



Design and Technology

Year 6

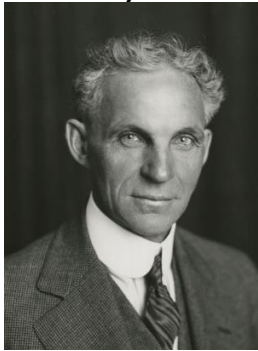


Unit	Textiles 	Mechanisms (Pulleys and/or gears) 	Food and Nutrition 
National curriculum Purpose of Study & Aims	Purpose of study Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems 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 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.		
National Curriculum Key Stage 2	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, 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] • 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 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.		
Title of Unit (Enquiry Question)	How can we design and make a stuffed toy for a younger child? 	Can you design, make and evaluate a functional product that uses at least one pulley to lift, move, or control something? 	Can you adapt a simple bolognese recipe to improve it's nutritional content? 
Theme	Textiles  Combing Fabric Shapes (Stuffed Toy)	Mechanisms  Pulleys (Transport System)	Food and Nutrition  Adapting a Recipe (Bolognese and bread)
Knowledge	Lesson 1 Evaluate and research existing products I can explore existing soft toy designs Lesson 2 Focused practical tasks	Lesson 1 Evaluate and research existing products I understand that products are designed for specific users and purposes I know that pulleys change force and direction.	Lesson 1 Evaluate and research existing products I know that beef comes from cows reared on farms. I know that recipes can be adapted to suit nutritional needs and dietary requirements.

	I know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric. I know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely. Lesson 3 Design own product I understand that it is easier to finish simpler designs to a high standard. I know that soft toys are often made by creating appendages separately and then attaching them to the main body. I know what a template is and what it is used for Lesson 4 Make your own product I understand that it is easier to finish simpler designs to a high standard. I know that soft toys are often made by creating appendages separately and then attaching them to the main body. I know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely. Lesson 5 Evaluate your own product I know how to compare my design to real products and the work of others.	Lesson 2 Design own product I know that I can use annotated diagrams to show where my pulleys will go and how they will be used. I will use set design criteria to guide the creation of my products to ensure it's functional, appealing and fit for purpose. Lesson 3 Focused practical tasks I understand how to strengthen, stiffen and reinforce structures to make them stable. I know how to use and apply the function of pulleys Lesson 4 Make your own product As lesson 3 Lesson 5 Evaluate your own product I understand how to compare and evaluate products against the original design criteria. I know how mechanical systems affect function, and can evaluate the performance of my product accurately	Lesson 2 Focused practical tasks I know that recipes can be adapted to suit nutritional needs and dietary requirements I know how to safely use equipment and utensils Lesson 3 Design own product I know that recipes can be adapted to suit nutritional needs and dietary requirements Lesson 4 Make your own product I can follow my adapted recipe to make my product Lesson 5 Evaluate your own product I can evaluate how effectively my design has met the initial design brief
Skills	Lesson 1 Evaluate and research existing products I can examine products closely, identifying key features and how the different parts are secured.	Lesson 1 Evaluate and research existing products I can investigate & analyse existing products to understand their function, mechanisms and intended users	Lesson 1 Evaluate and research existing products I can explain the farm-to-fork process. I can research existing recipes. I can suggest alternative ingredients

	Lesson 2 Design own product I can cut neatly and accurately. I can thread a needle. I can use a running stitch and blanket stitch to join two pieces of fabric Lesson 3 Design own product I can design a stuffed toy considering the main component shapes required and create an appropriate template and pin this to my fabric I can accurately cut around my template I can consider the proportions of individual components. I can measure, mark and cut fabric accurately and independently. Lesson 4 Make your own product I can assemble my toy using strong and secure blanket stitches when joining fabric. I can thread needles independently. I can use appliqué to attach pieces of fabric. Lesson 5 Evaluate your own product I can test and evaluate an end product and giving points for further improvements.	I can look at examples of different types of pulleys: <i>Fixed pulley, Movable pulley, Pulley systems/blocks looking at real-life examples</i> such as: Flagpoles, Cranes, Blinds, Wells, Theatre curtains. Lesson 2 Design own product I can generate and develop ideas through: annotated sketches, discussion and modelling I can plan the materials, tools and processes that will be needed Lesson 3 Focused practical tasks I can select and use a wider range of tools and equipment accurately (cutting, shaping, joining, finishing). I can choose suitable materials for functional and aesthetic qualities. I can apply safe working practices I can create prototypes and adjusting where necessary. Lesson 4 Make your own product As lesson 3 Lesson 5 Evaluate your own product I can test my pulley and the pulleys of others for reliability, strength and function. I can suggest specific, realistic improvements to refine my product.	Lesson 2 Focused practical tasks I can cut resistant foods like onions safely and accurately. I understand the safety aspects of working with hot food. I can explain how to avoid cross-contamination Lesson 3 Design own product I can suggest alternative ingredients. I can analyse nutritional content. I can write an alternative recipe Lesson 4 Make your own product I can follow a recipe I can use safe food preparation skills I can select the appropriate utensils for each step of the task Lesson 5 Evaluate your own product I can evaluate my final outcome against design criteria I can describe the texture and flavour of ingredients.
Vocabulary	aesthetic joining stitch design criteria evaluation textile fasten	Pulley belt Mechanical system Driver Follower Mesh	Adaptation balanced cross-contamination enhance equipment hygiene

