


KS2 DT		Year 4 – Spring – Electrical Systems- Night lights	
Design	Make	Evaluate	
<ul style="list-style-type: none">Develop more than one design or adaptation of an initial design.Plan a sequence of actions to make a product.Record the plan by drawing using annotated sketches.Begin to use cross-sectional and exploded diagrams.Use prototypes to develop and share ideas.Think ahead about the order of their work and decide upon tools and materials.Propose realistic suggestions as to how they can achieve their design ideas.Consider aesthetic qualities of materials chosen.Use CAD where appropriate.	<ul style="list-style-type: none">Prepare pattern pieces as templates for their design.Cut slots.Cut internal shapes.Select from a range of tools for cutting shaping joining and finishing.Use tools with accuracy.Select from techniques for different parts of the process.Select from materials according to their functional properties.Plan the stages of the making process.Use appropriate finishing techniques.	<ul style="list-style-type: none">Investigate similar products to the one to be made to give starting points for a design.Draw/sketch products to help analyse and understand how products are made.Research needs of user.Identify the strengths and weaknesses of their design ideas in relation to purpose/user.Decide which design idea to develop.Consider and explain how the finished product could be improved.Discuss how well the finished product meets the design criteria of the user.Investigate key events and individuals in Design and Technology.	
Key Learning		Vocabulary	Inventor- Lewis Howard Latimer
<ul style="list-style-type: none">Develop vocabulary related to the project.Incorporate a circuit into a model.Use electrical systems such as switches bulbs and buzzers.Use ICT to control products.		<ul style="list-style-type: none">series circuit,fault,connection,toggle switch, push-to-make switch, push-to-break switch,battery, battery holder,bulb, bulb holder,wire,insulator, conductor,crocodile clip,control,program, system,input device, output device	<div></div> <p>Lewis Howard Latimer's inventions include an improved carbon filament for light bulbs, making them last longer, and a water closet for railroad cars</p>
National Curriculum links:			

- 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

Design	Make	Evaluate	Technical knowledge
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 • Understand how key events and individuals in design and technology have helped shape the world 	<ul style="list-style-type: none"> • 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.