

SUBJECT: DT CREATIVE OPTIONS

Year 9

What are the aims and intentions of this curriculum?

Design and Technology in schools develops students' skills and knowledge in design, structures, mechanisms, electrical control and a range of materials, including food. Design and Technology encourages children's creativity and encourages them to think about important and real life issues. The creative option course is aligned with the year 9 Engineering option and is practical, accessible, fun to teach and exciting to learn. It inspires students to develop real-world skills to prepare them for their future. Additionally, the course provides the opportunity to students who did not choose Engineering as an option to gain experience in the field.

During the duration of this course students will build on the skills and knowledge they have already learnt in year 7 and 8. Increasingly sophisticated resources, including dedicated teaching environments, manufacturing equipment and specific projects will be used to aid students' development. As students' progress through this phase, they will be given the opportunity to focus on specific aspects of the subject such as product design, food technology, engineering, electronics and carpentry. However, at its core, is creativity and imagination. Students will learn to design and make products that will solve genuine, relevant problems within different contexts whilst considering their own and others' needs, wants and values. To do this effectively, they will acquire a broad range of subject knowledge and draw on additional disciplines such as mathematics, English, science, engineering, computing and art.

Highlighted in green are links to PSHE in the curriculum Highlighted in blue are links to Careers in the curriculum

Term	Topics	Knowledge and key terms	Skills developed	Assessment
Carousel	Preparing for and carrying out an	Learning Aim:	Learners will be able to explain what ACCESS FM	Feedback from class
1-6	engineering activity.			discussion.
		Use research and develop design criteria to	Learners will be able to use ACCESS FM to	
	Objectives:	inform the design of innovative, functional,	analyze a design brief and create design	Grading of worksheets.
		appealing products that are fit for purpose,	specifications.	
	Recognize the importance of safety	aimed at particular individuals or groups.	Learners will become expert in using the design	Questioning and
	when using workshop tools,		process to design and manufacture their own	answering.
	equipment, machines	To be able use ACCESS FM to analyze a	products.	
	and components; and	product design specification and designs.		
			They will be able to demonstrate the safe use of	
	Recognize potential hazards in	Use CAD to design a power supply to	all tools needed to manufacture their products.	Peer assessment using
	products, activities and	precision using both orthographic projection		rubric.
	environments.	and isometric.	Use different finishing techniques to make final	
			product successful and attracted to customers.	Grading of written
	Demonstrate an understanding of	To manufacture a safety sign and a power		activities.
	risk assessment when making their	supply using a variety of tools and	Understand and respectful relationships,	
	projects.	equipment.	including friendships.	Completion and grading of
				project.

Identify the tools and equipment	Understand and use electrical systems in	Students will know that some types of
required to produce their product.	their products [for example, series circuits	behaviour within the workshop and within their
	incorporating switches, bulbs, buzzers and	relationships can be criminal intent including
Understand types of criteria	motors]	violent behaviour. Students must be informed
included in a design specification.		that if they use any tools inappropriately, they
		will be asked to leave the workshop. Students
Demonstrate an understanding of		will know that a tool used outside the workshop
how to draw isometrically and	Key words	is classified as a weapon. They will respect each
freehand.	Tools- a device or implement, especially one	other and endeavor to build positive
	held in the hand, used to carry out a	relationships.
Create isometric drawings on	particular function.	
different scales.		Linking curriculum learning to careers
	Equipment- the necessary items for a	
Use freehand to produce detail	particular purpose.	Students will know and understand the different
sketches of their products.		job roles in product design and manufacturing.
· · · · · · · · · · · ·	Design- a plan or drawing produced to show	These includes:
To be able to produce detail	the look and function or workings of a	Drafting Technician
evaluation of their projects through	building, garment, or other object before it	Electrician
the use of charts and peer	is made.	CAD Drafter
assessment		CAD Designer
	The Design Process is an approach for	Project Manager/Engineer
	hreaking down a large project into	Manufacturing Engineer
	manageable chunks. This process can be	Design Engineer
	used to define the steps needed to tackle a	Process Engineer
Projects	project and remember to hold to all of the	Piomodical Engineering
	ideas and sketches throughout the process	Mechanical Engineering
1 Students will use their	ideas and sketches throughout the process.	Wechanical Engineering
knowledge of workshop	Computer Aided Drawing (CAD): the use of	Paris first aid and Health and Provention
safety design specification	computer Alded Drawing (CAD). the use of	basic first all and freatth and Frevention
ACCESSEM and CAD to	precision-unawing software programs to	Student will understand the basis presedure if
design and make an original	accelerate the design process by making it	student will understand the basic procedure in
cefoty sign that will be	easier to create and modify draft designs.	they sustain cuts and burns from tools and
Salety sign that will be	Plan: a drawing or diagram, particularly one	soldering iron.
Suitable for an Engineering	illustrating the layout and constituent	
worksnop.	components to design a building, made by	I ney will carry out risk assessment and
	projection on a horizontal plane.	teacher will demonstrate the use of all
Select and use appropriate tools,		tools, equipment and machines.
equipment and components in the		Students will also know the procedure

to be taken in the event of accidents. All students will be thoroughly assessed and given a certificate before they are

allowed to use the machines.

equipment and components in the marking out of their safety signs.

Students can construct their safety signs using given materials, tools and equipment.

	Mental Health and Well being
2. Students will design and	
manufacture their own	Engineering has always been characterized by its
power supply	rigor, emphasis on productivity, resiliency and
demonstrating working	hard work. Student will be encouraged to come
knowledge of circuit	forwards if workload becomes too much to
assembly tools and	handle. A safe space will be provided for
equipment with codes	students to talk about their emotions accurately
regulations and	
instructional guidelines	and sensitively using appropriate vocabulary.
instructional guidelines.	
	Curriculum will be tailored so all students are
	able to access it. Teachers will know how to
	recognize early signs of mental wellbeing
	concerns.