Design and Technology MTP – Year 3-4 Autumn

Design & Create a Controllable Puppet

National Curriculum	Wk.	NC coverage	Knowledge and Skills	Key Vocab	Activity Outline
To evidence D&T, a **project booklet** needs to be created along with a page in the floorbook designated to place picture evidence of the lessons. 1. Front cover page – Design and Create a Light Up Toy 2. Lesson 1-2 – LO: To explore and evaluate an existing product 3. Lesson 3-4 – LO: To develop a design criteria 4. Lesson 5-6 – LO: To further explore joining techniques 5. Lesson 7-10 – LO: To make my final product 6. Lesson 11 – LO: To evaluate my product 7. Assessment – LO: To answer a questionnaire about sewing joining techniques					
Purpose of study: 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	1-2	• understand how key events and individuals in design and technology have helped shape the world • 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	**Year 3 coverage:** I know why it is important to generate ideas for an item, considering its purpose and the users. **Year 4 coverage:** I know how to identify a purpose and establish criteria for a successful product. I know how to disassemble and evaluate familiar products.	Construction Finishing techniques Model Evaluate Product	LO: To explore and evaluate an existing product **Project booklet and floorbook lesson**  Look at an ancient Roman doll/teddy. Ask, how has this ancient piece help shape the world of toys? What is similar and what is different to teddies and rag dolls now? Why might it be different? Show children various pictures and physical teddies and rag dolls from different eras. Get children to analyse what: • Construction method has been used to join the materials • Finishing techniques have been applied e.g buttons • Materials have been used Get children to discuss what they like and dislike about each product, what elements may they apply to their product? Explain to the children that they're intended user will be for a child of Reception age. Collect suggestions from children in regards to the purpose of the teddy/rag doll to the child? Comfort or for fun and play? How can we find out what a 5 -year -old might want in teddy and rag doll? Encourage children to think about asking children what they like, dislike and appeals to them in a teddy or rag doll.

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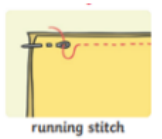
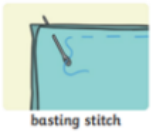
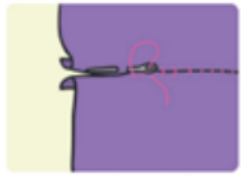
creativity, culture, wealth and well-being of the nation. **Aims** The national curriculum for design and technology aims to ensure that all pupils: • develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly 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. **Key stage 2** 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,		• investigate and analyse a range of existing products			
	3-4	• 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	**Year 3 coverage:** I know why it is important to plan the order of my work before starting. I know why it is important to explore, develop and communicate design proposals by modelling ideas **Year 4 coverage:** I know how to make drawings with labels when designing. I know why it important that my product follows a design criteria and how it can be used to create a product.	Design criteria Intended user Prototype Running stitch Basting stitch Invisible stitch	LO: To develop a design criteria **Project booklet and floorbook lesson** Allow children to develop their own design criteria. Remind them of the importance of it being measurable and not opinionated. Re-discuss the intended purpose (this may vary for each child) and the user. How big are we going to want the teddy/rag doll? Give children the opportunity to create a prototype of their product. Measuring, marking and cutting the body, arms, legs and head of their product. Children to reflect on the size they have chosen. Do they want to adapt it before they design their product? Remind and practise with children the stitches that they already know - running and basting  running stitch  basting stitch Practise on old pieces of fabric, stick this into the project booklet. Explain and model to children that they will learn a new stitch which they can apply to their products – An Invisible Stitch. Ask children why this might be appropriate for their product? How might it improve the aesthetic of their product?  invisible stitch Children to design their products – labelling key techniques, materials, stuffing and finishing elements used.

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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	5-6	• select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	**Year 3 coverage:** I know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. I know how to join and combine materials and components accurately in temporary and permanent ways. **Year 4 coverage:** I know how to sew using a range of stitches, weave and knit. I know how to successfully use scissors to cut and use measuring tape to measure pieces of fabric accurately to make templates.	Joining techniques Invisible stitch Basting stitch Running stitch	LO: To further explore joining techniques **Project booklet and floorbook lesson** Model measuring and pinning materials together. Why would we pin the materials together? How does it help when you come to sew? Recap previous stitches – running and basting. Give children the chance to practise this on scrap material. Model the new stitch – invisible stitch. Explain to children that to do this they need material that will go on the inside of the teddy/rag doll and therefore the sewing will not be seen. Children to practice the invisible stitch on scrap material – circle the room and support where needed. Remind children that it is ok to adapt their plan/design if it improves my work e.g changing the sewing technique used to better suit the appearance of the end product Use the two sessions to ensure that children are confident with the running stitch, basting stitch and invisible stitch. Attach evidence of stitchwork in the project booklet. Useful links: https://www.youtube.com/watch?v=i1-B01FB56s&t=72s&pp=ygUOcnVubmluZyBzdGl0Y2g%3D https://www.youtube.com/watch?v=YsRer8fI8Eo&pp=ygUOYmFzdGluZyBzdGl0Y2g%3D https://www.youtube.com/watch?v=WbE5hXt27uU&pp=ygUQaW52aXNpYmxlIHN0aXRjaA%3D%3D

