

## Year 3 Objectives:

### National Curriculum Objectives

#### Design

- Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at particular groups or individuals
- Generate, develop, model, communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer aided design

#### Make

- Select from and use a wider range of tools and equipment to perform practical tasks (for example cutting, joining, finishing) accurately
- Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

#### Evaluate

- Investigate and analyse a range of existing products
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- Understand how key events and individuals in design and technology have helped shape the world

#### Technical Knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- Understand and use mechanical systems (gears, pulleys, cams, levers, linkages)
- Understand and use electrical systems in their products (eg. Series circuits incorporating switches, bulbs, buzzers, and motors)

#### Cooking and Nutrition

- Understand and apply the principles of a healthy and varied diet
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

### Skills Development and breadth of study

- **Developing, Planning and Communicating Ideas:**
  - Generate ideas after thinking about who will use them and what they will be used for, using information from a number of sources, including ICT
  - Develop and explain ideas clearly with design objectives
  - Plan, suggesting a sequence of actions or alternatives if needed
  - Communicate design ideas in different ways
- **Working with tools, equipment, materials and components to make quality products:**
  - Select tools, techniques and materials
  - Suggest alternative ways of making a product if the first attempt fails
  - Measure, mark out, cut and shape materials accurately
  - Use finishing techniques to strengthen and improve the appearance of the product, following safe procedures for food safety and hygiene
- **Evaluating:**
  - Reflect on work in relation to intended use (and users) and identify improvements needed, carrying out appropriate tests first
- **Knowledge and understanding of materials and components:**
  - Learn how the working characteristics of materials affect the way they are used

### Key Skills

#### Developing, planning and communicating ideas

- Can they show that their design meets a range of requirements?
- Can they put together a step-by-step plan which shows the order and also what equipment and tools they need?
- Can they describe their design using an accurately labelled sketch and words?

#### Working with tools, equipment, materials and components to make quality products

- Can they use equipment and tools accurately?

#### Evaluating processes and products

- Can they explain what they changed which made their design even better?

#### Cooking and Nutrition

- Can they choose the right ingredients for a product?
- Can they use equipment safely?
- Can they make sure that their product looks attractive?
- Can they describe how their combined ingredients come together?
- Can they set out to grow plants such as cress and herbs from seed with the intention of using them for their food product?
- Do they know what to do to be hygienic and safe?
- Have they thought what they can do to present their product in an interesting way?

#### Stiff and flexible sheet materials

- Do they use the most appropriate materials?
- Can they work accurately to make cuts and holes?
- Can they join materials?
- Can they measure carefully so as to make sure they have not made mistakes?
- How have they attempted to make their product strong?

#### Textiles -Build on all previous experiences.

- Use smaller eyed needles and finer threads.
- Use different stitches -running, back, split
- Use colour to express an idea in weaving - seasons, moods, or create a picture - swamp, seascape.
- Cut accurately
- Awareness of the nature of materials and surfaces - fragile, tough, durable.
- Tie dying, batik - ways of colouring or patterning material.
- Look at artists - Linda Caverley, Ellen Jackson, Alison King

## Year 4 Objectives:

### National Curriculum Objectives

#### Design

- Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at particular groups or individuals
- Generate, develop, model, communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer aided design

#### Make

- Select from and use a wider range of tools and equipment to perform practical tasks (for example cutting, joining, finishing) accurately
- Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

#### Evaluate

- Investigate and analyse a range of existing products
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- Understand how key events and individuals in design and technology have helped shape the world

#### Technical Knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- Understand and use mechanical systems (gears, pulleys, cams, levers, linkages)
- Understand and use electrical systems in their products (eg. Series circuits incorporating switches, bulbs, buzzers, and motors)

#### Cooking and Nutrition

- Understand and apply the principles of a healthy and varied diet
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

### Skills Development and Breadth of Study

#### ▪ **Developing, Planning and Communicating Ideas:**

- Generate ideas after thinking about who will use them and what they will be used for, using information from a number of sources, including ICT
- Develop and explain ideas clearly with design objectives
- Plan, suggesting a sequence of actions or alternatives if needed
- Communicate design ideas in different ways

#### ▪ **Working with tools, equipment, materials and components to make quality products:**

- Select tools, techniques and materials
- Suggest alternative ways of making a product if the first attempt fails
- Measure, mark out, cut and shape materials accurately
- Use finishing techniques to strengthen and improve the appearance of the product.

