



CURRICULUM MAP (Long term plan)

SUBJECT : DT

YEAR GROUP: 6

	Cycle 1 Autumn: LED Torch Project	Cycle 2 Spring: Viking Longships	Cycle 3 Summer: Chinese Inventions
Substantive knowledge – Essential knowledge & conceptual understanding of the National Curriculum	Designing <i>Understanding contexts, users and purposes</i> Working within a context Explain how key features of their product work Discussing the purpose of their product Carry out research <i>Generating, developing, modelling and communicating ideas</i> Discussing ideas Annotated sketches Technical drawings Take account of constraints when designing Making <i>Planning</i> Select tools, materials and components appropriate for the task Justify materials used according to properties Formulate step by step plans <i>Practical skills and techniques</i> Follow health and safety practices Measure, mark out and shape materials with accuracy Assemble & combine materials and apply finishes with accuracy	Designing <i>Understanding contexts, users and purposes</i> Working within a context Explain how key features of their product work Discussing the purpose of their product Carry out research <i>Generating, developing, modelling and communicating ideas</i> Discussing ideas Sketching ideas 3D modelling/prototyping (inc. manikins) Take account of constraints when designing Making <i>Planning</i> Select tools, materials and components appropriate for the task Justify materials used according to properties Formulate step by step plans <i>Practical skills and techniques</i> Follow health and safety practices Measure, mark out and shape materials with accuracy	Designing <i>Understanding contexts, users and purposes</i> Working within a context Explain how key features of their product work Discussing the purpose of their product Carry out research Identify needs of a user Develop a simple specification <i>Generating, developing, modelling and communicating ideas</i> Discussing ideas Annotated sketches that draw on research Take account of constraints when designing Sketch modelling / prototyping Making <i>Planning</i> Select tools, materials and components appropriate for the task Justify materials used according to properties <i>Practical skills and techniques</i> Follow health and safety practices Measure, mark out and shape materials with accuracy

	<p>Use techniques involving a number of steps Demonstrate resourcefulness when tackling the problem</p> <p>Evaluating Own ideas and products Critically evaluate the manufacture of the LED torches to set criteria Peer evaluation of their work</p> <p>Existing products Evaluate existing LED torches to set criteria (inc. sustainability)</p> <p>Key events and individuals The Industrial Revolution</p> <p>Technical Knowledge Making products work Use maths and science learning when manufacturing LED torches Aesthetic and functional properties of materials (MDF) Using electronic circuits and components to create functional products Evaluation of the use of LEDs in modern day products Use DT technical knowledge/vocab in context and correctly</p>	<p>Assemble & combine materials and apply finishes with accuracy Use techniques involving a number of steps Demonstrate resourcefulness when tackling the problem</p> <p>Evaluating Own ideas and products Critically evaluate the manufacture of the Viking longship model to set criteria Peer evaluation of their work</p> <p>Existing products Evaluate the work of Giacometti</p> <p>Key events and individuals Giacometti</p> <p>Technical Knowledge Making products work Use maths learning when manufacturing Viking longship Aesthetic and functional properties of materials (card and aluminium foil) Use DT technical knowledge/vocab in context and correctly</p>	<p>Assemble & combine a range of materials and apply finishes with accuracy Use techniques involving a number of steps Demonstrate resourcefulness when tackling the problem</p> <p>Evaluating Own ideas and products Critically evaluate the manufacture of their kites against specification Peer evaluation of their work</p> <p>Existing products Evaluate ancient Chinese inventions</p> <p>Key events and individuals Key ancient Chinese inventions</p> <p>Technical Knowledge Making products work Use maths and science learning when manufacturing Mechanical systems and components Movement types through mechanical systems and components Aesthetic and functional properties of materials Use DT technical knowledge/vocab in context and correctly</p>
<p>Disciplinary knowledge - what skills are practiced?</p>	<p>Measuring, marking out, cutting, shaping, assembling and finishing material accurately</p> <p>Sketching and annotating ideas</p> <p>Technical drawing</p>	<p>Measuring, marking out, cutting, shaping, assembling and finishing material accurately</p> <p>Sketching and annotating ideas</p> <p>Working to scale and proportion</p>	<p>Measuring, marking out, cutting, shaping, assembling and finishing material accurately</p> <p>Sketching and annotating ideas</p> <p>Working to scale and proportion</p>

