DT Curriculum

Intent

At the Observatory School, we offer a broad and balanced design and technology curriculum from year three to year nine.

The design and technology curriculum has a wealth of cross-curricular links in subjects such as maths, science, art and computing. These links will allow pupils to transfer skills and knowledge between these subjects.

The design and technology curriculum is engaging, enthusiastic and inspiring. Lessons will be delivered with enthusiasm to encourage pupils to engage and excel their learning within the subject.

The design and technology curriculum allows pupils to develop and expand their own ideas within their own creative learning environment. Pupils will use their own thoughts and ideas within their work.

The skills that pupils learn when they begin at the Observatory School will be carried and developed all the way through to year nine. The core skills will be consistent within all lessons.

Pupils will understand the importance of skills that they learn within their design and technology lessons. They will learn how, when and where these skills can be applied in later life.

Pupils will know the importance of such skills in everyday life and be able to apply these design and technology skills.

Pupils have a greater understanding of the world around us through horticulture and forest schools.

Implementation

At the Observatory School, we believe design and technology is a key part of education and life.

We will ensure that all pupils engage and enjoy design and technology at the Observatory school.

We will do this by:

Delivering a design and technology curriculum that allows for the learning, skills and knowledge within the subject to be transparent from year five through to year nine.

All areas from the National Curriculum will be covered within the teaching of design and technology lessons.

Offering engaging and inspiring design and technology lessons that allow pupils to learn within their own environment.

Encouraging pupils to design, make and evaluate within their design and technology learning.

Design and technology at the Observatory School will allow for learning inside and outside of the classroom.

Using a wide range of resources, equipment and tools that will allow pupils to excel in design and technology.

The Observatory School will initiate and develop links with other schools to assist with pupils learning in design and technology.

Pupils will access resources and workshops by visiting places that specialise in design and technology based education.

The key aspects of design and technology that we will focus on at the Observatory School are:

Woodwork.

Sewing and textiles.

C.A.D (computer-aided design).

Horticulture.

Environmental design and technology.

Forest school.

Impact

Pupils will have the ability to apply their design and technology skills to everyday life.

Pupils will be able to be creative and enthusiastic in their thinking.

Pupils will have an understanding around design and technology in the wider world.

Pupils will be able to use their design and technology skills to become problem solvers.

Pupils will be encouraged to take sensible risks in order to achieve.

Pupils will have a great understanding of health and safety in design and technology that can be applied to various contexts.

Pupils will be able to understand how design and technology has shaped and affected the world around us.

Key Stage 2

Year	NC link/BSq	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Stage 2 Pupils should be taught to develop their basic skills within design and technology. These basic skills will be taught through different curriculum aspects such as woodwork, environmental, sewing and textiles, CAD, horticulture and forest school. Pupils will follow design, make and evaluate in their design and technology projects. **Pupils should be taught:** 1. to design products based on a given criteria and be able to create their designs 2. to understand the importance of safety in design and technology and the impact that it can have							

3. an introduction to horticulture and forest school and the importance of this on the environment around us These skills are developed and nurtured over time with the delivery of this curriculum allowing pupils to create their own learning environment whereby they can thrive in design and technology.							
Enrichment: Visits to Tam O'Shanter Urban Farm. Visits to alternative local schools to use their design and technology facilities.							
3/4							
5/6	**Topic** Covers skills and knowledge in Steps 5, 6, 7 and 8	**Woodwork** In this woodwork unit, pupils will learn how to be safe in design and technology and the importance of being safe in a design and technology classroom. Pupils will create a rollerball game.	**Environmental** In this environmental unit, pupils will design, make and evaluate a plastic bird bottle feeder. Pupils will understand the importance of recycling and the impact that this has on the world around us.	**Sewing and textiles** In this sewing and textiles unit, pupils will design, make and evaluate puppets. Pupils will understand the basics of sewing and textiles.	**C.A.D** In this C.A.D unit pupils will learn how to use different types of computing software to create a product.	**Horticulture** In this horticulture unit, pupils will develop a basic understanding of horticulture. Pupils will also understand the importance of horticulture to us as human beings.	**Forest School** In this forest school unit, pupils will be introduced to forest school and the health and safety aspects of forest school. Pupils will learn about habitat making.
	Pupils should know... (Core	How to be safe in a design and technology classroom.	How to design a plastic bird bottle feeder against a given criteria.	How to explore ways of recycling materials such as old clothes.	Pupils will design a keyring using a given criteria.	Pupils will gain a basic understanding of what horticulture is.	Pupils will be introduced to the forest school at the school site.

