



CURRICULUM MAP (Long term plan)

SUBJECT : Design Technology

YEAR GROUP: 5

	Cycle 1 Autumn: Gumball Dispensing Machine	Cycle 2 Spring: Bridges	Cycle 3 Summer: Shakespeare's Globe
Substantive knowledge – Essential knowledge & conceptual understanding of the National Curriculum	Designing <i>Understanding contexts, users and purposes</i> Working within a context Explain key features of products (e.g. rockets) Designing to a brief, context and for a particular user Discussing the purpose of their product <i>Generating, developing, modelling and communicating ideas</i> Designing to a brief Generate realistic ideas Discussing ideas Annotated sketches Making <i>Planning</i> Select tools, materials and components appropriate for the task Justify materials used according to properties Keep a manufacturing diary <i>Practical skills and techniques</i> Follow health and safety practices Measure, mark out and shape materials (corrugated card) with some accuracy	Designing <i>Understanding contexts, users and purposes</i> Working within a context Explain how bridges work Designing to a brief, context and for a particular user <i>Generating, developing, modelling and communicating ideas</i> Designing to a brief Generate realistic ideas that take account of resources available Prototyping and modelling ideas Discussing ideas 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 (corrugated card) with some accuracy Assemble & combine a range of materials and apply finishes with some accuracy	Designing <i>Understanding contexts, users and purposes</i> Working within a context Develop own design criteria <i>Generating, developing, modelling and communicating ideas</i> Designing to a brief Generate realistic ideas that take account of resources available Prototyping and modelling ideas Discussing ideas Making <i>Planning</i> Select tools, materials and components appropriate for the task Justify materials used according to properties Order stages of manufacturing <i>Practical skills and techniques</i> Follow health and safety practices Measure, mark out and shape a range of materials with some accuracy Assemble & combine materials and apply finishes with some accuracy Evaluating <i>Own ideas and products</i>

	<p>Assemble & combine materials and apply finishes with some accuracy</p> <p>Evaluating Own ideas and products Evaluate completed gumball dispenser machine to set criteria Peer evaluation of their work</p> <p>Existing products Evaluate existing gumball dispensing machines to set criteria</p> <p>Technical Knowledge Making products work Use of mechanical systems to create movement Use maths learning when manufacturing gumball dispenser Aesthetic and functional properties of corrugated card Making a strong and stiff shell structure Use DT technical knowledge/vocab in context and correctly</p>	<p>Evaluating Own ideas and products Identify strengths and areas for development in bridge designs</p> <p>Existing products Evaluate/investigate existing bridges</p> <p>Key events and individuals The impact of bridge design and development on humans</p> <p>Technical Knowledge Making products work Use science and maths learning in bridge designing and manufacturing Combining materials to increase strength and properties Making strong and stiff shell structures Use DT technical knowledge/vocab in context and correctly</p>	<p>Identify strengths and areas for development in ideas for set designs</p> <p>Existing products Discuss key features of existing set designs</p> <p>Key events and individuals Shakespeare</p> <p>Technical Knowledge Making products work Use maths learning when manufacturing Globe model and set design Combining materials to increase strength and properties Making a stiff shell structure Use DT technical knowledge/vocab in context and correctly</p>
<p>Disciplinary knowledge - what skills are practiced?</p>	<p>Measuring, marking out, assembling and finishing material accurately</p> <p>Sketching and annotating ideas</p> <p>Analysing existing products</p> <p>Keeping manufacturing records that includes technical language</p> <p>How to operate and handle tools and equipment with some accuracy</p> <p>How to work safely when in DT</p>	<p>Measuring, marking out, assembling and finishing material accurately</p> <p>Sketching and annotating ideas</p> <p>How to strengthen materials</p> <p>Analysing existing products</p> <p>How to operate and handle tools and equipment with some accuracy</p> <p>How to work safely when in DT</p>	<p>Measuring, marking out, assembling and finishing material accurately</p> <p>Sketching and annotating ideas</p> <p>Sketch modelling</p> <p>How to operate and handle tools and equipment with some accuracy</p> <p>How to work safely when in DT</p> <p>Evaluating and testing completed product against set criteria</p>

