Thomas Bullock Curriculum Map for Design and Technology

	Unit 1		Unit 2		Unit 3	
EYFS Nursery	<u>Mechanisms: Music Maker (N.1)</u> **Skills** • opportunity to use dexterity and fine motor skills to place beads into a jar. • reference colours. **Designing Knowledge** • begin to think of some ideas of their own. • begin to explain what they want to do. **Making Knowledge** • Pupils can use a range of tools to make something. **Evaluating Knowledge** • explore existing products. • talk about how something works. • may use words such as: like, don't like, better, worse Future Learning: R.6, 1.3, 4.1,6.3 Links: English: Colour Monster goes to school	<u>Textiles: Bead threading (N.2)</u> **Skills** • have access to different fabrics during role-play • threading toys to enhance their fine motor skills. • Using the beginning skills of textiles to thread beads onto strings to make jewellery and link to concept of Diwali. **Designing Knowledge** • begin to think of some ideas of their own. • begin to explain what they want to do. **Making Knowledge** • Pupils can use a range of tools to make something. **Evaluating Knowledge** • explore existing products. • talk about how something works. • may use words such as: like, don't like, better, worse Future Learning: R.4, 2.2, 4.2, 5.3 Links: Understanding the world: Diwali	<u>Construction: Salt-dough fish (N.3)</u> **Skills** • have the opportunity to mould dough into a shape using rolling, cutting, moulding. • Talk about what they are making. **Designing Knowledge** • begin to think of some ideas of their own. • begin to explain what they want to do. **Making Knowledge** • Pupils can use a range of tools to make something. **Evaluating Knowledge** • explore existing products. • talk about how something works. • may use words such as: like, don't like, better, worse Future Learning: R.2, 1.2, 2.1, 3.1, 6.1 Links: Understanding the world: Sea life	<u>Structure: Easter nests (N.4)</u> **Skills** • have the opportunity to talk about the purpose of what they are making, layering to make it effective, and adding warmth to talk about outdoor living environments **Designing Knowledge** • begin to think of some ideas of their own. • begin to explain what they want to do. **Making Knowledge** • Pupils can use a range of tools to make something. **Evaluating Knowledge** • explore existing products. • talk about how something works. • may use words such as: like, don't like, better, worse Future Learning: R.1, 2.3, 3.3, 5.1, 6.2 Links: Understanding the world: Celebrations	<u>Food and Nutrition Fruit salad (N.5)</u> **Skills** • Pupils have the opportunity to learn about different fruits and their names and colours. • talk about washing hands and staying safe using equipment. **Designing Knowledge** • begin to think of some ideas of their own. • begin to explain what they want to do. **Making Knowledge** • Pupils can use a range of tools to make something. **Evaluating Knowledge** • explore existing products. • talk about how something works. • may use words such as: like, don't like, better, worse Future Learning: R.5, 1.3, 3.2, 4.3, 5.2 Links: English: Oliver's fruit salad	<u>Construction: Junk model beanstalk (N.6)</u> **Skills** • Pupils have the opportunity to build on skills from previous construction using junk modelling. **Designing Knowledge** • begin to think of some ideas of their own. • begin to explain what they want to do. **Making Knowledge** • Pupils can use a range of tools to make something. **Evaluating Knowledge** • explore existing products. • talk about how something works. • may use words such as: like, don't like, better, worse Future Learning: R.2, 1.2, 2.1, 6.1 Links: English: Jack and the beanstalk

