High Tunstall College of Science Curriculum Intent

Subject: D&T Year: 10 R107

Topic: R107 - Developing and presenting engineering designs

	Design & Technology	Progress		
Topic	**Key ideas**	**R**	**A**	**G**
Developing and presenting engineering designs.	I can generate design proposals and present ideas in 2D and 3D.			
	I can annotate my ideas using my knowledge from R106.			
	I can use 3D software to develop my ideas.			
	I can create developed drawing in 3D on onshape.			
	I can use engineering drawing techniques to present a final design.			
	I can conclude my project by evaluating my designs.			

Lesson 1	Learning Focus	Assessment	Key Words
1 **2** **3**	Pupils to produce 2 isometric and 2D drawings based on the exam board set specification. Pupils to produce 2 isometric and 2D drawings based on the exam board set specification. Pupils to produce 2 isometric and 2D drawings based on the exam board set specification.	R107LO1: Be able to generate design proposals using a range of techniques	freehand sketching in 2D and 3D o rendering using shade, tone and texture
4-6	Pupils to annotate their drawings and make sure their rendering is of a high quality.	R107LO1: Be able to generate design proposals using a range of techniques	annotation and labelling techniques that demonstrate design ideas (e.g. show key features, functions, dimensions, materials, construction/manufacture methods, access to components, areas for further investigation)
7-8 **9-10** **11-12**	Pupils to be taught the 3D software and start to develop their own designs on the software. Pupils produce 2 CAD drawings. Pupils to annotate their drawings.	R107LO2: Know how to develop designs using engineering drawing techniques and annotations	3D engineering drawings (e.g. isometric and oblique, exploded views, assembly drawings) , 2D engineering drawings (e.g. 3rd angle orthographic, scale, dimensions, materials, parts lists, sectioned, relevant notes and annotations)
13-15	Pupils to develop a final design on onshape.	R107LO2: Know how to develop designs using engineering drawing techniques and annotations	3D engineering drawings (e.g. isometric and oblique, exploded views, assembly drawings) , 2D engineering drawings (e.g. 3rd angle orthographic, scale, dimensions, materials, parts lists, sectioned, relevant notes and annotations)
16-20	Pupils to use engineering drawing techniques to produce engineering drawings of their final design. Pupils need to produce 2 2D and 23D drawings.	R107LO3: Be able to use Computer Aided Design (CAD) software and techniques to produce and communicate design proposals	CAD applications to produce and communicate design proposals (e.g. draughting, 3D modelling, rendering, assemblies, animation) • techniques used to communicate design proposals (e.g. display boards, models, PowerPoint)
21-22	Pupils to conclude their work and evaluate heir designs. Finish all outstanding work. Using high level presentation skills.	R107LO3: Be able to use Computer Aided Design (CAD) software and techniques to produce and communicate design proposals	CAD applications to produce and communicate design proposals (e.g. draughting, 3D modelling, rendering, assemblies, animation) • techniques used to communicate design proposals (e.g. display boards, models, PowerPoint)