

Birchwood Primary School - Progression in Design and Technology

	Reception	Year 1	Year 2	Year 3	Year 4	Year
Food and	Fruit Kebabs	Design a sandwich for a	Design fruit ice lollies for the	Fruit chocolates for the	Design and make a pizza	Cup Cake for a Ch
Food and Nutrition	Fruit Kebabs Expressive Art and Design -Use utensils to chop fruit and salad, knives, peeler, scissors. Communication and Language -Follow 2-step instructions. -Ask why questions. -Discuss the process of making a fruit kebab. Physical Development Children can use utensils to chop and salad safely. Personal, Social and Emotional Development -Understand why they need a healthy, balanced diet and can identify more foods which are healthy. -Use knives to chop fruit and salad safely using the bridge technique. Understanding the World -identify some fruits grown in the UK (apples, pears, strawberries) and some from abroad (pineapple, kiwi, banana).	 Design a sandwich for a picnic Designing Explore and evaluate a range of existing sandwiches looking at types of bread and fillings. Generate ideas for a sandwich based on personal preferences (must be made by joining two pieces of bread, must contain a filling inside, must be easy to pick up and eat) Develop, model and communicate their ideas as appropriate through talking, drawing and writing. Making Select and use equipment, skills and techniques, explaining their choices. Select from and use ingredients based on their preferences. Evaluate their sandwich by assessing if it looked appealing, held together well when picked up and tasted nice. 	 Design fruit ice lollies for the Farmer's Market Designing Explore and evaluate a range of existing fruit lollies looking at types of fruit used. Test out different fruits to confirm personal preferences including strawberries picked from the kitchen garden. Generate ideas for a fruit ice lolly based on personal preferences (must include two different fruits) Children can decide if fruit is mixed with yoghurt to change the colour of the yoghurt or if larger whole pieces of fruit are used and how much fruit is used. Develop, model and communicate their ideas as appropriate through talking, drawing and writing. Making Select and use equipment, skills and techniques, explaining their choices. Select from and use ingredients based on their preferences. 	Fruit chocolates for the Farmers Market Designing - Explore and evaluate a range of existing chocolates (Link to Cadburys World trip) and whether there is a gap in the market (fruit chocolates) - Research and test out different fruit and chocolate combinations to find ones that work well together. - Survey people to find out which combinations are most popular. - Generate a chocolate flavour and packaging label to go with it. (flavour must contain one type of chocolate and complementary fruit, label must be aesthetically pleasing and explain what the product is could be produced with CAD) - Develop, model and communicate their ideas as appropriate through talking, drawing and writing. Making -Select and use equipment, skills and techniques, explaining their choices. - Select from and use ingredients based on their designs. Evaluate their chocolates by assessing taste and if it looked appealing.	 Design and make a pizza Designing Explore and evaluate a range of existing pizzas by looking at different toppings. Try different pizza toppings to see which children like and make links to the Eatwell Plate and how they can create a healthy pizza. Design a pizza with a range of toppings (such as peppers, sweetcorn, mushrooms, pineapple, olives, tomatoes, onions, cooked ham, cooked chicken, cooked beef) that looks appealing. Develop, model and communicate their ideas as appropriate through talking, drawing and writing. Making Select and use equipment, skills and techniques, explaining their choices. Select from and use ingredients based on their designs. Evaluate their pizzas by assessing taste and if it looked appealing. 	Cup Cake for a Ch Designing -Explore and taste a ra cupcakes including dif and ways of decoratin packaging. -Develop a design crit the design of products purpose, aimed at a p individuals or a group the cupcake and deco well suited to the indi must be well package -Generate, develop, m communicate realistic discussion and, as app annotated sketches. Making - weigh ingredients or - Mix ingredients toge wooden spoon then a flavours. - Decorate with icing a cooled down. - Create packaging for Evaluate their ideas against their own desi
Structures	Bear Cave Expressive Art and Design -Experiment and build with a range of construction materials. -With support, can use scissors, tape dispenser, stapler, glue stick, etc. -Use a variety of materials and fabric. -Choose resources and tools with a purpose in mind. -Talk about what they like about their models. -Use junk modelling to create a bear cave for the bear in Bear snozes on. Communication and Language -Understand and can respond appropriately to a variety e.g. Why? Do you think? What? - Ask questions to clarify instructions. -Use talk to help them work out problems and possible solutions. Physical Development -Pick up and use a variety of pens, pencils, crayons and paint brushes. -Begin to use pens, pencils and crayons using a tripod grip. -Use pencils to draw. -Begin to transfer skills from other activities to their creative activities.	A New Chair For Baby Bear Designing - Explore a range of existing chair designs commenting on their stability and comfort. - Test out different support for chairs (buttress and wide base) and assessing which are most stable using art straws and cardboard boxes. - Test different joining methods (glue, blue tac, tape) evaluating their effectiveness. - Generate ideas for a chair based on simple design criteria (must stand up on its own and must hold a teddy bear). - Develop, model and communicate their ideas through talking, mock- ups and drawings. Making -Select and use tools, skills and techniques, explaining their choices. - Select new and reclaimed materials to build their structures. -Use simple finishing techniques to decorate their chair. Evaluate their chair by discussing how stable it is, if it supports the teddy bear and its appearance		A bridge for a toy car to cross Designing - Explore and analyse a range of existing bridges evaluating strength and stability. - Test out different joining techniques by comparing the strength of square frameworks with triangular frameworks. - Reinforce square frameworks using diagonals to help develop an understanding of using triangulation to add strength to a structure using art straws or lolly sticks. - Test how paper tubes can be made from rolling sheets of newspaper diagonally. - Use these tubes and masking tape or paper straws with pipe cleaners to build 3-D frameworks such as cubes, cuboids and pyramids. - Explore how each of the frameworks could be reinforced and strengthened. - generate ideas for a bridge design that meets the design criteria (Is able to support a toy car to cross between two tables) - Develop, model and communicate their ideas through talking, mock-ups and drawings. Making - Select and use tools, skills and techniques, explaining their choices. - Select new and reclaimed materials		improvement in their