EYFS Reception	Structures: Den building (R.1)	Construction: Salt dough diva lamps (R.2)	Structures: Junk model rocket (R.3)	Textiles: Rainbow fish (R.4)	Food and nutrition: Salad and soup (R.5)	Mechanisms: Shadow animal puppets (R.6)
	Skills • have the opportunity to talk about the purpose of what they are making and how to make it effective for purpose by adding warmth, shelter and to talk about living outdoors. • Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park **Designing Knowledge** • can think of some ideas of their own. • can explain what they want to do. • can use pictures to plan. • can use words and annotations to plan. **Making Knowledge** • can explain what they are making. • can select from a range of tools. • can explain which tools they are using. **Evaluating Knowledge** • can explore existing products. • can describe how something works. • can talk about their own completed work. • can evaluate their own work Prior Learning: N.4 Future Learning: R.4, 2.3, 3.3, 5.1, 6.2	**Skills** • Pupils have the opportunity to mould dough into a shape using rolling, cutting, moulding. • Talk about what they are making. **Designing Knowledge** • can think of some ideas of their own. • can explain what they want to do. • can use pictures to plan. • can use words and annotations to plan. **Making Knowledge** • can explain what they are making. • can select from a range of tools. • can explain which tools they are using. **Evaluating Knowledge** • can explore existing products. • can describe how something works. • can talk about their own completed work. • can evaluate their own work Prior Learning: N.3, N.6 Future Learning: 1.2, 2.1, 3.1, 6.1 Links: Understanding the world: Celebrations, Diwali	**Skills** • opportunity to talk about the purpose of what they are making, joining aspects of recyclable materials. • Create collaboratively, sharing ideas, resources and skills **Designing Knowledge** • can think of some ideas of their own. • can explain what they want to do. • can use pictures to plan. • can use words and annotations to plan. **Making Knowledge** • can explain what they are making. • can select from a range of tools. • can explain which tools they are using. **Evaluating Knowledge** • can explore existing products. • can describe how something works. • can talk about their own completed work. • can evaluate their own work Prior Learning: N.4, R.1 Future Learning: 2.3, 3.3, 5.1,, 6.2 Links: Understanding the world: Space	**Skills** • have access to different fabrics during role-play and used them to imagine different characters. • threading toys to enhance their fine motor skills. • Using the beginning skills of textiles to thread items onto string/ wool. **Designing Knowledge** • can think of some ideas of their own. • can explain what they want to do. • can use pictures to plan. • can use words and annotations to plan. **Making Knowledge** • can explain what they are making. • can select from a range of tools. • can explain which tools they are using. **Evaluating Knowledge** • can explore existing products. • can describe how something works. • can talk about their own completed work. • can evaluate their own work Prior Learning: N.2 Future Learning: 2.2, 4.2, 5.3 Links: English: The Rainbow Fish. Understanding world: Sea life	**Skills** • opportunity to learn about different vegetables and their names and colours. • talk about washing hands and staying safe using equipment. **Designing Knowledge** • can think of some ideas of their own. • can explain what they want to do. • can use pictures to plan. • can use words and annotations to plan. **Making Knowledge** • can explain what they are making. • can select from a range of tools. • can explain which tools they are using. **Evaluating Knowledge** • can explore existing products. • can describe how something works. • can talk about their own completed work. • can evaluate their own work Prior Learning: N.5 Future Learning: 1.3, 3.2, 4.3, 5.2 Links: English: Oliver's vegetables	**Skills** • opportunity to cut and join pieces together for a desired purpose and discuss how the movement comes from the individual. • explain how puppets will move based on the way they choose, slow, quick fast, jump etc. **Designing Knowledge** • can think of some ideas of their own. • can explain what they want to do. • can use pictures to plan. • can use words and annotations to plan. **Making Knowledge** • can explain what they are making. • can select from a range of tools. • can explain which tools they are using. **Evaluating Knowledge** • can explore existing products. • can describe how something works. • can talk about their own completed work. • can evaluate their own work Prior Learning: N.1 Future Learning: 1.3, 4.1, 6.3 Links: English: 3 Billy goats, tortoise and hare

