PAXTON ACADEMY
SPORTS AND SCIENCE
INDIVIDUALLY EXCELLENT, COLLECTIVELY BRILLIANT

Paxton Academy: Design Technology – Progression of Skills

Y	Analysing and Designing	Make	Evaluate	Projects
R	**Bridges** • I can draw a plan • I can decide which material is best for a bridge • I can change my design if it is not fit for purpose **Binoculars** • I can draw a plan • I can decide which material is best for a binoculars • I can change my design if it is not fit for purpose **Weaving** **Split pin flowers** **Porridge/ Sandwiches** I can discuss the key ingredients I can design a bowl of porridge for goldilocks/ a sandwich for myself	**Bridges** • I can carefully select the materials • I can join the materials using different techniques **Binoculars** • I can carefully select the materials • I can join the materials using different techniques **Weaving** **Split pin flowers** • I can cut the materials • I can join the materials using different techniques **Porridge/ Sandwiches** I can gather the correct ingredients I can use small tools effectively	**All Projects** • I can share my creation, explaining the process I have used • I can return to my work and build upon it, refining my ideas	• Bridges • Binoculars • Weaving • Split pin flowers • Porridge/ Sandwiches •
1	**Autumn 2** **Drawbridge** • I can analyse and list the key features of a drawbridge and the role of the lever • I can explore the design of a well know drawbridge and record my opinions • I can design my own drawbridge considering materials, size and tools **Spring 2** **Moving Card / Boat on a map**	**Drawbridge** • I can cut and shape materials and explore how a pulley system works • I can create a drawbridge from my design, refining my design as work progresses • I can use art skills to complete my design **Moving Card / Boat on a map** • I can create the components for my final design	**Drawbridge** I can evaluate the success of my drawbridge **Moving Card / Boat on a map** • I can evaluate the success of my card commenting on any developments I could have made **Seaside Ice Lollies** • I can evaluate the success of my recipe	• Drawbridge • Moving card • Ice Lolly

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	• I can explore how levers are used in everyday life and record examples of levers I can see in my environment • I can design two ideas for my product considering tools and materials I'll need to use **Summer 2** **Seaside Ice Lollies** • I can record my personal opinions of some ice lollies • I can classify ingredients • I can design a healthy ice lolly for myself considering tastes and textures and nutritional content.	• I can assemble my motion card combining materials to strengthen and refine my design if necessary **Seaside Ice Lollies** • I can use tools to practice skills in cutting, grating, juicing and measuring • I can cut, peel, grate and assemble ingredients to make an ice lolly that I like		
2	**Autumn 2** **Greek Salad** • I can record what I know about foods in Europe. • I can sort the ingredients of a Greek salad into the five food groups and record my personal responses on the recipe. • I can design a Greek recipe considering nutritional value and target audience and consider any adjustments I may wish to make. **Spring 2** **Continent Puppet** • I can record information that I have learnt about puppets • I can explore the design of a well-known hand puppet and record my personal opinions on the design • I can design my own hand puppet considering the design criteria and equipment I will need • I can draw a final design onto card **Summer 2** **Bridges around Africa**	**Greek Salad** • I can practise my cutting, measuring, peeling and grating techniques and understand why we use these techniques • I can create my own Greek meal from my recipe, assembling ingredients and refining my design as work progresses **Continent Puppet** • I can mark out, cut and shape materials to make the template of my hand puppet • I can use a running stick to create a hand puppet • I can use basic finishing techniques to improve the appearance of my product **Bridges around Africa** • I can use a variety of materials and shapes to create strong and stable structure • I can make my own bridge refining my design as work progresses	**Greek Salad** • I can evaluate the success of my recipe **Continent Puppet** • I can evaluate the success of my puppet **Bridges around Africa** • I can evaluate the success of my bridge commenting on what needed developing and what was successful •	• Greek Salad • Puppet • Bridge