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Year 6

Burrito bowls Designing

-Explore, research and taste a range of existing Burrito bowl ingredients and combinations including different ways of presenting them.

-Develop a design criterion to inform the design of products that are fit for purpose, aimed at a particular individuals or a group. (The ingredients must be well suited to the individual or group, must contain foods from different areas of the Eatwell plate in order to provide a balanced meal, must be well presented) -Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches.

Making

weigh ingredients on a digital scale.
Cook rice, beans and meat (if using) with adult supervision on the hob
Use bridge and claw cutting techniques to chop and prepare selected vegetables and herbs

- Arrange ingredients carefully in the bowl

Evaluating

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



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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 (must be able to hold chocolates securely, must be clear what the product is, must be aesthetically appealing, -Develop ideas through the analysis of existing shell structures and use computer aided design to model and communicate ideas. -Develop ideas through the analysis of existing shell structures and use computer aided design to model and communicate ideas. -Bit the order of the main stages of making -Bit the order of the main stages of making -Select and use appropriate tools and communicate ideas. -Select and use appropriate tools and software to messave excuracy. -Select and use appropriate tools and software to messave excuracy. -Select and use appropriate tools and software to messave excuracy. -Feat and evaluate thoir own products reading to functional properties and aesthetic qualities. -Very least exclusions if the high are creating. -Very structures and use software to messave excuracy. -Very least exclusions if the high are creating. -Very structures and use software to messave exclusions if the high are creating. -Very structures exclusions if the high are creating. -Very structures				structure, strength, appearance).		
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	BIRCHWOOD
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simple design specification Pir thinking (toy must	
m mechanism which	
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Progres	sion					PRIMA CHWOOD
		 Evaluate their ideas throughout and their products against original criteria. Levers and sliders – A moving picture for a story book Designing Explore a range of existing books and everyday products that use simple sliders and levers. Explore and make mock up sliders and levers to decide which to use in their design Generate ideas based on simple design criteria (must be a moving picture linked to their pirate story, must move easily, must be sturdy) 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. Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria (does picture link to story? does the picture move? is it sturdy?) 	-Select from and use finishing techniques to create their monster toy design. Evaluate their monster toy by discussing if it looks like their mythical monster and does the pneumatic mechanism work to allow the mouth to open and close.	-Evaluate their own products and ideas against criteria and asses if lever and linkage worked and if poster achieved its purpose.	 -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. Evaluating -compare the final product to the original design specification. test products with the 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. Pulleys or Gears – A load pulling vehicle for a STEM Competition Designing -generate ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. develop a simple design specification to guide their thinking (must design a vehicle that can pull a load up hill with choices made on the size and type of wheels used and any additional covers to the chassis) -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 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. 	
Textiles	A Flag for a Carniva Designing - Explore and evaluate a existing flags commentir designs. - Test a range of joining t (running stitch, glue and and evaluate their effect - Generate ideas for a fla a simple design criterion made by joining two piec material, must have a br coloured design) -Develop, model and cor their ideas as appropriat talking, drawing, templa	range of ng on techniques stapling) iveness. ng based on (must be ces of ight nmunicate e through				A mobile phone case Designing -Investigate and analyse a range of textile products linked to their final product. These could include mobile phone cases, pencil cases and purses or wallets. -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. (Must be able to hold a



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	ups and information and communication technology. Making Select and use tools, skills and			
	techniques, explaining their choices.			
	- Select from and use textiles according to their characteristics.			
	Evaluating - Evaluate their flag by assessing if			
	it is securely joined together and if it has a brightly coloured design.			
				
Electrical			Electrical systems – monitoring	
Systems			and control – An Christmas decoration with an LED	
			message Designing	
			-Explore and analyse a range of existing	
			products incorporating LED displays.	
			 Develop a design criterion to inform the design of products that are fit for 	
			purpose, aimed at a particular	
			individuals or a group. (It must contain	
			a message to display) -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. -Create a simple computer control	
			program to display a message	
			Evaluating	
			 Evaluate their ideas and products against their own design criteria and 	
			identify the strengths and areas for	
			improvement in their work.	



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mobile phone, must fasten securely, and
must include a design)
Making
-Produce detailed lists of equipment and
fabrics relevant to their tasks.
-Formulate step-by-step plans.
-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 (Does case
hold phone, fasten securely and include a
design?)
-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
Electrical systems - Monitoring
and control - An invention to
solve a problem at school or
home
Designing
 Look at existing products which
incorporate monitoring and control
systems.
-Decide on own problem to try and
design a solution to.
 Develop a design specification for a
functional product that responds
automatically to changes in the
environment.
-Generate, develop and communicate
ideas through discussion, annotated
sketches and 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 their electrical
product to respond 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.