Year 1	Construction: Toy cars: (1.1) **Skills** • Explain how to construct a product • Select appropriate resources and tools • Make simple plans before making a model **Designing Knowledge** • Think of some ideas independently • Explain thought processes • Use images, words and annotations to plan **Making Knowledge** • Explain what they are making • Select from a range of tools • Explain tools being used **Evaluating Knowledge** • Explore existing products • Describe how something works • Talk about completed works • Evaluate against a plan Prior Learning: N.3, N.6, R.2 Future Learning: 2.1, 3.1, 5.1, 6.1 Links: Y1 Science 'Toys'	Cooking and Nutrition: Bread (1.2) **Skills** • Cut foods safely • Describe textures of food • Know how to wash hands and ensure surfaces are clean • Explain hygiene • Think of interesting ways to present food. **Designing Knowledge** • Think of some ideas independently • Explain thought processes • Use images, words and annotations to plan **Making Knowledge** • Explain what they are making • Select from a range of tools • Explain tools being used **Evaluating Knowledge** • Explore existing products • Describe how something works • Talk about completed works • Evaluate against a plan Prior Learning: N.4, R.4 Future Learning: 3.2, 4.2, 5.2	Mechanisms: Moving flower picture **Skills** • Make a product that moves • Cut materials using scissors safely • Describe materials • Explain moving parts • Design a product **Designing Knowledge** • Think of some ideas independently • Explain thought processes • Use images, words and annotations to plan **Making Knowledge** • Explain what they are making • Select from a range of tools • Explain tools being used **Evaluating Knowledge** • Explore existing products • Describe how something works • Talk about completed works • Evaluate against a plan Prior Learning: N.1, R.6 Future Learning: 4.1, 6.3 Links: Y1 Science 'Plants'
Year 2	Construction: Crowns (2.1) **Skills** • Makes sensible choices for materials fit for purpose • Develop ideas from initial stimulus • Consider how to make products appealing to others and the role • Measure materials • Join materials **Designing Knowledge** • Design purposeful, functional and appealing products • Create designs and plan what to do next • Describe designs using pictures, diagrams, models and annotations. **Making Knowledge** • Join works together in varying ways • Choose tools best for specific purpose • Use tools and equipment with care and safety **Evaluating Knowledge** • Explore existing products	Textiles: Animals hand/finger puppets (2.2) **Skills** • Measure materials • Cut materials • Join textiles together by sewing • Explain choices of textile • Add embellishments to a product **Designing Knowledge** • Design purposeful, functional and appealing products • Create designs and plan what to do next • Describe designs using pictures, diagrams, models and annotations. **Making Knowledge** • Join works together in varying ways • Choose tools best for specific purpose • Use tools and equipment with care and safety **Evaluating Knowledge** • Explore existing products • Evaluate against initial design • Explain what went well • Explain how they could improve	Structures: Plant pots (2.3) **Skills** • Develop ideas from an initial stimulus • Consider how to make models appealing and fit for purpose • Construct using differing materials and comparing them • Make structures stronger **Designing Knowledge** • Design purposeful, functional and appealing products • Create designs and plan what to do next • Describe designs using pictures, diagrams, models and annotations. **Making Knowledge** • Join works together in varying ways • Choose tools best for specific purpose • Use tools and equipment with care and safety **Evaluating Knowledge** • Explore existing products • Evaluate against initial design • Explain what went well

	• Evaluate against initial design • Explain what went well • Explain how they could improve Prior Learning: 1.1 Future Learning: 3.1, 5.1, 6.1 Links: Y2 History 'Kings and Queens'	Future Learning: 4.2, 5.3 Links: Y2 Science 'Living Things and Habitats'	• Explain how they could improve Future Learning: 3.3, 6.2 Links: Y2 Science 'Plants and Growth'
Year 3	<u>Construction: Model skeleton (3.1)</u> **Skills** • Explore and review a range of real-life sculptures • Join materials effectively • Understand the impact of adding shapes to structures • Apply understanding on how to strengthen, stiffen and reinforce more complex structures **Designing Knowledge** • Show that a design meets a range of requirements. • Put together a step-by-step plan which shows a process to follow • Outline the equipment and tools needed as part of a planning process. • Describe design with accurate labels and prototypes. • Create designs which are realistic and those that are able to follow. **Making Knowledge** • Select from and use a wider range of tools and equipment to perform practical tasks. • Select from a wide range of materials and component according to their functional properties and aesthetic qualities. • Use equipment and tools accurately. **Evaluating Knowledge** • Use research to inform the design of a product which meets a design brief. • Investigate and analyse a range of existing life products. • Evaluate ideas and products against a design criterion; considering the views of others to improve • Explain why changes are made and making a product even better. Prior Learning: 1.1, 2.1	<u>Cooking and Nutrition: Pizza (3.2)</u> **Skills** • Understand and apply principles of a healthy and varied diet • Prepare and cook a savory dish • Know where and how some ingredients are grown • Understand the idea of seasonality and what is meant by airmiles. • Choose the right ingredients for a product. • Make food look attractive • Known what to do be hygienic and safe when preparing food products • Describe how combined ingredients come together into a final product. **Designing Knowledge** • Show that a design meets a range of requirements. • Put together a step-by-step plan which shows a process to follow • Outline the equipment and tools needed as part of a planning process. • Describe design with accurate labels and prototypes. • Create designs which are realistic and those that are able to follow. **Making Knowledge** • Select from and use a wider range of tools and equipment to perform practical tasks. • Select from a wide range of materials and component according to their functional properties and aesthetic qualities. • Use equipment and tools accurately. **Evaluating Knowledge** • Use research to inform the design of a product which meets a design brief. • Investigate and analyse a range of existing life products. • Evaluate ideas and products against a design criterion; considering the views of others to improve • Explain why changes are made and making a product even better.	<u>Structures: Greenhouses (3.3)</u> **Skills** • Understand how key events and individuals in design and technology have helped shape the world • Know which materials are most suitable for creating shell structures • Explain the pros and cons for choosing certain materials for a structure • Join materials effectively • Understand the impact of adding shapes to structures • Apply understanding of how to strengthen, stiffen and reinforce more complex structurers. • Produce a structure that will be used for a real-life purpose. • Use finishing techniques to ensure structures are aesthetically pleasing **Designing Knowledge** • Show that a design meets a range of requirements. • Put together a step-by-step plan which shows a process to follow • Outline the equipment and tools needed as part of a planning process. • Describe design with accurate labels and prototypes. • Create designs which are realistic and those that are able to follow. **Making Knowledge** • Select from and use a wider range of tools and equipment to perform practical tasks. • Select from a wide range of materials and component according to their functional properties and aesthetic qualities. • Use equipment and tools accurately. **Evaluating Knowledge** • Use research to inform the design of a product which meets a design brief. • Investigate and analyse a range of existing life products. • Evaluate ideas and products against a design criterion; considering the views of others to improve

