

## New Seaham Academy Design Technology scheme of work

Class: 2

	<u>Topic</u>	<u>Objectives</u>	<u>Resources</u>
<b>Autumn 1</b>	Structure- make a house from recycled material- a building where I live or for a fairytale character.	<ul style="list-style-type: none"><li>• Explore and evaluate a range of similar products, saying what they like/dislike.</li><li>• Design a functional and appealing product based on a simple design criteria.</li><li>• Learn about the simple working characteristics of materials and components for function and appearance.</li><li>• Learn about simple tools which can be used in the design and build process and their safe use.</li><li>• Investigate how free-standing structures can be made stronger, stiffer and more stable.</li><li>• Evaluate their product by discussing if it meets the design criteria.</li><li>• Look at work of <b>Yuken Teruya</b> and describe the differences and similarities between their work and how it links to the children's work.</li></ul>	
<b>Autumn 2</b>	Art and Design Taught		

<b>Spring 1</b>	Food- design and make a fruit smoothie.	<ul style="list-style-type: none"> <li>• Learn that all foods come from plants or animals. Learn that food has to be farmed, grown elsewhere or caught.</li> <li>• Be able to name and sort foods into the 5 groups.</li> <li>• Know that everyone should eat at least 5 portions of fruit and vegetables every day.</li> </ul>	
		<ul style="list-style-type: none"> <li>• Learn how to prepare simple dishes safely and hygienically, without using a heat source.</li> <li>• Explore and evaluate a range of similar products, saying what they like/dislike.</li> <li>• Select from a range of fruit and vegetables according to their characteristics - colour, taste, texture, etc.</li> <li>• Learn how to use techniques such as cutting, peeling and grating.</li> </ul>	
<b>Spring 2</b>	Art and Design Taught		
<b>Summer 1</b>	Control- produce a moving picture e.g. a page for a class book about ourselves.	<ul style="list-style-type: none"> <li>• Explore and evaluate a range of similar products. Broaden knowledge of the relevant materials, tools and equipment involved in the design process.</li> <li>• Learn about the simple working characteristics of materials and components and with support select from a range of materials and tools for cutting, shaping, and joining.</li> <li>• Generate ideas and plan based on a simple design using key vocabulary.</li> </ul>	

		<ul style="list-style-type: none"><li>• Learn about the movement of simple mechanisms including levers and sliders.</li><li>• Use key vocabulary to describe materials, tools and equipment.</li><li>• Learn how free-standing structures can be made stronger, stiffer and more stable.</li><li>• Evaluate design and product against design criteria and purpose using key vocabulary.</li></ul>	
<b>Summer 2</b>	Art and Design Taught		

## New Seaham Academy Design Technology scheme of work

Class: 3

	<u>Topic</u>	<u>Objectives</u>	<u>Resources</u>
<b>Autumn 1</b>	Structure- design and make an object e.g. house linking to fairy story.	<ul style="list-style-type: none"><li>• Explore and evaluate a range of existing products to understand the key factors in their design.</li><li>• Explore and evaluate a range of materials for function and appearance, begin to use technical vocabulary to name and describe them.</li><li>• Design a functional and appealing product based on a simple design criteria.</li><li>• Begin to select from and use a range of appropriate materials according to functional and aesthetic characteristics.</li><li>• Select and use a range of simple tools and equipment safely.</li><li>• Develop knowledge of how freestanding structures can be made stronger, stiffer and more stable.</li><li>• Look at work of <b>Alan Wolfson</b> and describe the differences and similarities between their work and how it links to the children's work.</li><li>• Test and evaluate their product against their own design criteria.</li></ul>	
<b>Autumn 2</b>	Art and Design Taught		

