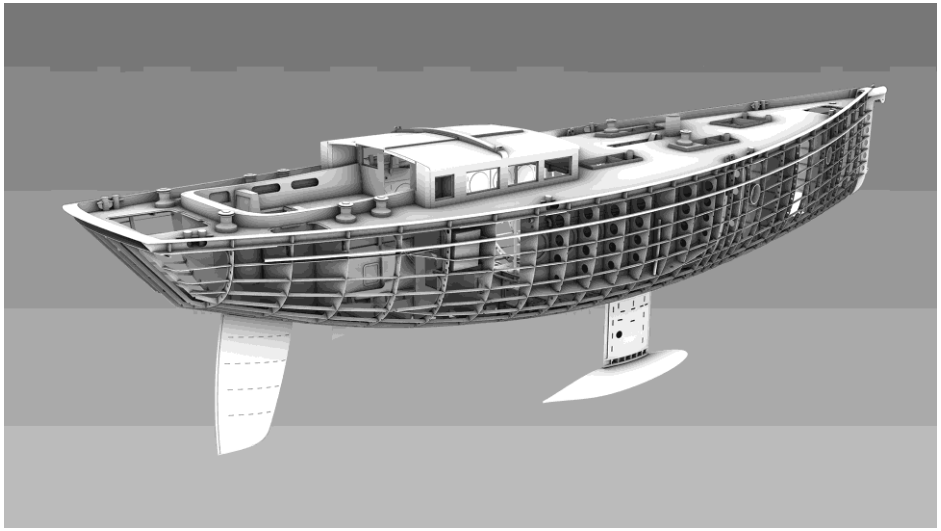
SAINT JOHN WALL CATHOLIC SCHOOL

A Catholic School For All

Departmental Schemes of Work

Curriculum Intent: "To educate each and every unique child in our care to hear and respond to what God calls them to be".

KS4 Resistant Materials



John 1:3
All things were made through him, and without him was not any thing made that was made.

Year 11 Resistant Materials Scheme of Work			
Sequencing of topics	**Year 9** Autumn term 1 & 2: C1&C2 Development of practical skills Spring term 1: C1 & C2: Maths assessment Spring term 2: C2: Product development Summer term 1: C2: Product development Summer term 2: C1: Past paper exam	**Year 10** Autumn term 1: C1: Specialist materials Autumn term 2: C1: Specialist materials Spring term 1: C2: NEA Summer Term 1&2: C2: NEA	**Year 11** Autumn term 1: C2: Contextual challenge Autumn term 2: C2: Contextual challenge Spring term 1: C2: Contextual challenge Spring term 2: C2: Contextual challenge Summer term 1: C1: Revision Summer term 2: C1: Revision. External exam
Calendared assessments	❖ Autumn Term 2: Practical activities ❖ 23rd -27th November ❖ Summer Term 2: Maths assessment, past exam papers	❖ 3rd-6th November ❖ Summer- NEA	❖ 5th -9th October- Mock 1 ❖ 24th February- 5th March- Mock 2
Career Links	❖ Architecture- https://nationalcareers.service.gov.uk/job-profiles/architect ❖ Aerospace Engineer- https://nationalcareers.service.gov.uk/job-profiles/aerospace-engineer ❖ Material Engineer- https://www.prospects.ac.uk/job-profiles/materials-engineer ❖ Shock and Dynamics Engineer- https://www.prospects.ac.uk/employer-profiles/bae-systems-19119/jobs/shock-dynamics-engineers-2682862?sortBy=dp&careers=172&size=20&page=0 ❖ Naval Architect - https://www.prospects.ac.uk/employer-profiles/bae-systems-19119/jobs/naval-architect-graduate-programme-2681075?sortBy=dp&careers=172&size=20&page=0		
Personal Development *(Cross curricular, SJW Values, SMSCV, cultural capital)*	We encourage the development of skills, knowledge and understanding that help pupils make sense of their world as an integral part of the school's work. We provide a range of experiences that encourage exploration, observation, problem solving, critical thinking and discussion. Design and technology utilises skilled acquired in Maths, Science, IT, English, RS, in fact most subjects across the curriculum **Grateful –** For the skills we have been given and the opportunities to use them. **Hopeful** – That our future needs will be met by our vocational needs **Curious** – about everything we do, don't be afraid to try new ideas and ask searching questions The teaching of design and technology offers opportunities to support the **social development** of our pupils through the way we expect them to work with each other in lessons. Our groupings allow pupils to work together, and give them the chance to discuss their ideas and feelings about their own work and the work of others. Through their collaborative and cooperative work across a range of activities and experiences in design and technology, the pupils develop respect for the abilities of other pupils, and a better understanding of themselves. Design technology builds **cultural capital** by exposing students to specialist **career pathways** and prepares pupils to take part in the development of tomorrow's rapidly changing world. Creative thinking encourages pupils to make positive changes to their quality of life.		

	The subject encourages pupils to become **autonomous** and creative problem- solvers, both as individuals and as part of a team. It enables them to identify needs and opportunities and to respond by developing ideas, and eventually making products and systems.	
Progression model	What **knowledge** will pupils develop? *(Including key terminology)*	What **skills** will pupils develop? *(Including literacy & Numeracy)*
	GCSE Design and Technology consists of two components, a single paper and a single non-examined assessment (NEA) task. The NEA tasks take the form of 'contexts' and are set each year by the awarding body. For Edexcel these will be released in June annually **<u>Component 1:</u>** **Core element:** There is a core element of the specification which all candidates have to study. This ensures that all candidates study a range of topics and material areas. This core component is tested on the examination paper with a series of questions worth a total of 40 marks **Specialist area- metals 1A:** The remainder of the content has been split up into the various specialist materials areas. Candidates have to study one of these material areas in depth in relation to the content specified. This specialist area makes up the remaining 60 marks on the paper. **<u>Component 2:</u>** **Non-examined assessment** The NEA tasks take the form of 'contexts' and are set each year by the awarding body. For Edexcel these will be released in June annually.	Foundation maths internal assessment. There is an element of maths in the final exam, students are tested to assess their level of maths. Pupils will learn about the design process and elements that will result in the manufacture of a product the is fit for purpose. Energy sources New and emerging technologies Mechanical devices Material choice Properties of materials Basic electronics Exemplar products
Development homework	CAD drawing is an important part of the course, Tinkercad is an online drawing tool. You can access it by logging on to Tinkercad.com. Create an account and work your way through the tutorials. When all tutorials have been completed skills and understanding will enable students to create and design 3D modelling using CAD	