	Future Learning: 5.1, 6.1 Links: Y3 Science 'Skeletons and muscles'	Prior Learning: 1.2 Future Learning: 4.3, 5.2 Links: Y3 Geography 'Europe' Italy	• Explain why changes are made and making a product even better. Prior Learning: 2.1 Future Learning: 6.2 Links: Y3 Science 'Plants: Survival'
Year 4	<u>Mechanisms: Catapults (4.1)</u> **Skills** • Understand the difference between a lever and linkage • Know how mechanical systems such as levers and linkages or pneumatics systems create movement • Accurately make cuts • Measure carefully so as to make sure of no mistakes • Join materials together in a way which still allows them to move • Identify a pivot point • Use finishing techniques which show an awareness of audience **Designing Knowledge** • Add ideas to initial design criteria • Design a purposeful, functional and appealing products based on a design criterion • Consider the ideas of others when designing • Generate, develop, model and communicate their ideas through discussions and annotated sketches • Explain tool and material choices with plans Create more than one design before choosing a favourite • Suggest some improvement for a plan and implement before the making stage **Making Knowledge** • Pause during the make process and decide whether a finished product is going to be good quality • Show a good level of expertise when using a range of tools and equipment • Select from and use a wider range of tools and equipment to perform practical tasks • Select from and use a wider range of materials and textiles according to their functional properties and aesthetic qualities. • Continue working on a product even when original ideas may not have worked. **Evaluating Knowledge** • Use research as a way to gather ideas about	<u>Textiles: Native American headdresses (4.2)</u> **Skills** • Join textiles in different ways • Explain how textiles can be joined in different ways • Select textiles for both appearance and their properties • Think about what the user would want when they are selecting textiles • Think carefully about how to make their textile product strong and functional • Ability to devise and use a simple template. **Designing Knowledge** • Add ideas to initial design criteria • Design a purposeful, functional and appealing products based on a design criterion • Consider the ideas of others when designing • Generate, develop, model and communicate their ideas through discussions and annotated sketches • Explain tool and material choices with plans Create more than one design before choosing a favourite • Suggest some improvement for a plan and implement before the making stage **Making Knowledge** • Pause during the make process and decide whether a finished product is going to be good quality • Show a good level of expertise when using a range of tools and equipment • Select from and use a wider range of tools and equipment to perform practical tasks • Select from and use a wider range of materials and textiles according to their functional properties and aesthetic qualities. • Continue working on a product even when original ideas may not have worked. **Evaluating Knowledge** • Use research as a way to gather ideas about existing products that are fit purpose • Investigate and analyse a range of existing products • Evaluate a product against a design brief; taking into consideration both appearance and the way it works.	<u>Cooking and nutrition: Corn bread (4.3)</u> **Skills** • Understand and apply the principles of a healthy and varied diet. • Prepare and cook a savory dish • Know where and how some ingredients are grown. • Choose the right ingredients for a product. • Know what to do to be hygienic and safe when preparing food products • Describe how ingredients have been combined together to create a final product • Discuss ways on how to improve a product • Experiment and change designs of a product to become more appealing in appearance and taste. **Designing Knowledge** • Add ideas to initial design criteria • Design a purposeful, functional and appealing products based on a design criterion • Consider the ideas of others when designing • Generate, develop, model and communicate their ideas through discussions and annotated sketches • Explain tool and material choices with plans Create more than one design before choosing a favourite • Suggest some improvement for a plan and implement before the making stage **Making Knowledge** • Pause during the make process and decide whether a finished product is going to be good quality • Show a good level of expertise when using a range of tools and equipment • Select from and use a wider range of tools and equipment to perform practical tasks • Select from and use a wider range of materials and textiles according to their functional properties and aesthetic qualities. • Continue working on a product even when original ideas may not have worked. **Evaluating Knowledge** • Use research as a way to gather ideas about existing products that are fit purpose