	<p>Analysing and evaluating existing products</p> <p>Generating step by step plans that includes technical language</p> <p>How to operate and handle tools and equipment with accuracy</p> <p>How to work safely when in DT</p> <p>Evaluating and testing completed product against set criteria</p>	<p>Model making</p> <p>Analysing and investigating the work of key individuals</p> <p>Generating step by step plans that includes technical language</p> <p>How to operate and handle tools and equipment with accuracy</p> <p>How to work safely when in DT</p> <p>Evaluating and testing completed product against set criteria</p>	<p>Model making / prototyping / sketch modelling</p> <p>Formulating design criteria / specification</p> <p>Testing materials and recording results</p> <p>How to operate and handle tools and equipment with accuracy</p> <p>How to work safely when in DT</p> <p>Evaluating and testing completed product against set criteria</p>
<p>Key questions (What is the learning about?)</p>	<p>Can I understand the health & safety rules in a DT workshop?</p> <p>Can I understand the importance of the Victorian Era on the development of inventions?</p> <p>Can I draw a torch's key parts and understand their purpose?</p> <p>Can I use a simple circuit to make a LED torch?</p> <p>Can I use ACCESSFM to analyse torches?</p> <p>Can I recognise and name basic electronic components?</p> <p>Can I create a range of design ideas for an LED torch?</p>	<p>Can I make my own manikins?</p> <p>Can I sketch manikins in various poses?</p> <p>Can I research Giacometti & analyse his Walking Man II sculpture?</p> <p>Can I create a Giacometti style sculpture?</p> <p>Can I draw a range of Viking / Beowulf research sketches?</p> <p>Can I make a model of a Viking longship?</p> <p>Can I make a Viking warrior sculpture in the style of Giacometti?</p> <p>Can I test and evaluate my Viking longship?</p>	<p>Can I explain how great Chinese inventions affected the world?</p> <p>Can I investigate water-powered machines?</p> <p>Can I build and test prototype kites?</p> <p>Can I design a kite based on design criteria?</p> <p>Can I manufacture my designed kite?</p> <p>Can I test and evaluate my kite?</p> <p>Can I demonstrate the knowledge I have gained from this project?</p>

	<p>Can I mark, shape, cut out and assemble a membrane torch?</p> <p>Can I test and evaluate my membrane torch?</p> <p>Can I demonstrate the knowledge I have gained from the LED torch project?</p>	<p>Can I demonstrate the knowledge I have gained from this project?</p>	
Assessment	<p>Live marking (theory & practical)</p> <p>Verbal feedback in lessons</p> <p>Whole class feedback</p> <p>Peer assessment</p> <p>Completed product assessed</p> <p>EoT assessment</p>	<p>Live marking (theory & practical)</p> <p>Verbal feedback in lessons</p> <p>Whole class feedback</p> <p>Peer assessment</p> <p>Completed product assessed</p> <p>EoT assessment</p>	<p>Live marking (theory & practical)</p> <p>Verbal feedback in lessons</p> <p>Whole class feedback</p> <p>Peer assessment</p> <p>Completed product assessed</p> <p>EoT assessment</p>
Literacy (L), Numeracy (N), Oracy (O) opportunities	<p>Literacy Using subject specific terminology. Written tasks - step by step plans, annotating of ideas and evaluating tasks.</p> <p>Numeracy Measuring and marking out using the metric system. Drawing to scale and proportion</p> <p>Oracy Sharing and discussing ideas with teacher/class/peers Supporting/guiding others</p>	<p>Literacy Using subject specific terminology. Written tasks – evaluating the work of a key individual, step by step plans, annotating of ideas and evaluating tasks. Comprehension task</p> <p>Numeracy Measuring and marking out using the metric system. Model making to scale and proportion Nets/tessellation</p> <p>Oracy Sharing and discussing ideas with teacher/class/peers Supporting/guiding others</p>	<p>Literacy Using subject specific terminology. Written tasks – devising tests, recording results, generating design criteria, step by step plans, annotating of ideas and evaluating tasks.</p> <p>Numeracy Measuring and marking out using the metric system. Measuring time / timekeeping (compass task)</p> <p>Oracy Sharing and discussing ideas with teacher/class/peers Supporting/guiding others</p>
Cross Curricular Opportunities	<p>Maths Measuring and marking out using the metric system Drawing to scale and proportion</p> <p>English</p>	<p>Maths Measuring and making out using the metric system Working to scale and proportion Nets</p>	<p>Maths Measuring and making out using the metric system Measuring time / timekeeping</p> <p>English</p>