	Evaluating and testing completed product against set criteria	Evaluating and testing completed product against set criteria	
Key questions (What is the learning about?)	Can I manufacture an air powered rocket? Can I understand DT health & safety practices? Can I analyse existing products? Can I create design ideas for my gumball dispenser? Can I measure and mark out gumball dispenser pieces accurately? Can I cut out and shape my gumball dispenser pieces accurately? Can I assemble my gumball dispenser accurately? Can I test and evaluate my completed product?	Can I create free standing and stable structures? Can I make a model to show a triangle's strength? Can I explore ways in which pillars and beams are used to span gaps? Can I explore ways in which trusses can be used to strengthen bridges? Can I explore ways in which arches are used to strengthen bridges? Can I understand how suspension bridges are able to span long distances? Can I develop criteria and design a prototype bridge for a purpose? Can I analyse and evaluate products according to design criteria? Can I demonstrate the knowledge I have gained for this project?	Can I recognise key areas of the Globe Theatre? Can I understand the setting for Shakespeare's The Tempest? Can I create a model of Shakespeare's Globe? Can I create a model of the Globe's stage? Can I generate set design ideas for The Tempest? Can I make set design models?
Assessment	Live marking (theory & practical) Verbal feedback in lessons Whole class feedback Completed product assessed EoT assessment	Live marking (theory & practical) Verbal feedback in lessons Whole class feedback Completed product assessed EoT assessment	Live marking (theory & practical) Verbal feedback in lessons Whole class feedback Completed product assessed EoT assessment
Literacy (L), Numeracy (N), Oracy (O) opportunities	Literacy Using subject specific terminology.	Literacy Using subject specific terminology. Completing analysis, annotating of ideas and evaluating tasks.	Literacy Using subject specific terminology. Annotating of ideas and evaluating tasks.

	<p>Completing analysis, a manufacturing diary, annotating of ideas and evaluating tasks.</p> <p>Numeracy Measuring and making out using the metric system.</p> <p>Oracy Sharing and discussing ideas with teacher/class/peers Supporting/guiding others</p>	<p>Numeracy Measuring and making out using the metric system. Weight Designing to scale</p> <p>Oracy Sharing and discussing ideas with teacher/class/peers Supporting/guiding others</p>	<p>Numeracy Measuring and making out using the metric system.</p> <p>Oracy Sharing and discussing ideas with teacher/class/peers Supporting/guiding others</p>
Cross Curricular Opportunities	<p>Maths Measuring and making out using the metric system</p> <p>English Range of written activities Acronyms</p> <p>Science Making an air powered rocket – the key elements of rocket design</p> <p>Art Freehand sketching</p>	<p>Maths Measuring and making out using the metric system Weight (grams) Scale</p> <p>English Range of written activities</p> <p>Science The strength of triangles and arches Compression/tension Modern construction materials Material properties Effects of gravity on bridge design</p> <p>History Development of bridges through time e.g. from Roman / Greek time</p> <p>Art Freehand sketching</p>	<p>Maths Measuring and making out using the metric system</p> <p>English The Tempest play Discussion on Shakespeare</p> <p>History Elizabethan era</p> <p>Art Freehand sketching</p>
SMSC / Character/Careers/Cultural Capital (personal development)	<p>Social Teamworking, supporting peers, following rules (within a workshop), mutual respect and tolerance for the views/work/ideas of peers</p> <p>Culture</p>	<p>Social Teamworking, supporting peers, following rules (within a workshop), mutual respect and tolerance for the views/work/ideas of peers</p> <p>Culture Reflect on ingenious inventions (bridges), the diversity of materials</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 treatment/classing of different people (according to</p>

	<p>Through product analysis pupils can reflect on ingenious products and inventions 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>and ways in which engineering can improve the quality of life. 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>class/wealth/status) that visited The Globe during Shakespeare's time</p> <p>Culture The cultural impact of Shakespeare and the Elizabethan era</p> <p>Character/Careers Developing key (transferable) characteristics of resilience, problem solving, patience, resourcefulness and being innovative</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>Cadbury's World Trip Links with other STEM subjects Some groups taught by subject specialists</p>	<p>Links with other STEM subjects Some groups taught by subject specialists</p>	<p>Links with other STEM subjects Some groups taught by subject specialists</p>