#### ▪ **Evaluating:**

- Reflect on work in relation to intended use (and users) and identify improvements needed, carrying out appropriate tests first

#### ▪ **Knowledge and understanding of materials and components:**

- Learn how the working characteristics of materials affect the way they are used
- Learn how materials can be combined and mixed to create more useful properties
- Learn how electrical circuits, including those with switches, can be used

### Key Skills

#### Developing Planning and Communicating Ideas

- Can they come up with at least one idea about how to create their product?
- Do they take account of the ideas of others when designing?
- Can they produce a plan and explain it to others?
- Can they suggest some improvements and say what was good and not so good about their original design?

#### Working with tools, equipment, materials and components to make quality products

- Can they tell if their finished product is going to be good quality?
- Are they conscience of the need to produce something that will be liked by others?
- Can they show a good level of expertise when using a range of tools and equipment?
- Do they work at their product even though their original idea might not have worked?

#### Evaluating Processes and Products

- Have they thought of how they will check if their design is successful?
- Can they begin to explain how they can improve their original design?
- Can they evaluate their product, thinking of both appearance and the way it works?
- Do they take time to consider how they could have made their idea better?

#### Textiles

- Can they join textiles of different types in different ways?
- Can they choose textiles both for their appearance and also qualities?
- Do they think what the user would want when choosing textiles?
- Have they thought about how to make their product strong?
- Can they devise a template?
- Can they explain how to join things in a different way?
- Can they use a wider variety of stitches to 'draw' with and develop pattern and texture - e.g. zig zag stitch, chain stitch, seeding?
- Can they use initial sketches to aid work?
- Look at fabrics from other countries and discuss. Compare with own. Discuss different types of fabric.

#### Electrical and Mechanical components

- Do they select the most appropriate tools and techniques to use for a given task?
- Can they make a product which uses both electrical and mechanical components?
- Can they use a simple circuit?
- Can they use a number of components?
- Can they add things to their circuits?
- How have they altered their product after checking it?
- Are they confident about trying out new and different ideas?

## Year Five Objectives:

### National Curriculum Objectives

#### Design

- Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at particular groups or individuals
- Generate, develop, model, communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer aided design

#### Make

- Select from and use a wider range of tools and equipment to perform practical tasks (for example cutting, joining, finishing) accurately
- Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities
- Evaluate
- Investigate and analyse a range of existing products
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- Understand how key events and individuals in design and technology have helped shape the world

#### Technical Knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- Understand and use mechanical systems (gears, pulleys, cams, levers, linkages)
- Understand and use electrical systems in their products (eg. Series circuits incorporating switches, bulbs, buzzers, and motors)

#### Cooking and Nutrition

- Understand and apply the principles of a healthy and varied diet
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

### Skills Development and breadth of study

#### ▪ **Developing, Planning and Communicating Ideas:**

- Generate ideas after thinking about who will use them and what they will be used for, using information from a number of sources, including ICT
- Develop and explain ideas clearly with design objectives
- Plan, suggesting a sequence of actions or alternatives if needed
- Communicate design ideas in different ways

#### ▪ **Working with tools, equipment, materials and components to make quality products:**

- Select tools, techniques and materials
- Suggest alternative ways of making a product if the first attempt fails
- Use finishing techniques to strengthen and improve the appearance of the product, following safe procedures for food safety and hygiene

#### ▪ **Evaluating:**

- Reflect on work in relation to intended use (and users) and identify improvements needed, carrying out appropriate tests first

#### ▪ **Knowledge and understanding of materials and components:**

- Learn how the working characteristics of materials affect the way they are used
- Learn how materials can be combined and mixed to create more useful properties
- Learn how mechanisms can be used to make things move in different ways, using a range of equipment, including ICT control programs

### Key Skills

#### Developing, Planning and Communicating Ideas

- Can they come up with a range of ideas after they have collected information?
- Do they take a user's view into account when designing?
- Can they produce a detailed step-by-step plan?
- Can they suggest some alternative plans and say what the good points and drawbacks are about each?

#### Working with tools, equipment, materials and components to make quality products

- Can they explain why their finished product is going to be of good quality?
- Can they explain how their product will appeal to the audience?
- Can they use a range of tools and equipment expertly?
- Do they persevere through different stages of the making process?

#### Evaluating Processes and Products

- Do they keep checking that their design is the best it can be?
- Do they check whether anything could be improved?
- Can they evaluate appearance and function against the original criteria?

#### Cooking and Nutrition

- Can they describe what they do to be both hygienic and safe?
- How have they presented their product well?
- Can they explain how their product should be stored with reasons?
- Can they set out to grow their own products with a view to making a salad, taking account of time required to grow different foods?