<b>Spring 1</b>	Food- design and make a fruit smoothie.	<ul style="list-style-type: none"> <li>• Learn that all foods come from plants or animals.</li> <li>• Learn that food has to be farmed, grown elsewhere or caught.</li> <li>• Be able to name and sort foods into the 5 groups.</li> <li>• Know that everyone should eat at least 5 portions of fruit and vegetables every day.</li> <li>• Learn how to prepare simple dishes safely and hygienically, without using a heat source.</li> <li>• Explore and evaluate a range of similar products, and suggest why ingredients have been used.</li> <li>• Select from a range of fruit and vegetables according to their characteristics - colour, taste, texture, etc.</li> <li>• Make and present food appropriately using techniques such as cutting, peeling and grating.</li> </ul>	
<b>Spring 2</b>	Art and Design Taught		
<b>Summer 1</b>	Mechanisms- make a vehicle with wheels.	<ul style="list-style-type: none"> <li>• Explore and evaluate a range of existing products to understand the key factors in their design.</li> <li>• Deepen understanding about the simple working characteristics of materials and components in the design process.</li> <li>• Design a functional and appealing product based on a simple design criteria.</li> <li>• Use key vocabulary to describe the movement of simple mechanisms including leavers, sliders, wheels and axles, tools and materials.</li> <li>• Be able to generate and communicate own ideas through talking and drawing.</li> </ul>	

		<ul style="list-style-type: none"><li>• Select and use a range of appropriate materials and tools with some accuracy and according to functional and aesthetic characteristics.</li><li>• Test and evaluate their product against their own design criteria.</li></ul>	
<b>Summer 2</b>	Art and Design Taught		

## New Seaham Academy Design Technology scheme of work

Class: 4

	<u>Topic</u>	<u>Objectives</u>	<u>Resources</u>
<b>Autumn 1</b>	Textiles- Make a puppet.	<ul style="list-style-type: none"> <li>• Investigate and evaluate a range of similar products, and begin to discuss why material choices have been made.</li> <li>• Learn and investigate that a 3D textiles product can be assembled from two identical fabric shapes.</li> <li>• Look at work of <b>Harry Corbett</b> and describe the differences and similarities between their work and how it links to the children's work.</li> <li>• Formulate a simple plan of what needs to be done and a list of resources to be used, considering function and appearance.</li> <li>• Be able to select from and use fabrics and fastenings according to their functional and aesthetic characteristics, e.g. strength and pattern.</li> <li>• Select from and use tools and equipment to cut, shape, join and finish with some accuracy.</li> <li>• Evaluate their product against the original design and suggest improvements.</li> </ul>	
<b>Autumn 2</b>	Art and Design Taught		
<b>Spring 1</b>	Mechanism- make a vehicle e.g: medieval cart from history.	<ul style="list-style-type: none"> <li>• Generate and clarify realistic ideas through discussion and design criteria for an appealing and functional product.</li> <li>• Explore, investigate and analyse a range of similar/existing products (from history).</li> </ul>	

		<ul style="list-style-type: none"> <li>• Select from and use materials and components including construction materials for the movement of simple mechanisms including leavers, sliders, wheels and axles.</li> <li>• Select from and safely use a range of tools with increased accuracy.</li> <li>• Use key vocabulary to describe during the design and build process.</li> <li>• Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement.</li> </ul>	
<b>Spring 2</b>	Art and Design Taught		
<b>Summer 1</b>	Structure- design and make a miniature garden/seaside.	<ul style="list-style-type: none"> <li>• Explore and investigate a range of similar products to support the design process.</li> <li>• Draw and annotate simple designs with material and equipment choices based on function and aesthetics.</li> <li>• Identify, select and use a range of appropriate materials and tools with increasing accuracy.</li> <li>• Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement.</li> <li>• Look at work of <b>Steeve Wheen</b> and describe the differences and similarities between their work and how it links to the children's work.</li> </ul>	
<b>Summer 2</b>	Art and Design Taught		