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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] •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. Pupils should be taught to: • understand and apply the principles of a healthy and varied diet • prepare and cook a variety of	7-10	• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • apply their understanding of computing to program, monitor and control their products. • 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	**Year 3 coverage:** I know how to make drawings with labels when designing. **Year 4 coverage:** I know how to securely join two pieces of fabric together using a range of glue and stitch techniques – basting and running stitch.	Product Design criteria Intended user Purpose	LO: To make my product **Project booklet and floorbook lesson** Remind children of the intended user and purpose. What do we mean by the aesthetic of the product? How can we ensure that appeals to the user? Give children the opportunity to measure, mark out and cut the materials they need for their rag doll/teddy. Remind children of how to use the tools safely during the process of creating their product. Allow children to make their product – support with sewing and using tools where needed. Keep products safe for the children to pick up where they have left of. Ensure that the children are referring to their design criteria throughout the process.
	11	• 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	**Year 3 coverage:** I know how to evaluate products against my original design criteria and identify criteria that can be used for my own design and future products.		LO: To evaluate my product **Project booklet and floorbook lesson** Ask children to reflect back their design criteria – what did they meet, what did they not? Can they identify any reasons as to why they didn't meet certain criterions. Give children the chance to self-evaluate their own product and then go and collect feedback from their group of intended users in

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.		events and individuals in design and technology have helped shape the world	**Year 4 coverage:** I know that to evaluate the effectiveness of my product, I can use the data collected and collate within bar charts.		regard to their appearance etc. What skills were you good at? What skills did you need to develop? How will you improve next time? Evaluation Questionnaire Feedback Analyse Questionnaire Feedback Self-Evaluation – Skills Development
	12 – end	**Assessment** Complete a questionnaire (independently) for sewing joining techniques: **Instructions:** Read each question carefully and circle the correct answer. **1. What is the main purpose of sewing?** a) To draw pictures b) To join fabric pieces together c) To play with fabric d) To measure fabric **2. Which of these is a tool used in sewing?** a) Hammer b) Screwdriver c) Needle d) Pliers **3. What is thread used for in sewing?** a) To cut fabric b) To join fabric pieces c) To paint fabric d) To decorate fabric **4. Which stitch is often used to join two pieces of fabric together?** a) Running stitch b) Nail stitch c) Screw stitch d) Paint stitch **5. What should you do first before you start sewing?** a) Eat lunch b) Wear safety glasses c) Thread the needle d) Cut the fabric **6. Which stitch is best for a strong seam?** a) Backstitch b) Straight stitch c) Slip stitch d) Satin stitch **7. What is a thimble used for in sewing?** a) To cut fabric b) To protect your finger c) To draw patterns d) To measure fabric **8. Which sewing tool helps you keep the fabric pieces in place while you sew?** a) Pins b) Scissors c) Screwdriver d) Pliers			

		9. What do you call the decorative stitches on the edge of a fabric? a) Running stitch b) Embroidery c) Glue d) Backstitch **10. When would you use a sewing machine instead of hand sewing?** - a) When you want to write a letter - b) When you need to join fabric quickly and neatly - c) When you want to read a book - d) When you need to cut fabric **11. What is a seam ripper used for?** - a) To cut fabric - b) To measure fabric - c) To remove stitches - d) To join fabric **12. Which stitch is often used to finish the edge of a fabric to prevent fraying?** - a) Overlock stitch - b) Running stitch - c) Nail stitch - d) Straight stitch **13. What should you always do after finishing a sewing project?** - a) Sing a song - b) Clean up your workspace - c) Eat a snack - d) Tell a joke **14. What is fabric glue used for in sewing?** - a) To decorate fabric - b) To join fabric without sewing - c) To measure fabric - d) To cut fabric **15. Why is it important to use the right type of needle for your fabric?** - a) To make the fabric colorful - b) To avoid damaging the fabric - c) To make the project look pretty - d) To save time