	existing products that are fit purpose • Investigate and analyse a range of existing products • Evaluate a product against a design brief; taking into consideration both appearance and the way it works. • Evaluate ideas and products against design criterion and consider the views of others to improve a product. Prior Learning: 1.1 Future Learning: 6.3 Links: Y4 History 'Roman Britain'	• Evaluate ideas and products against design criterion and consider the views of others to improve a product. Prior Learning: 2.2 Future Learning: 5.3 Links: Y4 Geography 'Amazon: Rivers and Rainforests	• Investigate and analyse a range of existing products • Evaluate a product against a design brief; taking into consideration both appearance and the way it works. • Evaluate ideas and products against design criterion and consider the views of others to improve a product. Prior Learning: 1.2, 3.2 Future Learning: 5.2 Links: Y4 Geography 'The USA'
Year 5	<u>Construction: Viking long boats (5.1)</u> **Skills** • Make accurate measurements that are precise • Design and make a structure which provides protection • Design and make a structure which can be worn by the user. • Apply understanding of how to strengthen, stiffen and reinforce more complex structures • Ensure a product in strong, sturdy and fit for intended purpose • Understand how key events and individuals in design and technology have helped shape the world. **Designing Knowledge** • Generate design criterion and brief. • Design purposeful, functional and appealing products for themselves and others based on design criterion. • Develop a range of ideas and designs after collecting information from existing products. • Take on users view and the result of questionnaires into account when designing. • Explain how a product appeals to a target audience. • Produce detailed step-by-step plans which highlight areas where the make process may be more difficult. • Design using annotated sketches and cross-sectional planning • Design more than one product and explain the positives and drawbacks before selecting a final design. • Provide thought towards how to check if a design is successful during works.	<u>Cooking and Nutrition: Asian Cuisine (5.2)</u> **Skills** • Describe how to be both safe and hygienic when preparing food. • Pupils now where a variety of ingredients come from. • Pupils know where a variety of bread types originate from (milk bread, naan bread, chapati) • Select from a wider range of ingredients accord to their functional qualities. • Explain how ingredients have changed from beginning of the make process to their final product. • Secure understanding of seasonality and airmiles • Explain how products should be stored • Present final products in an interesting and appealing manner. • Discuss a culture of ingredients and why these ingredients may be used in certain areas of the world. **Designing Knowledge** • Generate design criterion and brief. • Design purposeful, functional and appealing products for themselves and others based on design criterion. • Develop a range of ideas and designs after collecting information from existing products. • Take on users view and the result of questionnaires into account when designing. • Explain how a product appeals to a target audience. • Produce detailed step-by-step plans which highlight areas where the make process may be more difficult. • Design using annotated sketches and cross-sectional planning • Design more than one product and explain the positives and drawbacks before selecting a final design. • Provide thought towards how to check if a design is	<u>Textiles: Tie-dye bags (5.3)</u> **Skills** • Choose textiles appropriately for user want/need • Make a textiles product attractive, strong and functional • Know that a 3D textiles product can be made from a combination of fabric shapes • Measure and cut multiple pieces of textiles accurately. • Make a prototype • Join multiple pieces of textiles using a range of joining techniques • Create a product which can be worn • Consider how a product could be sold. **Designing Knowledge** • Generate design criterion and brief. • Design purposeful, functional and appealing products for themselves and others based on design criterion. • Develop a range of ideas and designs after collecting information from existing products. • Take on users view and the result of questionnaires into account when designing. • Explain how a product appeals to a target audience. • Produce detailed step-by-step plans which highlight areas where the make process may be more difficult. • Design using annotated sketches and cross-sectional planning • Design more than one product and explain the positives and drawbacks before selecting a final design. • Provide thought towards how to check if a design is successful during works. **Making Knowledge** • Select from a wider range of tools and equipment to perform practical tasks accurately