## New Seaham Academy Design Technology scheme of work

Class: 5

	<u>Topic</u>	<u>Objectives</u>	<u>Resources</u>
<b>Autumn 1</b>	Structure- make a photo frame/mirror.	<ul style="list-style-type: none"> <li>• Explore and evaluate a range of existing products based on how well they work, achieve their purpose and meet users needs and wants.</li> <li>• Discuss and comment on why materials have been chosen and methods of construction have been used.</li> <li>• Research how to make strong, stiff shell structures.</li> <li>• Select and use a range of appropriate tools and materials with some accuracy and according to their functional and aesthetic characteristics</li> <li>• Begin to explain choices of tools and materials according to functional and aesthetic qualities.</li> <li>• Test and evaluate their products against the original design criteria and suggest improvements.</li> </ul>	
<b>Autumn 2</b>	Art and Design Taught		
<b>Spring 1</b>	Architecture- buildings based on natural forms.	<ul style="list-style-type: none"> <li>• Explore and evaluate a range of existing products based on function and aesthetic qualities.</li> <li>• Discuss how well products have been designed and made so they work, achieve their purpose and meet users needs and wants.</li> <li>• Explore and explain why materials have been chosen and methods of construction have been used.</li> <li>• Research how to make strong, stiff shell structures.</li> </ul>	

		<ul style="list-style-type: none"> <li>• Select and use a range of appropriate tools and materials with some accuracy and according to their functional characteristics</li> <li>• Be able to explain choices of tools and materials according to functional and aesthetic qualities.</li> <li>• Test and evaluate their products against the original design criteria and suggest improvements.</li> <li>• Look at work of <b>Antoni Gaudi</b> and describe the differences and similarities between their work and how it links to the children's work.</li> </ul>	
<b>Spring 2</b>	Control- Produce a book with moving parts.	<ul style="list-style-type: none"> <li>• Use annotated sketches to develop and communicate ideas for an appealing and functional product.</li> <li>• Select from and use a wider range of materials and components, including construction materials and kits, and textiles.</li> <li>• Select and combine fabrics and materials according to their functional and aesthetic qualities.</li> <li>• Learn how to use learning from science and mathematics to help design and make products that work.</li> <li>• Look at work of <b>Julian Wehr</b> and describe the differences and similarities between their work and how it links to the children's work.</li> <li>• Test and evaluate their products against the original design criteria and suggest improvements for their own product and the work of others.</li> </ul>	
<b>Summer 1</b>	Electrical control- design and make a 'Burglar Trap'- something which triggers a light or buzzer to come on.	<ul style="list-style-type: none"> <li>• Evaluate existing products discussing material choices and improvements which could be made.</li> <li>• Develop ideas through the analysis of existing products and use annotated sketches to meet a simple design criteria.</li> </ul>	

		<ul style="list-style-type: none"> <li>• Use a wider range of materials and components, including construction materials and kits, textiles, mechanical components and electrical components.</li> <li>• Explore and investigate the functional properties and aesthetic qualities of materials and how these contribute to the design process.</li> <li>• Explore and investigate how materials can be combined and mixed to create more useful characteristics.</li> <li>• Use the correct technical vocabulary for the projects they are undertaking.</li> <li>• Learn how a range of simple electrical circuits and components can be used to create functional products.</li> <li>• Test and evaluate their product against the original design criteria and suggest improvements for their own work and that of others.</li> </ul>	
<b>Summer 2</b>	Art and Design Taught		

## New Seaham Academy Design Technology scheme of work

Class: 6

	<u>Topic</u>	<u>Objectives</u>	<u>Resources</u>
<b>Autumn 1</b>	Control- produce a book with moving parts, eg: pop up book.	<ul style="list-style-type: none"><li>• Gather information about needs and wants and develop design criteria to inform the design of products that are fit for purpose.</li><li>• Investigate and analyse a range of existing products, discussing function, aesthetics and how they could be improved.</li><li>• Generate, develop, and communicate realistic ideas through discussion and as appropriate sketches with annotation.</li><li>• Select from and use a wider range of materials and components, including construction materials and kits, textiles, mechanical components and electrical components.</li><li>• Investigate, select and use appropriate materials which have both functional properties and aesthetic qualities.</li><li>• Combine and mix materials to create more useful characteristics.</li><li>• Look at work of <b>Waldo Hunt</b> and describe the differences and similarities between their work and how it links to the children's work.</li><li>• Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their own work.</li><li>• Take into account the views of others and share their views on the work of others.</li></ul>	

