WEST RISE

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At West Rise, we develop designers and makers who find creative solutions to real world problems.

Know how to take risks, becoming resourceful, innovative, enterprising and capable citizens.

Are able to use creativity and imagination.

Understand the impact of design and technology on daily life and the wider world.

West Rise Aims and Purpose		
Intent	Aims	Character Traits
We aim to inspire children through a broad range of practical experiences to create innovative designs which solve real and relevant problems within a variety of different contexts. This repetitive process encourages children to identify real and relevant problems, critically evaluate existing products and then take risks and innovate when designing and creating solutions to the problems. As part of the repeated process, time is built in to reflect, evaluate and improve on prototypes using design criteria throughout to support this process. Opportunities are provided for children to evaluate key events and individuals who have helped shape the world, showing the real impact of design and technology on the wider environment and helping to inspire children to become the next generation of innovators.	• Through revisiting and consolidating skills, the children build on prior knowledge alongside introducing new skills, knowledge and challenge. • The revision and introduction of key vocabulary is built into each lesson. • Through these lessons, we intend to inspire pupils and practitioners to develop a love of Design and Technology and see how it has helped shaped the ever-evolving technological world they live in.	• To show kindness when appreciating each other's work • Developing the perseverance and resilience needed to keep experimenting with artistic skills • Allowing opportunities for enjoyment, fun and free-spiritedness • Work with each other to build on techniques and ideas

National Curriculum

National Curriculum Aims and Purpose

Purpose of Study	Aims	Attainment Targets
Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.	The national curriculum for design and technology aims to ensure that all pupils: • Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world • Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users • Critique, evaluate and test their ideas and products and the work of others • Understand and apply the principles of nutrition and learn how to cook	By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study

Subject Content

Key Stage One
Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

When designing and making, pupils should be taught to:
Design
- Design purposeful, functional, appealing products for themselves and other users based on design criteria
- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make
- Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate
- Explore and evaluate a range of existing products
- Evaluate their ideas and products against design criteria

Key Stage Two
Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

When designing and making, pupils should be taught to:
Design
- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- Generate, develop, model and 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, shaping, joining and 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 in their products [for example, gears, pulleys, cams, levers and linkages]

Technical knowledge • Build structures, exploring how they can be made stronger, stiffer and more stable • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	• Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply their understanding of computing to program, monitor and control their products.
Cooking and Nutrition As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. **Key Stage 1** Pupils should be taught to: • Use the basic principles of a healthy and varied diet to prepare dishes • Understand where food comes from	**Cooking and Nutrition** As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. **Key Stage 2** Pupils should be taught to: • 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

Progression – Knowledge and Skills

Subject Content	Knowledge and Skills			
	Year 3	Year 4	Year 5	Year 6
Design	• Begin to research others' needs • Show design meets a range of requirements • Describe purpose of product • Follow a given design criteria • Have at least one idea about how to create product • Create a plan which shows order, equipment and tools • Describe design using an accurately labelled sketch and words • Make design decisions • Explain how product will work	• Use research for design ideas • Show design meets a range of requirements and is fit for purpose • Begin to create own design criteria • Have at least one idea about how to create product and suggest improvements for design. • Produce a plan and explain it to others • Say how realistic plan is. • Include an annotated sketch • Make and explain design decisions considering availability of resources • Explain how product will work	• Take a user's view into account when designing • Begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose • Create own design criteria • Have a range of ideas • Produce a logical, realistic plan and explain it to others. • Use cross-sectional planning and annotated sketches • Make design decisions considering time and resources. • Clearly explain how parts of product will work. • Model and refine design ideas by making prototypes and using pattern pieces	• Use research of user's individual needs, wants, requirements for design • Identify features of design that will appeal to the intended user • Create own design criteria and specification • Come up with innovative design ideas • Follow and refine a logical plan. • Use annotated sketches, cross-sectional planning and exploded diagrams • Make design decisions, considering, resources and cost • Clearly explain how parts of design will work, and how they are fit for purpose • Independently model and refine design ideas by making prototypes and using pattern pieces
Make	• Select suitable tools/equipment, explain choices; begin to use them accurately • Select appropriate materials, fit for purpose. • Work through plan in order • Consider how good product will be • Begin to measure, mark out, cut and shape materials/components with some accuracy • Begin to assemble, join and combine materials and components with some accuracy • Begin to apply a range of finishing techniques with some accuracy	• Select suitable tools and equipment, explain choices in relation to required techniques and use accurately • Select appropriate materials, fit for purpose; explain choices • Work through plan in order. • Realise if product is going to be good quality • Measure, mark out, cut and shape materials/components with some accuracy • Assemble, join and combine materials and components with some accuracy • Apply a range of finishing techniques with some accuracy	• Use selected tools/equipment with good level of precision • Produce suitable lists of tools, equipment/materials needed • Select appropriate materials, fit for purpose; explain choices, considering functionality • Create and follow detailed step-by-step plan • Explain how product will appeal to an audience • Mainly accurately measure, mark out, cut and shape materials/components • Mainly accurately assemble, join and combine materials/components • Mainly accurately apply a range of finishing techniques • Use techniques that involve a small number of steps • Begin to be resourceful with practical problems	• Use selected tools/equipment with good level of precision • Produce suitable lists of tools, equipment/materials needed • Select appropriate materials, fit for purpose; explain choices, considering functionality • Create and follow detailed step-by-step plan • Explain how product will appeal to an audience • Mainly accurately measure, mark out, cut and shape materials/components • Mainly accurately assemble, join and combine materials/components • Mainly accurately apply a range of finishing techniques • Use techniques that involve a small number of steps • Begin to be resourceful with practical problems

Evaluate				
	• Look at design criteria while designing and making • Use design criteria to evaluate finished product • Say what I would change to make design better • Begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose • Begin to understand by whom, when and where products were designed • Learn about some inventors/designers/ engineers/chefs/ manufacturers of ground breaking products	• Refer to design criteria while designing and making • Use criteria to evaluate product • Begin to explain how I could improve original design • Evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose • Discuss by whom, when and where products were designed • Know about some inventors/designers/ engineers/chefs/manufacturers of ground-breaking products	• Evaluate quality of design while designing and making • Evaluate ideas and finished product against specification, considering purpose and appearance. • Test and evaluate final product • Evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose • Talk about some key inventors/designers/ engineers/ chefs/manufacturers of ground breaking products	• Evaluate quality of design while designing and making • Evaluate ideas and finished product against specification, considering purpose and appearance. • Test and evaluate final product • Evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose • Talk about some key inventors/designers/ engineers/ chefs/manufacturers of groundbreaking products • Evaluate quality of design while designing and making; is it fit for purpose? • Keep checking design is best it can be. • Evaluate ideas and finished product against specification, stating if it's fit for purpose • Test and evaluate final product; explain what would improve it and the effect different resources may have had • Talk about some key inventors/designers/ engineers/ chefs/manufacturers of groundbreaking product

Progression – Vocabulary

Subject Content	Vocabulary			
	Year 3	Year 4	Year 5	Year 6
	Year 3	Year 4	Year 5	Year 6

Progression – Curriculum Links