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	• I can analyse and comment on a range of bridge designs (Suez canal bridge, third mainland bridge and 6th October Bridge). • I can record information about Suez Canal Bridge giving my personal opinions on the design • I can design a bridge to hold a toy car selecting the materials and tools I'll need. •			
3	**Autumn 1** **Iron Age Stew** • I can analyse and comment on a traditional Iron Age recipe considering seasonality, nutrition and how the food was sourced. • I can identify food that has been grown for purpose • I can design a nutritional Iron Age stew considering tools and cooking techniques I will need **Spring 1** **Bird Feeder** • I can decide on the design criteria for a successful bird feeder (durability, sustainability, aesthetic, affordable and features) • I can use my design criteria to identify the strengths and weakness of a variety of existing bird feeder designs • I can create two designs for a sustainable bird feeder considering materials and joining techniques I will need / I can recognise which of my designs would be the most successful- giving reasons **Spring 2** **Beneath our feet Musical Instrument** • I can classify a range of existing instruments	**Iron Age Stew** • I can practise the cooking techniques available to me in the past and the tools in which I could have used. (chop, peal, grate, measure and weigh) • I can cook my own Iron Age stew following my recipe, assembling ingredients and refining my design as work progresses **Bird Feeder** • I can create a bird feeder by measuring, marking, cutting and joining accurately • I can ensure my product has a high-quality finish, using art skills where appropriate **Beneath our feet Musical Instrument** • I can ensure my product has a high-quality finish by using art skills where appropriate • I can compose a short piece with 3 or more players	**Iron Age Stew** • I can comment on my recipe and discuss any changes I may or may not want to make (adding flavour available in the past etc) • I can evaluate the success of my recipe and discuss how I could adapt this recipe using modern day ingredients **Bird Feeder** • I can identify what was successful about my design and what you would change if you could. **Beneath our feet Musical Instrument** • I can evaluate the success of my instruments commenting on the effect of the sound and expressing my personal opinions of which instrument worked the best	• Iron Age Stew • Bird Feeder • Beneath our feet Musical Instrument

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	• I can explore making sounds through stretched strings, stretched skins, tiny particles and wood blocks, recording my opinions on my findings. • I can design three instrument thinking about how they will look, how they will work and what sound they will make			
4	**Autumn 2** **Moving mountains: Safety box** • I can produce the design criteria for a personal safety box • I can plan the measurements for my treasure box and scale up a prototype **Spring 2** **Tote beach Bag** • I can identify strengths and weaknesses in a variety of bag designs • I can order the main stages of making a product • I can design pattern pieces thinking about size, seam allowances, handle and closing functions. (eg drawstring/zip/poppers/button) **Summer 1** **Viking bread** • I can record what I know about Viking village food. • I can compare some bread recipes • I can design a Viking bread recipe considering purpose, nutritional value, temperature and cooking equipment I will need	**Moving mountains: Safety box** • I can make 3D net shape prototypes to explore various box designs • I can draw and annotate a design for my treasure box using two different viewpoints • I can make a treasure box influenced by the Ancient Greeks that hold the contents securely. • I can ensure my product has a high quality finish, using art skills where appropriate **Tote beach Bag** • I can use pattern pieces, seam allowances and a selected stich to assemble my bag • I can ensure my product has a high -quality finish, using art skills where appropriate **Viking bread** • I can use a knife safely and measure accurately • I can create my own bread following my recipe, assembling ingredients and refining my design as work progresses	**Moving mountains: Safety box** • I can evaluate how effective my box was and identify whether I could make any future changes to my design **Tote beach Bag** • I can identify what was successful about my design and how it could have been improved upon **Viking bread** • I can evaluate the success of my recipe including taste and texture / I can discuss how I could adapt this recipe using modern day ingredients	• Safety box • Tote Bag • Viking bread
5	**Autumn 2** **Catapult/shaduf** • I can compare and contrast some catapults and their uses in different eras.	**Shaduf** • I can explore making my structure using various materials and joining techniques (in groups) and evaluate which made the more successful structure and why?	**Shaduf** • I can evaluate the success of my shaduf and suggest any improvements I could make. **Cool coastline Toy**	• Shaduf • Pin wheel Toy • Farming food recipe