<b>Autumn 2</b>	Art and Design Taught		
<b>Spring 1</b>	Art and Design Taught		
<b>Spring 2</b>	Art and Design Taught		
<b>Summer 1</b>	Food- design and make a healthy meal.	<ul style="list-style-type: none"> <li>• Know that food is grown, reared and caught in the UK, Europe and the wider world.</li> <li>• Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</li> <li>• Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> <li>• Know that a healthy diet is made up from a variety and balance of different foods and drinks, as depicted in the Eatwell Plate.</li> <li>• Learn that to be active and healthy, food is needed to provide energy for the body.</li> <li>• Taste and evaluate a range of fruit and vegetables according to their characteristics to determine the intended user's preference.</li> </ul>	
<b>Summer 2</b>	Art and Design Taught		

## New Seaham Academy Design Technology scheme of work

Class: 7

	<u>Topic</u>	<u>Objectives</u>	<u>Resources</u>
<b>Autumn 1</b>	Electrical control- make an electrically controlled moon buggy.	<ul style="list-style-type: none"><li>• Carry out research into existing designs and products and investigate and evaluate their functional and aesthetic qualities.</li><li>• Generate, develop and communicate realistic ideas through discussion, diagrams, annotated sketches and prototypes.</li><li>• Select from and use a wider range of materials and components, including construction materials and kits, textiles, mechanical components and electrical components.</li><li>• Use learning from science and mathematics to help design and make products that work.</li><li>• Investigate, select and use appropriate materials which have both functional properties and aesthetic qualities.</li><li>• Combine and mix materials to create more useful characteristics.</li><li>• Evaluate their products against their design specification and purpose, identifying strengths and areas for development and carrying out appropriate tests.</li><li>• Use the correct technical vocabulary for the projects they are undertaking.</li><li>• Learn how more complex electrical circuits and components can be used to create functional products.</li></ul>	Outdoors: try out your moon buggy on the different terrains in our school grounds.

		<ul style="list-style-type: none"> <li>Look at work of <b>Ferenc Pavlics</b> and describe the differences and similarities between their work and how it links to the children's work.</li> </ul>	
<b>Autumn 2</b>	Art and Design Taught		
<b>Spring 1</b>	Art and Design Taught		
<b>Spring 2</b>	Art and Design Taught		
<b>Summer 1</b>	Food- design and make a healthy meal, eg: fruit salad	<ul style="list-style-type: none"> <li>Know that food is grown, reared and caught in the UK, Europe and the wider world.</li> <li>That seasons may affect the food available.</li> <li>How food is processed into ingredients that can be eaten or used in cooking.</li> <li>Explore and evaluate a range of similar products, and suggest why ingredients have been used.</li> <li>How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</li> <li>How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> <li>That recipes can be adapted to change the appearance, taste, texture and aroma.</li> <li>That different foods contain different substances- nutrients, water and fibre- that are needed for health.</li> <li>That a recipe can be adapted by adding or substituting one or more ingredients.</li> </ul>	Outdoors: grow your own food in our school garden and use it in a healthy meal - fast growing things are salad, radishes etc.
<b>Summer 2</b>	Art and Design Taught		





## New Seaham Academy Design Technology scheme of work

Class : 8

	<u>Topic</u>	<u>Objectives</u>	<u>Resources</u>
<b>Autumn 1</b>	Electric control- make an electrically controlled lorry.	<ul style="list-style-type: none"><li>• Carry out research into existing designs and products and investigate and evaluate their functional and aesthetic qualities.</li><li>• Gather information about needs and wants and develop design criteria to inform the design of products that are fit for purpose.</li><li>• Generate, develop and communicate innovative ideas through discussion, diagrams, annotated sketches and prototypes.</li><li>• Select from and use a wider range of materials and components, including construction materials and kits, textiles, mechanical components and electrical components.</li><li>• Use learning from science and mathematics to help design and make products that work.</li><li>• Investigate, select and use appropriate materials which have both functional properties and aesthetic qualities.</li><li>• Combine and mix materials to create more useful characteristics.</li><li>• Explore how more complex electrical circuits and components can be used to create functional products.</li><li>• How to program a computer to monitor changes in the environment and control their products.</li></ul>	