	knowledge and concepts to be learned)	The importance of being safe in a design and technology classroom. Be able to use simple design and technology skills in order to achieve their intended work outcome. How to design a rollerball game based on a given criteria. Which tools are the correct tools to use to make their rollerball game. How to evaluate their rollerball game against the previously given criteria.	How to make a plastic bird bottle feeder based on their designs. How to evaluate their product against their previously given design criteria. Different cutting techniques and develop these skills. The importance of recycling and the impact that it can have. The links that we have as a school to Tam O'Shanter Urban farm and how we work with them to make for a more environmentally friendly school.	Different ways of designing puppets using these materials. How to make their design idea based on their designs. How to evaluate their final puppets against their given criteria. Basic skills in cutting work, needlework and embroidery. The basic health and safety rules surrounding the use of a needle and thread. The different types of sewing, needlework and embroidery based on requirements.	Pupils will make their keyring using the information from their design as well as the given criteria. Pupils will evaluate their product against the design criteria and their designs. Pupils will visit local schools in order to access the use of C.A.D and 3D printing devices. Pupils will gain a basic understanding of how C.A.D and 3D printing works and the communication between computer and printer.	Pupils will understand why horticulture is important to us. Pupils will begin to explore how we can utilise our horticulture skills around school. Basic horticulture skills will be introduced and developed. Pupils will research different plants and their features and requirements. Pupils will grow their own plants based on information that they have researched. Pupils will maintain their plants.	Pupils will be taught health and safety elements of how to behave appropriately at a forest school site and the importance of this. Pupils will explore the habitats of different living things in our world and look at the features of these habitats. Pupils will design, make and evaluate a habitat for an animal based on a given criteria.

	Pupils should be able to do... (Skills being developed)	Explore how different tools work. Compare tools. Join different materials.	Join different materials. Identifies why a specific material is used for a task. Joins components using a variety of methods.	To be able to cut simple shapes using scissors. Join different materials. Draw round shape templates.	Make a simple drawing to illustrate their idea. Follow a simple pictorial plan to recreate a model. Communicates about what they think about their own work.	Indicates that changes have occurred due to their actions. Identifies sweet and sour foods after tasting. Describes food with simple language. Identifies that some plants give us food.	Identifies features of their setting on an aerial photograph. Draws a simple map. Identifies some familiar physical geographic features. Describes structures using terms related to shape and position.
	Key Terminology	Design, make, equipment, materials, joinery, technique.	Materials, components, recycling, environment, criteria.	Glue, staple, stitching, textiles, needlework, recycling.	Illustrate, pictorial, recreate, communication, computer printer.	Horticulture, features, importance, humans, plants.	Habitat, living things, world, explore

Key Stage 3

Pupils should be taught to develop and utilise their skills learned within design and technology. They should be able to confidently follow the design, make and evaluate strategy and use this with an element of independence within their design and technology learning. Pupils should begin to transfer their design and technology skills across the curriculum and through wider life.

Pupils should be taught:

- to develop the creative, technical and practical expertise to perform tasks confidently.
- build and apply understanding and skills to design and make prototypes and products for a wide range of users.

- assess, evaluate and test their products and ideas of others.

All skills learned within design and technology are transferable across many aspects of the curriculum and can also be developed to have an impact on pupils in everyday life.

7	**Topic** Covers skills and knowledge in Steps 5, 6, 7, 8 and 9	**Woodwork** In this woodwork unit, pupils will design, make and evaluate desk tidy against a given criteria.	**Environmental** In this environmental unit, pupils will design, make and evaluate a recycled stationery holder.	**Sewing and textiles** In this sewing and textiles unit, pupils will design, make and evaluate a pair of slippers.	**C.A.D** In this C.A.D unit, pupils are to design, make and evaluate a shop sign for a business.	**Horticulture and Forest School** In this horticulture unit, pupils will learn to grow their own plants and vegetables. In this forest school unit, pupils will learn basic survival skills such as firemaking.
	Pupils should know... (Core knowledge and concepts to be learned)	Pupils will design, make and evaluate and desk tidy using a given criteria. Skills will be developed such as designing, measurement, cutting and wood engraving.	Pupils will design, make and evaluate a stationary holder fit for a classroom purpose. The stationary holder will hold pens and pencils and be made from recycled materials that will include a dispatch	Pupils will design, make and evaluate a pair of slippers using their own design criteria, These slippers will be made using old, recycled materials to highlight the importance of recycling. Skills that are to be developed are cutting work, needlework and embroidery.	Pupils will use 3D software and visit local places for the correct computing and printing access to allow this unit to be accessible. Pupils will create links with local business in order to create their own	Pupil will develop their based understanding of horticulture and put this into a design, make and evaluate process to grow their own plants and vegetables. Pupil will know the cycle of planting