	Making Knowledge • Select from a wider range of tools and equipment to perform practical tasks accurately and expertly. • Select from and use a wider range of materials and components according to their functional properties and aesthetic qualities. • Pause at different stages throughout the make process to decide and explain whether their product is going to be good quality • Adapt plans if necessary during the make process and explain why these adaptations are necessary Persevere through different stages of the making process **Evaluating Knowledge** • Use research as a way to gather ideas about existing products that are fit or not fit for purpose • Listen and incorporate others' evaluations of existing products. • Evaluate designs against the design brief • Consider views of others on how to improve and suggest how works can be improved • Effectively evaluate appearance and functions against the original criteria • Explain what was difficult during the process and why Prior Learning: 1,1, 2.1, 3.1 Future Learning: 6.1 Links: Y5 History 'Vikings'	successful during works. **Making Knowledge** • Select from a wider range of tools and equipment to perform practical tasks accurately and expertly. • Select from and use a wider range of materials and components according to their functional properties and aesthetic qualities. • Pause at different stages throughout the make process to decide and explain whether their product is going to be good quality • Adapt plans if necessary during the make process and explain why these adaptations are necessary Persevere through different stages of the making process **Evaluating Knowledge** • Use research as a way to gather ideas about existing products that are fit or not fit for purpose • Listen and incorporate others' evaluations of existing products. • Evaluate designs against the design brief • Consider views of others on how to improve and suggest how works can be improved • Effectively evaluate appearance and functions against the original criteria • Explain what was difficult during the process and why Prior Learning: 1.2, 3.2, 4.3 Links: Y5 Geography 'Asia: Volcanoes & Earthquakes'	and expertly. • Select from and use a wider range of materials and components according to their functional properties and aesthetic qualities. • Pause at different stages throughout the make process to decide and explain whether their product is going to be good quality • Adapt plans if necessary during the make process and explain why these adaptations are necessary Persevere through different stages of the making process **Evaluating Knowledge** • Use research as a way to gather ideas about existing products that are fit or not fit for purpose • Listen and incorporate others' evaluations of existing products. • Evaluate designs against the design brief • Consider views of others on how to improve and suggest how works can be improved • Effectively evaluate appearance and functions against the original criteria • Explain what was difficult during the process and why Prior Learning: 4.1 Links: Y5 History 'Baghdad and the Middle East'