		<ul style="list-style-type: none"> <li>• Look at work of <b>Mervyn Morris</b> and describe the differences and similarities between their work and how it links to the children's work.</li> </ul>	
<b>Autumn 2</b>	Art and Design Taught		
<b>Spring 1</b>	Art and Design Taught		
<b>Spring 2</b>	Art and Design Taught		
<b>Summer 1</b>	Food- design and make a healthy meal.	<ul style="list-style-type: none"> <li>• Know that food is grown, reared and caught in the UK, Europe and the wider world.</li> <li>• That seasons may affect the food available.</li> <li>• How food is processed into ingredients that can be eaten or used in cooking.</li> <li>• Explore and evaluate a range of similar products, and suggest why ingredients have been used.</li> <li>• How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</li> <li>• How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> <li>• That recipes can be adapted to change the appearance, taste, texture and aroma.</li> <li>• That different foods contain different substances- nutrients, water and fibre- that are needed for health.</li> <li>• That a recipe can be adapted by adding or substituting one or more ingredients.</li> </ul>	
<b>Summer 2</b>	Art and Design Taught		



## New Seaham Academy Design Technology scheme of work

Class: 9

	<u>Topic</u>	<u>Objectives</u>	<u>Resources</u>
<b>Autumn 1</b>	Structure- make a shelter to survive in the rain forest- bush craft activity.	<ul style="list-style-type: none"> <li>• Carry out research into existing designs and products and investigate and evaluate their functional and aesthetic qualities.</li> <li>• Generate, develop, explore and model innovative ideas through discussion, prototypes, diagrams and annotated sketches.</li> <li>• To use learning from science and mathematics to help design and make products that work.</li> <li>• Confidently discuss the functional properties and aesthetic qualities of materials, equipment and tools to produce a list required for their product.</li> <li>• Demonstrate understanding that materials can be combined and mixed to create more useful characteristics.</li> <li>• Explore how to reinforce and strengthen a 3D framework.</li> <li>• Confidently use a range of tools, equipment and materials to make products that are accurately assembled, well finished and fit for purpose.</li> <li>• Compare and critically evaluate the finished product against the design specification, functionality, aesthetics and fitness for purpose.</li> <li>• Look at work of William Paterson and Oscar Carl Kerrison and describe the differences and similarities between their work and how it links to the children's work.</li> </ul>	

<b>Autumn 2</b>	Art and Design Taught		
<b>Spring 1</b>	Food- making bread- linked to rations.	<ul style="list-style-type: none"> <li>• Know that food is grown, reared and caught in the UK, Europe and the wider world.</li> <li>• Explore and evaluate a range of similar products, and suggest why ingredients have been used.</li> <li>• That seasons may affect the food available.</li> <li>• How food is processed into ingredients that can be eaten or used in cooking.</li> <li>• How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</li> <li>• How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> <li>• That recipes can be adapted to change the appearance, taste, texture and aroma.</li> <li>• That different foods contain different substances- nutrients, water and fibre- that are needed for health.</li> <li>• That a recipe can be adapted by adding or substituting one or more ingredients.</li> </ul>	
<b>Spring 2</b>	Art and Design Taught		
<b>Summer 1</b>	Mechanical control - make a mechanism for a moving cam model to show a sporting hero.	<ul style="list-style-type: none"> <li>• Carry out research into existing designs and products and investigate and evaluate their functional and aesthetic qualities.</li> <li>• To use learning from science and mathematics to help design and make products that work.</li> </ul>	

		<ul style="list-style-type: none"> <li>• Identify and evaluate the functional properties and aesthetic qualities of materials and components in the design process.</li> <li>• Identify and experiment with materials that can be combined and mixed to create more useful characteristics.</li> <li>• Use mechanical and electrical systems which have an input, process and output.</li> <li>• Confidently and accurately use the correct technical vocabulary for the projects they are undertaking.</li> <li>• Identify and explain how cams or pulleys or gears create movement and use in the projects they are undertaking.</li> <li>• Explore how more complex electrical circuits and components can be used to create functional products.</li> <li>• Learn how to program a computer to monitor changes in the environment and control their products.</li> <li>• Test products and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>• Consider the views of others to improve their work.</li> <li>• Look at work of <b>Ron Fuller</b> and describe the differences and similarities between their work and how it links to the children's work.</li> </ul>	
<b>Summer 2</b>	Art and Design Taught		