		Pupils will apply their already solid understanding of the health and safety procedures that apply in a design and technology classroom.	lever. Pupils will design, make and evaluate the product for the classroom using a given criteria.		design criteria for this product.	and growing different types of plants and vegetables. Pupils will develop their basic understanding of forest school skills. Pupils will understand the health and safety aspects of firemaking and the times that firemaking will be applicable.
	Pupils should be able to do... (Skills being developed)	Investigates how to make a structure stiffer and more stable. Makes a product using simple tools successfully. Follows simple plans to make a product.	Make a lever with assistance. Investigate how to make a structure stronger. Makes holes in softwood using a hand drill.	Demonstrates care using tools, when supervised. Discusses and explains their ideas. Identifies tools which could be dangerous. Cares for tools and materials. Makes a structure more stable, stiff or strong after simple testing.	Creates simple programmes using symbols. Designs products for different contexts. Selects materials generally appropriate to the task when making a product.	Lists physical features of their surrounding area during fieldwork. Records their observations. Describes the effect of weather conditions. Simply describes the importance of some

							physical geographic features in their locality.
	Key Vocabulary	Evaluate, clasp, junior hacksaw, criteria, joinery, measurement.	Appearance, mechanism, lever, dispatch.	Develop, design, recycling, needlework, embroidery.		Software, printing, access, design, business.	BSquared forest school and horticulture targets.
8	**Topic** Covers skills and knowledge in Steps 7, 8, 9 and 10	**Woodwork** In this woodwork unit, pupils will design, make and evaluate a pendant box.	**Environmental** In this environmental unit, pupils will design, make and evaluate a recycled bench.	**Sewing and textiles** In this sewing and textiles unit, pupils will design, make and evaluate teddies.	**C.A.D** In this C.A.D unit, pupils are to design, make and evaluate a keyring.	**Horticulture** In this horticulture unit, pupils will design, create and evaluate their own horticulture centre.	**Forest School** In this Forest School unit, pupils will extend their current knowledge and skills including firemaking, survival skills.
	Pupils should know... (Core knowledge and concepts to be learned)	Pupils will develop their designing, making and evaluating skills within this topic. Pupils are to make a pendant box using skills already gained and will be allowed the opportunity to develop these	Pupils will use our links with Tam O'Shanter Urban farm. Pupils will visit the farm to gain an idea of the design criteria that is required for them to move forward with this project. Pupils will collect	Pupils will develop their sewing and textiles skills to design, make and evaluate teddies from recycled materials. Pupils will use surveys and gather data in order to inform and create their design	Pupils will utilise and develop their skills that they have already gained during previous C.A.D topics in order to create a keyring. These keyrings will be designed and made based on a design criteria	Pupils will design a horticulture centre using a set area of ground. Pupils will then decide the certain aspects of their horticulture centre. During this topic, pupils will be given the opportunity to	Pupils will broaden their horizons in terms of locality. Pupils will become involved with forest school sites at other locations. Pupils will assist by utilising their current skills in knowledge at

		skills. Pupils will use more complex tools and develop their cutting and sawing skills in this project.	relevant materials independently for this project. This topic will inform the importance of recycling. Pupils will use an array of tools within this topic.	criteria. Pupils will use recycled materials and consolidate their understanding surrounding the importance of recycling.	that pupils will receive from a local business. These keyrings will need to be made a on mass scale to pupils will need to consider materials and costs within their design process.	build relationships with the lower skill and assist with their horticulture lessons. Pupils will become 'horticulture buddies' with a pupil within the lower school and share their skills.	Tam O'Shanter Urban Farm.
	Pupils should be able to do... (Skills being developed)	Pupils should be able to: Choose different joints that are generally appropriate to the task. Remove rough edges using sandpaper. Saw using a junior hacksaw with some support.	Pupils should be able to: Choose different joints that are generally appropriate to the task. Remove rough edges using sandpaper. Saw using a junior hacksaw with some support.	Within this topic, pupils should be able to: Suggest how to make their structure stronger, more stable or stiffer using simple techniques. Join textiles using glue, staples or stitches. Employ simple finishing techniques to enhance their	Within this topic, pupils should be able to: Describe how improvements suggested by others would improve their final product. Explains reasons behind why the modifications were made. Decides on a criteria for a product.	Demonstrates some simple techniques e.g. podding, picking, hulling. Picks out the ingredients from a range of foods needed in a specific recipe. Recognises ways to recycle some food and drink packaging. Describes different types of farming.	Explores the information that they have collected. Answer questions about the results that they have gathered. Creates a recognisable map with symbols in a key of a familiar place. Describes similarities and differences they have found when comparing different places.

