DESIGN TECHNOLOGY PROGRESSION IN SKILLS AND KNOWLEDGE
YEAR 5 STATUTORY REQUIREMENTS

AUTUMN	SPRING	SUMMER
AUTUMN 2: DESIGN AND MAKE A CONTAINER THAT WILL HOLD SOMETHING SECURELY. [E.G.MONEY, PHONE] LINK TO ANGLO-SAXON TOPIC. **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*** -Come up with a range of ideas after collecting information from different sources -Produce a detailed, step-by-step plan -Explain how a product will appeal to a specific audience **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 wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities*** -Use a range of tools and equipment competently -Make a prototype before making a final version **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*** -Suggest alternative plans; outlining the positive features and draw backs	**SPRING 2:** FRAME STRUCTURES – BRIDGES AND TOWERS DESIGN AND MAKE A STRUCTURE TO REACH A CERTAIN HEIGHT/SPAN A CERTAIN DISTANCE. **INVESTIGATE THE WORKS OF GUSTAVE EIFFEL** **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*** -Come up with a range of ideas after collecting information from different sources -Produce a detailed, step-by-step plan -Explain how a product will appeal to a specific audience **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 wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities*** -Use a range of tools and equipment competently -Make a prototype before making a final version **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.*** -Suggest alternative plans; outlining the positive features and draw backs	**SPRING 2:** Mechanical systems using Gears or pulleys Create a moving toy/display using gears and or pulleys. **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*** -Come up with a range of ideas after collecting information from different sources -Produce a detailed, step-by-step plan -Explain how a product will appeal to a specific audience **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 wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities*** -Use a range of tools and equipment competently -Make a prototype before making a final version **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.*** -Suggest alternative plans; outlining the positive features and draw backs -Evaluate appearance and function against original criteria

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-Evaluate appearance and function against original criteria	-Evaluate appearance and function against original criteria **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.*** -Use knowledge to improve a made product by strengthening, stiffening or reinforcing	**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.*** -Use knowledge to improve a made product by strengthening, stiffening or reinforcing

KNOWLEDGE TO BE LEARNED BY THE END OF EACH UNIT (WHAT DO WE WANT THE CHILDREN TO KNOW AND REMEMBER?)

• Anglo Saxons often used small bags to carry money, combs and other small items • Some bags/purses were highly decorated • The qualities required to make a strong, usable purse/bag are material and stitching quality.	• Gustave Eiffel was a French engineer who specialized in metal structures. • Lived in France 1832 – 1923 • His early work focused on building bridges. • He won competitions for his design • He designed and built the Eiffel Tower • Some shapes are better at supporting weight than others.	• Gears and pulleys can be used to change the speed or effort of a mechanism

Children working at below Age Related Expectations in DESIGN TECHNOLOGY at the end of Year 5: