Pudsey Bolton Royd Primary School Design & Technology Long-Term Plan

Year 5

Autumn 1	*Autumn 2*	*Spring 1*
Enquiry Questions		
Can I knead dough? Can I use the “claw” grip?		
Outcomes		
Design a healthy meal Make a Spanakopita Evaluate my meal		
Linked Texts		
Linked Experiences		
Overview		
Children will be given the opportunity to practice the “claw” grip with a serrated knife (supervised) trying to chop vegetables finely. Children will be able to choose their preferred method a “bridge” or “claw” to cut vegetables. They will learn how to crush garlic and grease a tin ready for pastry. Once the Spanakopita is cooked, children will practice using a fish-slice to remove their piece for tasting. At the end of the session, children will evaluate their meal and discuss what they would do differently next time.		
Knowledge and/or Skills Covered		
Use ‘claw’ grip to cut Use a ‘bridge’ hold to cut vegetables finely. Crushing garlic Greasing the tin Remove from a baking tray using a fish-slice (*supervised*)		
National Curriculum Attainment Targets		
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.		
Important Vocabulary		

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Diet, healthy, vegetables, ingredients, dice, ‘claw grip’, texture.		

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Spring 2	*Summer 1*	*Summer 2*
Enquiry Questions		
Can I make a functional Waterwheel	Can I build a computer programmed robot?	
Outcomes		
Evaluate current water wheel designs and functionality. Design a functional waterwheel Make a functional waterwheel Evaluate each other's products against their design.	Evaluate current robotic products Design a programmable robot Make a programmable robot Evaluate each other's products against their design.	
Linked Texts		
Linked Experiences		
	Cross-curricular with Computing Robotics unit	
Overview		
The children will begin this project by researching the impact of John Smeaton (creator of the first functional water wheel inside mill factories). Children will then go onto assess the design of current waterwheels and use this to design their own functional waterwheel. They will have the opportunity to choose: materials, joining and cutting techniques which will be labelled on their cross-sectional diagrams. Children will work together in groups to create a functional waterwheel, using their design to help their build. Once it is complete, children will test and evaluate their waterwheel as well as evaluating their peers' waterwheels looking for improvements that could be made next time in the design and make process.	Children will begin looking at how robotics has changed, what impact it currently has and what could possibly happen in the future. Children will use this evaluation to aid their design of their own programmable robot. They will spend time, as part of their Computing curriculum, making the robot and programming it. Children will be given the opportunity to test and evaluate their robot against the design whilst looking for improvements and alterations they may choose to make in the future.	
Knowledge and/or Skills Covered		
Plan designs in detail with preliminary studies, with reference to other designs and materials they have studied Make comments about how their product might be altered to appeal to other groups Make an accurate design sketch from someone else's measurements and notes Precision level: consistency within oblique/perspective projections of 3D shapes (*i.e. parallel lines shown parallel or to vanishing points*) Make reasonable suggestions for how their peers might improve their work.	Plan designs in detail with preliminary studies, with reference to other designs and materials they have studied Make comments about how their product might be altered to appeal to other groups Make an accurate design sketch from someone else's measurements and notes Precision level: consistency within oblique/perspective projections of 3D shapes (*i.e. parallel lines shown parallel or to vanishing points*) Make reasonable suggestions for how their peers might improve their work.	

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Request other materials and give reasons Use: Hammer/nails, vice (supervised) Angle to nearest ° Calculate area; start to understand volume Use approximate equivalences between metric and imperial Estimate length, distance, capacity, angle; start to estimate area Use constructive and sensitive language to suggest improvements to their peers' designs	Request other materials and give reasons. Use constructive and sensitive language to suggest improvements to their peers' designs	
National Curriculum Attainment Targets		
Use research and develop design criteria to inform the design of innovative and functional that are fit for purpose. Generate, develop, model and communicate their ideas through cross-sectional and exploded diagrams, prototypes. 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 according to their functional properties and aesthetic qualities. 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. 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].	Use research and develop design criteria to inform the design of innovative and functional that are fit for purpose. Generate, develop, model and communicate their ideas through cross-sectional and exploded diagrams, prototypes and computer-aided design. Select from and use a wider range of materials and components, including construction materials according to their functional properties and aesthetic qualities. 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. 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.	
Important Vocabulary		
Prior, Subsequent, Complex, Sparse, Exceptional, Pulley, Gear, Shape vocab (*incl diagonal, rotation, angle language*)	Contemporary, Enduring, Dominate, Context, Exceptional, Shape vocab (*incl diagonal, rotation, angle language*)	