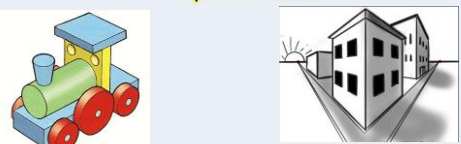

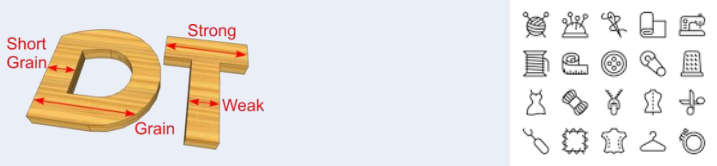
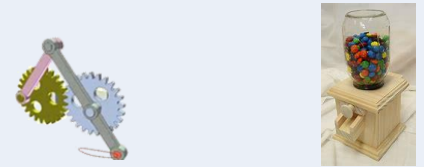

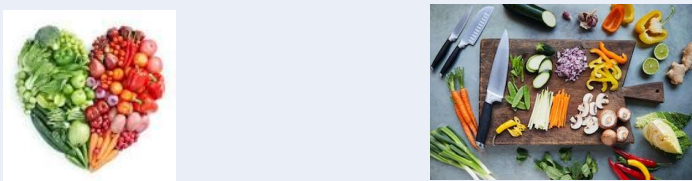


Year 7 Design & Technology 23-24

Programme of Study

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Home Learning
7 Theory work (taught in sets. 2 hours fortnightly)	Unit 3a – Drawing Techniques <ul style="list-style-type: none"> • Colour wheel • Line weighting • Oblique view • Isometric drawings • Perspective drawing • Orthographic drawing • Exploded views 		Unit 3b – Food and Nutrition <ul style="list-style-type: none"> • Develop a knowledge and understanding of what is meant by a 'balanced diet' and the function of key nutrients within the Eatwell guide • Risks of unhealthy eating • Design menus suitable for different age groups 		Unit 3c - Materials <ul style="list-style-type: none"> • Understanding mechanisms <ul style="list-style-type: none"> • Properties of wood • Properties of metals • Tessellation - calculations • Investigate properties of fabrics • Design a range of products with a variety of different materials 		Set in project work
7 Project work (1 hour per week, rotate every 9 weeks.)	Unit 1 – Timbers/boards and mechanisms <p>Key knowledge and skills:</p> <ul style="list-style-type: none"> • 2D and 3D drawing techniques • 2D CAD (Computer Aided Design) • Woodworkers tools and machinery <ul style="list-style-type: none"> • Testing of prototype • Analyse existing products 		Unit 2 – Textiles/storage <p>Key knowledge and skills:</p> <ul style="list-style-type: none"> • Hand embroidery • Decorative techniques • Applique/Disperse Dyes • Health and Safety • Heat transfer printing • Technical specification • Testing, evaluating, refining • Product analysis 		Unit 3 - Healthy Eating <p>Key knowledge and skills:</p> <ul style="list-style-type: none"> • Understanding knife skills in kitchen • Use of the oven through a variety of focused practical tasks. • Evaluate practical work and explain the function of nutrients within their own work • Practical skills: knife work – julienne, sauce making, baking, rubbing in method, use of the hob/oven, boiling, sautéing. 		Topic 1: Materials and their properties Topic 2: Tools and equipment Topic 3: Energy source

“Pupils will have the opportunity to develop the **creative, technical and practical expertise** needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world”.

The Spiral Approach

The knowledge and skills that Selly Park pupils develop as they move up the different year groups





Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Home Learning
9 (2 hours per week, rotate every 9 weeks)	Unit 7 - 3D CAD Key knowledge and skills: •3D drawing – informal sketching and rendering •Developing formal 3D drawing techniques •3D CAD skills (sketchup) •Technical drawings •CAD/CAM (laser cutter and 3D printer) •Evaluating cost •Evaluating Prototypes •Presentation of ideas •Developing an understanding of ergonomics		Unit 8 – Textiles Construction/Digital Design Key knowledge and skills: •Anthropometric data •Pattern making •Construction and joining skills •Decorative techniques/masks •History of masks – new designers (BOA – education dept. at Rep) •Work of relevant designers •Printing techniques including sublimation, smart inks •Photoshop •Use of CAD/CAM •Calculating lay plans – scales of production •Elastication and gathering •Analysis of design ideas •Fabric testing		Unit 9 - Food Science Key knowledge and skills: •Food nutrition and health •Food science •Investigations- fermentation •Investigations – raising agents •Practical skills: use of oven and hob, dough making, knife skills, shaping, pasta making, gelatinisation, pastry and coagulation •Evaluation of practical work – focusing on nutrition and science within their work •Developing independent recipes		Topic 1: Food prep and nutrition Topic 2: Environmental issues Topic 3: Mechanical systems
8 (Average 2 hours per week, rotate every 9 weeks)	Unit 4 - Mood Lighting/Electronics Key knowledge and skills: •Properties of plastic and metals •Understanding CAD/CAM and the laser cutter •Iterative thinking •Modelling and testing •Electronics and components •Electrical systems – input/process/output •Soldering •Practical skills – making jigs and moulds Casting materials Bending metals		Unit 5 – Bags/Decorative Techniques Key knowledge and skills: •Properties of more fabrics •Exploring manufacturing techniques, including: •Heat pressing/Appique/Corsages/Bows •Measuring, calculating lay plans – batch production •Market research •Identifying primary user and stakeholders •Joining fabrics – quality assurance •Forces and stresses •Evaluation of prototypes •Sewing machines skills •CAD/CAM sewing machines		Unit 6 - Food Safety Key knowledge and skills: •Personal hygiene and food safety •Knife skills developed – using meat •Food storage •Use of food probes •Nutrition: Carbohydrates, proteins, fats, vitamins and minerals •Practical skills – cooking with meat, shaping/bread making, pasta sauce, baking •Evaluation of their own work •Developing independent recipes		Topic 1: Product usability Topic 2: New and emerging tech Topic 3: Drawing skills

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The Spiral Approach

The knowledge and skills that Selly Park pupils develop as they move up the different year groups



KS4 Design & Technology/Engineering Department

Programme of Study



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The Spiral Approach

The knowledge and skills that Selly Park pupils develop as they move up the different year groups



Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Home Learning	
11 (2 hours per week)	UNIT 15 - NEA (40/50%) Key knowledge and skills: <ul style="list-style-type: none"> Exploring ideas Design thinking Design communication Final prototype Evaluate 		UNIT 14 – Skills Project Key knowledge and skills: <ul style="list-style-type: none"> Developing practical skills Focus on chosen material specialism CAD/CAM Decorative techniques Finishing 		Revision Programme <ul style="list-style-type: none"> Preparation for exam (50%) Coverage of all relevant topics Past papers 		Contextual challenges 2019/20 <ul style="list-style-type: none"> Sustainability Travel Disruption Countryside 	Topic 1: Specialist material choice Topic 2: Systems Topic 3: Designing and making principles
10 (2 hours per week)	UNIT 13 - Practice NEA Key knowledge and skills: <ul style="list-style-type: none"> Exploring ideas Design thinking Design communication Final prototype Evaluation 		UNIT 14 – Skills Project Key knowledge and skills: <ul style="list-style-type: none"> Developing practical skills Focus on chosen material specialism CAD/CAM Decorative techniques Finishing 		UNIT 15 - NEA Key knowledge and skills: <ul style="list-style-type: none"> Exploring ideas Design thinking Design communication Final prototype Evaluation 		Topic 1: Key ideas in DT Topic 2: Materials in depth Topic 3: More about materials	

KS4 Food Preparation & Nutrition Department

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Home Learning
11 (2 hours per week)	UNIT 17 F&N - NEA 1 (15%) <ul style="list-style-type: none"> Food science investigation release date 1st September 2000 word written essay consisting of: <ul style="list-style-type: none"> Research Investigation Analysis & Evaluation 		UNIT 17 F&N - NEA 2 (35%) - Food preparation task, release date 1 st November, consisting of: <ul style="list-style-type: none"> Research Demonstrating technical skill Planning Making Analysis and Evaluation 		Revision Programme <ul style="list-style-type: none"> Preparation for exam (50%) Coverage of all relevant topics Past papers 		Topic 1: Food Choice Topic 2: Food Provenance Topic 3: Focus areas
10 (2 hours per week)	UNIT 16 – F+N GCSE Key Skills and knowledge: <ul style="list-style-type: none"> Proteins, carbohydrate, fats, vitamins and minerals Food science investigations: gelatinization, coagulation, denaturation, viscosity Developed practical skills, e.g.: <ul style="list-style-type: none"> Knife skills, blind baking, pastry, filleting fish, deboning chicken, fresh pasta, starch based sauces 		<ul style="list-style-type: none"> Food safety Food provenance and food choice Developing independent recipes and designing meals for a different lifestyles/cultures Variety of more complex practical skills including lasagne, puff pastry. 		F&N – Practice NEA 1/2 Key knowledge and skills: <ul style="list-style-type: none"> Food preparation task Portfolio of work evidencing research, practice dishes and evaluation on required Analysis & Evaluation 		Topic 1: Food Nutrition and Health Topic 2: Food science Topic 3: Food safety