	stuffed toy stuffing shape guide applique	Motor Spindle Crank rotation	components serving Sustainability presentation
Career Links	Fashion Design Engineer / Entrepreneur <i>Fashion Design Engineer</i>  Place: Design studio, fashion houses, manufacturer offices, retailers Qualities: careful, creative, ethical, innovative, attention to detail Qualification: BA (Hons) Fashion Design and Technology	Industrial engineer <i>Industrial/Systems Engineer</i>  Place: manufacturing HQ, logistics operations Qualities: systems thinker, efficient, analytical Qualification: BEng/MEng Industrial/Manufacturing Engineering	Nutritionist <i>Nutritionist</i>  Place: Hospitals, Care facilities, Offices Qualities: good communication, understanding, empathy, positive, motivating Qualification: BSC (Hons) Degree in Nutrition or Bioscience
Designer	Coco Chanel  Fashion entrepreneur	Henry Ford  Engineer Founder of the Ford motor company	Hugh Fearnley-Whittingstall  Nutritionist
Resources	Useful resources at www.designtechnology.org.uk • Designing with textiles • Designer bags • A to Z of D&T • Working with Materials • Butterflies in My Tummy	Useful resources at www.designtechnology.org.uk • Levers and Linkages • Developing Handmade Switches • Handmade Switches Help Sheet • Gears and Pulleys	Useful resources at www.designtechnology.org.uk • Christmas Ginger Biscuits • Willy Wonka's Fair Trade Cookies • Making Bread using the Six Essentials • Are you Teaching Food in Primary D&T? • A to Z of D&T • Make it Safe! Other useful web-based resources: • www.foodafactoflife.org.uk



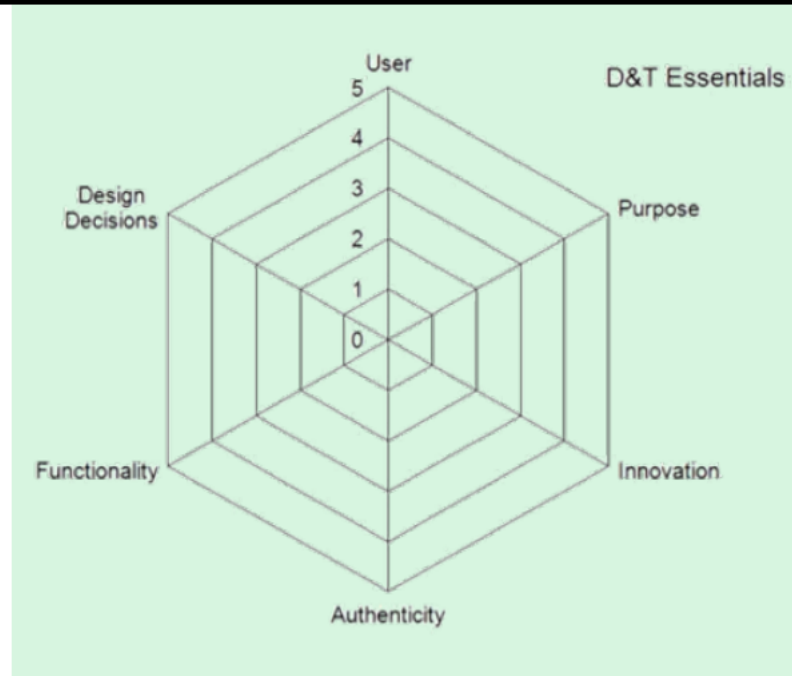
Upper Key Stage 2 - End of Unit Assessment



My Design Criteria

- User:
- Purpose:
-
-
-
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Peer Review of My Design and Final Product

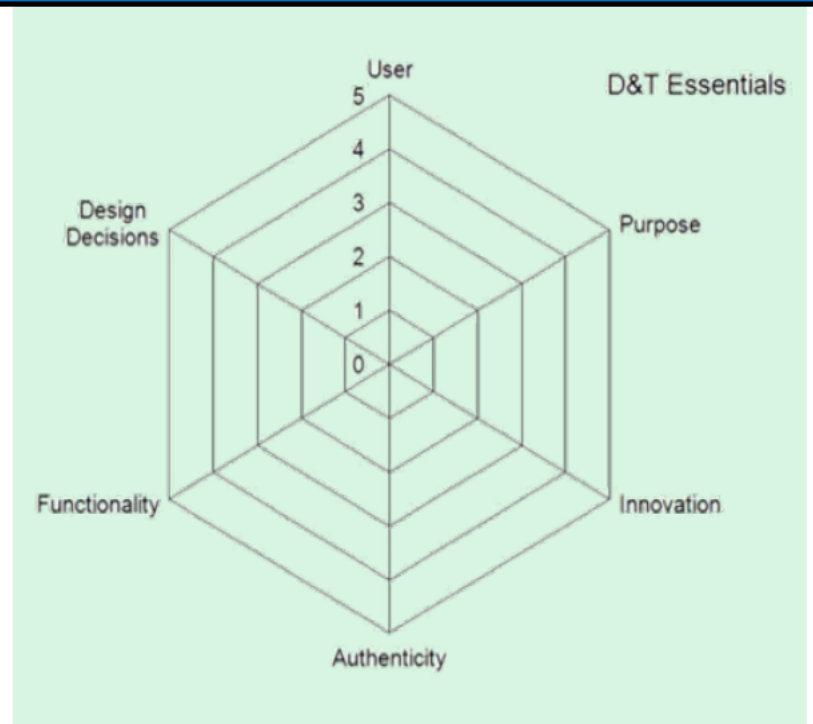


Not Attempted	Beginning	Developing	Competent	Effective	Highly Skilled
0	1	2	3	4	5

Peer Review: Is the Design Criteria Met?

Yes ☐ No ☐ Partly ☐

Self Evaluation of My Design and Final Product



Not Attempted	Beginning	Developing	Competent	Effective	Highly Skilled
0	1	2	3	4	5

Self Evaluation: Is the Design Criteria Met?

Yes ☐ No ☐ Partly ☐

Products and Designs that Inspired my Design / Possible Improvements