Year 6	<u>Construction: Flood Proof house (6.1)</u> **Skills** • Justify selected specific materials • Ensure that work is precise and accurate • Hide joints as to improve the look of a product • Use knowledge of structures to reinforce and strengthen a 3D framework. • Justify design in relation to the audience. **Designing Knowledge** • Use a range of information to inform their design • Use market research to inform their design • Develop ideas whilst working with constraints such as time, resources and costs. • Follow and refine a plan if necessary • Justify and explain a plan to others • Use annotated sketches, cross sectional planning and diagrams. • Model and refine design ideas by making prototypes and using pattern pieces through computer aided designs. **Making Knowledge** • Use selected tools and equipment precisely and expertly • Accurately measure, mark out, cut and shape materials and components • Accurately assemble, join and combine materials and components • Accurately apply a range of finishing techniques • Use techniques that involve a number of steps • Be resourceful with practical problems. • Being adaptable with how to work and change the process if needed • Know how to independently check a product throughout the make process to check it will be the best it can be. **Evaluating Knowledge** • Carry out thorough evaluations of existing products considering: how well they have been made, the materials, whether they work, how they've been made, fit for purpose. • Evaluate how much products cost to make and how innovative they are • Research and discuss how sustainable materials are. • Independently evaluate whether or not a product	<u>Structures: Anderson shelters (6.2)</u> **Skills** • Justify why they selected specific materials • Select from a wider range of materials and components including wood and tools • Ensure that work is precise and accurate • Hide joints so as to improve the look of a product • Use knowledge of structures to reinforce and strengthen a 3D framework. **Designing Knowledge** • Use a range of information to inform their design • Use market research to inform their design • Develop ideas whilst working with constraints such as time, resources and costs. • Follow and refine a plan if necessary • Justify and explain a plan to others • Use annotated sketches, cross sectional planning and diagrams. • Model and refine design ideas by making prototypes and using pattern pieces through computer aided designs. **Making Knowledge** • Use selected tools and equipment precisely and expertly • Accurately measure, mark out, cut and shape materials and components • Accurately assemble, join and combine materials and components • Accurately apply a range of finishing techniques • Use techniques that involve a number of steps • Be resourceful with practical problems. • Being adaptable with how to work and change the process if needed • Know how to independently check a product throughout the make process to check it will be the best it can be. **Evaluating Knowledge** • Carry out thorough evaluations of existing products considering: how well they have been made, the materials, whether they work, how they've been made, fit for purpose. • Evaluate how much products cost to make and how innovative they are • Research and discuss how sustainable materials are. • Independently evaluate whether or not a product and the products of others meet all design criteria • Test and evaluate their final product: explain what	<u>Mechanism: Electronic buggy (6.3)</u> **Skills** • Understand what a mechanical object is • Describe how mechanical objects are part of our daily lives • Explain how different shaped cams change the movement of the follow • Can explain how gears transmit movement • Design and make a product using gears • Make accurate measurements and ensure everything is precise • Pupils can ensure their product is strong, sturdy and fit for the intended purpose. • Can refine a mechanical product after testing it. • Know how more complex electrical circuits and components can be used to create functional products. • Can incorporate a switch and motor into their product • Refine an electrical product after testing it • Use a different kind of circuit in a product **Designing Knowledge** • Use a range of information to inform their design • Use market research to inform their design • Develop ideas whilst working with constraints such as time, resources and costs. • Follow and refine a plan if necessary • Justify and explain a plan to others • Use annotated sketches, cross sectional planning and diagrams. • Model and refine design ideas by making prototypes and using pattern pieces through computer aided designs. **Making Knowledge** • Use selected tools and equipment precisely and expertly • Accurately measure, mark out, cut and shape materials and components • Accurately assemble, join and combine materials and components • Accurately apply a range of finishing techniques • Use techniques that involve a number of steps • Be resourceful with practical problems. • Being adaptable with how to work and change the process if needed • Know how to independently check a product throughout the make process to check it will be the best it can be.

	and the products of others meet all design criteria • Test and evaluate their final product: explain what would improve it and consider the effect different resources may have had • Explain whether different resources have improved a product • Consider whether they need more or different information to make a product better. • Consider the impact of products beyond their intended purpose. Prior Learning: 1,1, 2.1, 3.1, 5.1 Links: Y6 Geography 'Global Challenges'	would improve it and consider the effect different resources may have had • Explain whether different resources have improved a product • Consider whether they need more or different information to make a product better. • Consider the impact of products beyond their intended purpose. Prior Learning: 3.3 Links: Y6 History 'Conflict and Resolution'	**Evaluating Knowledge** • Carry out thorough evaluations of existing products considering: how well they have been made, the materials, whether they work, how they've been made, fit for purpose. • Evaluate how much products cost to make and how innovative they are • Research and discuss how sustainable materials are. • Independently evaluate whether or not a product and the products of others meet all design criteria • Test and evaluate their final product: explain what would improve it and consider the effect different resources may have had • Explain whether different resources have improved a product • Consider whether they need more or different information to make a product better. • Consider the impact of products beyond their intended purpose. Prior Learning: 1.3, 4.1 Links: Y6 Science 'Electricity and circuits'

The Design and Technology Knowledge concepts we focus on in KS1 and KS2 are:

KS1

- Design: Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

- Make: Select from and use a range of tools and equipment to perform practical tasks - for example, cutting, shaping, joining and finishing. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.

- Evaluate: Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.

KS2

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.