	<p>Range of written activities</p> <p>Science Electronic components Electricity Electron flow Conductors and insulators</p> <p>History The Victorians The Industrial Revolution</p> <p>Art Freehand sketching</p>	<p>Patterns/tessellation</p> <p>English Range of written activities Beowulf novel</p> <p>Science Buoyancy / water displacement</p> <p>History Vikings WW2 (Giacometti)</p> <p>Geography Origins of the Vikings Countries visited / conquered by the Vikings</p> <p>Art Giacometti Freehand sketching Sculpture</p>	<p>Range of written activities</p> <p>Science Testing materials for qualities Magnetic north / compasses Material properties Mechanisms/mechanical movement Motion/movement Cogs, gears, pulleys, cams Lift, weight, drag and thrust (kite)</p> <p>History Ancient China Impact of key Chinese inventions</p> <p>Geography China / Asia location Neighbouring countries to China</p>
<p>SMSC / Character/Careers/Cultural Capital (personal development)</p>	<p>Social Teamworking, supporting peers, following rules (within a workshop), mutual respect and tolerance for the views/work/ideas of peers</p> <p>Moral The impact (positive/negative) of the Industrial Revolution? The consequences at the time, now and in the future To develop an awareness of the duty designers have on developing and designing environmentally friendly and sustainable products.</p> <p>Culture Through product analysis and work on the Industrial Revolution pupils can reflect on ingenious products and inventions that have come about as a result of the Industrial Revolution</p>	<p>Social Teamworking, supporting peers, following rules (within a workshop), mutual respect and tolerance for the views/work/ideas of peers</p> <p>Moral The impact of WW2 The impact and legacy of the Vikings Why did the Vikings do what they did? Where they a moral race? How did Viking longships help them accomplish their aims?</p> <p>Culture The inspiration for the Giacometti and who he inspired inspiration Exposure to the inventiveness and mindset of the Vikings Viking names</p>	<p>Social Teamworking, supporting peers, following rules (within a workshop), mutual respect and tolerance for the views/work/ideas of peers</p> <p>Moral The impact on the world by the invention of paper, gunpowder, the compass and printing Use of water and wind as a power source (sustainability) – where do we see these today? Did the ancient Chinese think of renewable energy before the rest of the world? How kites were used for military purposes by the Chinese</p> <p>Spiritual What was ancient China like? The influence of ancient China on the modern world</p>

	<p>Exposure to the inventiveness of mankind</p> <p>Character/Careers Developing key (transferable) characteristics of resilience, problem solving, patience, resourcefulness and being innovative</p>	<p>Character/Careers Developing key (transferable) characteristics of resilience, problem solving, patience, resourcefulness and being innovative</p>	<p>Culture The inventiveness of the ancient Chinese people and how their inventions have continued impacting modern products</p>
Equality and Diversity	<p>Diverse representation used with slides presented to pupils. Project is not gender biased/gender themed (traditionally DT seen as a subject for male pupils) Mutual respect for all modelled by teacher and expected from pupils</p>	<p>Diverse representation used with slides presented to pupils. Project is not gender biased/gender themed (traditionally DT seen as a subject for male pupils) Mutual respect for all modelled by teacher and expected from pupils</p>	<p>Diverse representation used with slides presented to pupils. Project is not gender biased/gender themed (traditionally DT seen as a subject for male pupils) Mutual respect for all modelled by teacher and expected from pupils</p>
Super Curriculum (personal development)	<p>DT Club Links with other STEM subjects Some groups taught by subject specialists</p>	<p>DT Club Links with other STEM subjects Some groups taught by subject specialists</p>	<p>DT Club Links with other STEM subjects Some groups taught by subject specialists</p>