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	• I can create two designs for my Shaduf suggesting materials that I could use • I can adapt my final design and annotate it in detail and select the appropriate materials and tools I will need. **Spring 2** **Cool coastlines toy** • I can research prototypes, cross-sectional diagrams and computer-aided designs to understand how products work and are made (pinwheel and whirligig). • I can design two pinwheels based on my research with the needs of a target market in mind. • I can use prototypes and cross-sectional diagrams to present my own designs inspired by well-known designers, considering size and materials **Summer 1** **Farming Food** • I can classify some foods found in UK faming on whether it is reared, caught or grown. • I can design a recipe considering purpose, nutritional value and the cooking techniques I will need when using UK farming products.	• I can ensure my product has a high-quality finish, using art skills where appropriate **Cool coastline Toy** • I can practise joining techniques comment on why I chose these techniques I can ensure my product has a high-quality finish, using art skills where appropriate **Farming Food** • I can discuss and practise the cooking techniques I will need to use in my dish / I can demonstrate a range of techniques, such as: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • I can measure accurately and calculate ratios of ingredients to scale up or down from a recipe • I can create my own Indonesian dish following my recipe, assembling ingredients and refining my design as work progresses •	I can evaluate the success of my toy and discuss how much it would cost if I were to sell it in a shop / I can think of ways to improve the user's experience (sustainability, function, materials) **Farming and Food** • I can evaluate the success of my recipe and discuss how I could adapt this recipe using modern day ingredients •	
6	**Autumn 1** **Global recipes** • I can record my personal opinions of a range of recipes around the world including nutritional content and flavour • I can adapt the designs of a few popular recipes from around the world to create three recipes of my own. (provide simple choices for children to adapt and rewrite)	**Global recipes** • I can create a recipe considering feedback from intended user and apply finishing techniques to ensure my product has a high-quality finish (garnish, arrangement, presentation) **Quilt Patch** • I can research and practise different stitches I could use to join my fabrics together	**Global recipes** • I can evaluate the success of my recipe and think about any improvements I could make **Quilt patch** • I understand how this product and the work of Greta Thunberg have an impact on climate change. **Motorised vehicle** • I can evaluate the design of products and suggest	• World Food • Quilt patch • Motorised Tank

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	• I can use online research create a survey to see which of my recipes are the most popular (link to survey to be sent out around school and shared with parents- clarify with Theresa, children to make survey in class via paper and then CT to create a google form to be sent out) • I can research how to make my recipe using a budget of £10 (per group) **Spring 1** **Quilt patch** • I can create a design-criteria for a quilt patch. • I can draw and annotate some ideas for my final symbol explaining its meaning • I can design a quilt inspired by climate change and symbol I would like to use **Summer 1** **Motorised vehicle** • I can research some great designers, looking at prototypes, exploded diagrams and computer-aided designs to understand how products work and are made • I can research and explore the electrical systems I will need to use in my product [e.g. series circuits incorporating switches, bulbs, buzzers, and motors] (draw and create the circuit you will need and explain how it will operate) • I can make an initial design of a bunker with my local areas in mind.	• I can measure, cut and sew the pattern piece for my quilt • I can measure cut and sew the symbol onto my final piece / I can accurately apply a range of finishing techniques to ensure my final design has an appealing aesthetic **Motorised vehicle** • I can make a simple chassis for a toy tanker. • I can attach an electrical circuit onto my toy tanker. • I can ensure my tank has a high-quality finish using art skills where necessary • I can make a final design for my tank using a net shape prototype and explore the physical appearance of my product	improvements to the user experience	