		Clasp and object in a vice with some support.		product.			Suggests some obvious effects of a human feature on the environment during fieldwork.
	Key Terminology	Joints, sandpaper, clasp, vice, junior hacksaw.	Clasp, joint, sandpaper, create, recycled.	Technique, enhanced, stitches, stable, suggest.	Criteria, modification, improve, product, purpose.	Packaging, farming, recycle, recipe, ingredients, range.	Effects, human, feature, fieldwork, environment, familiar.
9	**Topic**	**Woodwork** In this woodwork unit, pupils will design, make and evaluate a chair using a given criteria.	**Environmental** In this environmental unit, pupils are to create their own version of bug art.	**Sewing and textiles** In this sewing and textiles unit, pupils are to use design, make and evaluate to create items of clothing.	**C.A.D** In this C.A.D unit, pupils will create their own computer programme.	**Horticulture and Forest School.** In this horticulture and forest school topic, the two subjects will be combined. All skills and knowledge will be brought together during off site education.	
	Pupils should know... (Core knowledge and concepts to be learned)	Pupils will develop their woodwork skills within this project to design, make and evaluate a wooden chair.	Pupils will be given a design criteria to create a mystery bug. The mystery bug must fit within the design criteria and tick ten sections.	Pupils will create and build links with local charity shops. Pupils will receive a design criteria for a fashion range to be launched in partnership with charities.	Pupils will create their own computer programme that will work with 3D printing software. Pupils will design an advertising	Pupils will partake in expeditions and visits to areas in different locations within the country. Pupils will use all of their skills and knowledge and bring all of this together to achieve their Duke of Edinburgh award. Before completing the award, pupils will	

	Covers skills and knowledge in Steps 7, 8, 9 and 10	Pupils will research and understand different types of wood and the advantages and disadvantages of using certain wood in different contexts. Pupils will consolidate their health and safety understanding surrounding design and technology. Pupils will expand their skills in using different types of tools fit for a certain purpose.	Pupils will be given a certain amount of recycled objects to use and must make their design fit in with the criteria using this. Pupils will develop their skills using a wide range of tools.	Pupils are to design, make and evaluate a range of clothing in line with the design criteria. All products created within this unit must be done so with recycled items.	campaign and launch their software. Pupils will pitch their product to local businesses that use 3D printing software and use feedback to make modifications to their work. Pupils will then tutor lower school into how their computer software works.	make visits to various locations across the country to prepare themselves for their award. Pupils will bring together all of their survival skills, forest school skills and horticulture skills during visits away. Pupils will grow fruit, vegetables and herbs that will be utilised by school. Pupils learn how to inform people using their produce of the nutritional information surrounding the produce that they have grown.
	Pupils should be able to do... (Skills being develop	Identifies and solves their own design problems and understands how to reformulate problems given to them.	Uses a variety of approaches to generate creative ideas and avoid stereotypical responses.	Joins materials using temporary fastenings. Joins materials using permanent fastenings.	Investigates new and emerging technologies. Analyses the work of past and present	Present information gathered during fieldwork using different methods. Draws simple maps using a range of scales. Presents information gathered during fieldwork in a range of ways showing how

	ed)	Evaluates their work regularly throughout the design and makes progress. Organises practical work consistently so that processes are carried out accurately. Takes into account the properties of materials, explaining why they are used.	Works mostly to plan, correcting any mistakes with little help. Develops a detailed specification that will inform innovative and appealing design ideas that are suitable for a specific user. Employs specialist equipment to produce a product/part of a product.	Designs products to be used in different contexts. Uses a range of tools, equipment, materials and components with precision to complete a well finished product. Evaluates their work regularly through the design and making process.	professionals and others to develop and broaden their understanding. Understands the responsibilities of designers, engineers and technologists.	physical and human features of an area studied interact with each other. Uses feature specific vocabulary when describing features of physical and human geography. Evaluates the food they have prepared or cooked, giving reasons why it did or did not go to plan. Taste tests different herbs and spices, using findings to plan their inclusion in a recipe. Suggests ways to recycle foods. Recognises energy is measured in kilo joules and kilo calories.
	Key Terminology	Purpose, junior hacksaw, support, clasp, instructions.	Junior hacksaw, household, mystery, vice.	Materials, products, contexts, permanent, fastenings, clothing.	Modification, programmable, components, adaptation, programme.	Recycle, calories, joules, herbs, spices, prepared, cooking, inclusion, recipe.
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