axles.
- Evaluate their ideas throughout and their products against original criteria.

#### 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.



# End Points for Design and Technology

## YEAR THREE

### Food

#### Designing

- 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.

#### Making

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

#### Evaluating

- Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.
- Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.

#### Technical knowledge and understanding

- Know how to use appropriate equipment and utensils to prepare and combine food.
- Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.
- Know and use relevant technical and sensory vocabulary appropriately.

### Structures

#### Designing

- 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.

#### Making

- Plan the order of the main stages of making.
- Select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy.
- Explain their choice of materials according to functional properties and aesthetic qualities.
- Use computer-generated finishing techniques suitable for the product they are creating.

#### Evaluating

- Investigate and evaluate a range of shell structures including the materials, components and techniques that have been used.
- Test and evaluate their own products against design criteria and the intended user and purpose.

#### Technical knowledge and understanding

- Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.
- Develop and use knowledge of how to construct strong, stiff shell structures.
- Know and use technical vocabulary relevant to the project.

### Textiles

#### Designing

- 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.

#### Making

- Plan the main stages of making.
- 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.

#### Evaluating

- Investigate a range of 3-D textile products relevant to the project.
- Test their product against the original design criteria and with the intended user.
- Take into account others' views.
- Understand how a key event/individual has influenced the development of the chosen product and/or fabric.

#### Technical knowledge and understanding

- Know how to strengthen, stiffen and reinforce existing fabrics.
- Understand how to securely join two pieces of fabric together.
- Understand the need for patterns and seam allowances.
- Know and use technical vocabulary relevant to the project.



# End Points for Design and Technology

## YEAR FOUR

### Food

#### Designing

- 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.

#### Making

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

- 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.

#### Evaluating

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

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

#### Technical knowledge and understanding

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

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

- Know and use relevant technical and sensory vocabulary appropriately.

### Mechanical Systems

#### Designing

- 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.

#### Making

- 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.

#### Evaluating

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

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

#### Technical knowledge and understanding

- Understand and use lever and linkage mechanisms.

- Distinguish between fixed and loose pivots.

- Know and use technical vocabulary relevant to the project.

### Electrical Systems

#### Designing

- 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.

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

#### Making

- Order the main stages of making.

- 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.

#### Evaluating

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

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

#### Technical knowledge and understanding

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

- Apply their understanding of computing to program and control their products.

- Know and use technical vocabulary relevant to the project.



# End Points for Design and Technology

## YEAR FIVE

### Food

#### Designing

- Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.
- Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.
- Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.

#### Making

- Write a step-by-step recipe, including a list of ingredients, equipment and utensils
- 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.

#### Evaluating

- 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.
- Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.
- Understand how key chefs have influenced eating habits to promote varied and healthy diets.

#### Technical knowledge and understanding

- Know how to use utensils and equipment including heat sources to prepare and cook food.
- Understand about seasonality in relation to food products and the source of different food products.
- Know and use relevant technical and sensory vocabulary.

### Structures

#### Designing

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

#### Making

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

#### Evaluating

- Investigate and evaluate a range of existing frame structures.
- Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.
- Research key events and individuals relevant to frame structures.

#### Technical knowledge and understanding

- Understand how to strengthen, stiffen and reinforce 3-D frameworks.
- Know and use technical vocabulary relevant to the project.

### Electrical Systems

#### Designing

- Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of constraints including time, resources and cost.
- Generate and develop innovative ideas and share and clarify these through discussion.
- Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.

#### Making

- Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.
- Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.
- Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.

#### Evaluating

- Continually evaluate and modify the working features of the product to match the initial design specification.
- Test the system to demonstrate its effectiveness for the intended user and purpose.
- Investigate famous inventors who developed ground-breaking electrical systems and components.

#### Technical knowledge and understanding

- Understand and use electrical systems in their products.
- Apply their understanding of computing to program, monitor and control their products.
- Know and use technical vocabulary relevant to the project.



# End Points for Design and Technology

## YEAR SIX

### Food

#### Designing

- Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.
- Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.
- Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.

#### Making

- Write a step-by-step recipe, including a list of ingredients, equipment and utensils
- 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.

#### Evaluating

- 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.
- Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.
- Understand how key chefs have influenced eating habits to promote varied and healthy diets.

#### Technical knowledge and understanding

- Know how to use utensils and equipment including heat sources to prepare and cook food.
- Understand about seasonality in relation to food products and the source of different food products.
- Know and use relevant technical and sensory vocabulary.

### Textiles

#### Designing

- Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.
- Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design.
- Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.

#### Making

- Produce detailed lists of equipment and fabrics relevant to their tasks.
- Formulate step-by-step plans and, if appropriate, allocate tasks within a team.
- Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

#### Evaluating

- Investigate and analyse textile products linked to their final product.
- 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 to improve their work.

#### Technical knowledge and understanding

- A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.
- Fabrics can be strengthened, stiffened and reinforced where appropriate.

### Mechanical Systems

#### Designing

- Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.
- Develop a simple design specification to guide their thinking.
- Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.

#### Making

- Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.
- Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

#### Evaluating

- 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 to improve their work.
- Investigate famous manufacturing and engineering companies relevant to the project.

#### Technical knowledge and understanding

- Understand that mechanical and electrical systems have an input, process and an output.
- Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.
- Know and use technical vocabulary relevant to the project.