#### Stiff and Flexible Materials, Mouldable materials

- Are their measurements accurate enough to ensure that everything is precise?
- How have they ensured that their product is strong and fit for purpose?
- Can they justify why they selected specific materials?
- How have they ensured that their work is precise and accurate?
- Can they hide joints so as to improve the look of their product?
- Can they justify why the chosen material was the best for the task?
- Can they justify design in relation to the audience?

#### Textiles

- Can they interpret stories, music, poems and use environment and townscapes as stimuli?
- Can they select and use materials to achieve a specific outcome?
- Can they embellish work, using a variety of techniques, including drawing, painting, Batik and printing on top of textural work?
- Can they consider methods of making fabric?
- Look at work of other artists using textiles i.e. molly Williams, Jill Denton, Linda Caverley

## Year six Objectives:

### National Curriculum Objectives

#### Design

- Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at particular groups or individuals
- Generate, develop, model, communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer aided design

#### Make

- Select from and use a wider range of tools and equipment to perform practical tasks (for example cutting, joining, finishing) accurately
- Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities
- Evaluate
- Investigate and analyse a range of existing products
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- Understand how key events and individuals in design and technology have helped shape the world

#### Technical Knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- Understand and use mechanical systems (gears, pulleys, cams, levers, linkages)
- Understand and use electrical systems in their products (eg. Series circuits incorporating switches, bulbs, buzzers, and motors)
- Apply their understanding of computing to programme, monitor and control their products

#### Cooking and Nutrition

- Understand and apply the principles of a healthy and varied diet
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

### Skills Development and Breadth of Study

#### ▪ **Developing, Planning and Communicating Ideas:**

- Generate ideas after thinking about who will use them and what they will be used for, using information from a number of sources, including ICT
- Develop and explain ideas clearly with design objectives
- Plan, suggesting a sequence of actions or alternatives if needed
- Communicate design ideas in different ways

#### ▪ **Working with tools, equipment, materials and components to make quality products:**

- Select tools, techniques and materials
- Suggest alternative ways of making a product if the first attempt fails
- Measure, mark out, cut and shape materials accurately
- Use finishing techniques to strengthen and improve the appearance of the product, following safe procedures for food safety and hygiene

#### ▪ **Evaluating:**

- Reflect on work in relation to intended use (and users) and identify improvements needed, carrying out appropriate tests first

#### ▪ **Knowledge and understanding of materials and components:**

- Learn how the working characteristics of materials affect the way they are used
- Learn how materials can be combined and mixed to create more useful properties
- Learn how mechanisms can be used to make things move in different ways, using a range of equipment, including ICT control programs
- Learn how electrical circuits, including those with switches, can be used

### Key Skills

#### Developing, Planning and Communicating Ideas

- Can they use a range of information to inform their design?
- Can they use market research to inform plans?
- Can they work within constraints?
- Can they follow and refine their plan if necessary?
- Can they justify their plan to someone else?
- Do they consider culture and society in their designs?

#### Working with tools, equipment, materials and components to make quality products

- Can they use tools and materials precisely?
- Do they change the way they are working if needed?

#### Evaluating Processes and Products

- How well do they test and evaluate their final product?
- Is it fit for purpose?
- What would improve it?
- Would different resources have improved their product?
- Would they need more or different information to make it even better?
- Does their product meet all design criteria?
- Did they consider the use of the product when selecting materials?

#### Textiles

- Do they think what the user would want when choosing textiles?
  - How have they made their product attractive and strong?
  - Can they make up a prototype first?
  - Have they thought about how their product could be sold?
  - Have they given considered thought about what would improve their product even more?
- Develops experience in embellishing, pooling together experiences in texture to complete a piece - applique, drawing, sticking, cutting, paint, weaving, layering etc.
- Applies knowledge of different techniques to express feelings.
- Use found and constructed materials.
- Work collaboratively on a larger scale.

#### Electrical and Mechanical Components

- Can they incorporate a switch into their product?
- Can they refine their product after testing it?
- Can they incorporate hydraulics and pneumatics?
- Can they use different kinds of circuit in their product?
- Can they think of ways in which adding a circuit would improve their product?

#### Stiff and flexible materials and mouldable materials

- Can they justify why they selected specific materials?
- How have they ensured that their work is precise and accurate?
- Can they hide joints so as to improve the look of their product?
- Can they justify why the chosen material was the best for the task?
- Can they justify design in relation to the audience?

