

Preparation for induction Assessment

When you arrive into the SJSF you will take an examination. To prepare for this assessment you will need to engage in the activities below.

1. Review Pythagoras and Trigonometry, (this is part of GCSE maths)
2. Learn how to draw gear schematics. Learn how to calculate gear ratios for simple and compound gear systems (this is part of the syllabus for GCSE Design and Technology), more information can be found at:
(<http://www.technologystudent.com/gears1/geardex1.htm>)
3. Part of your assessment will involve sketching and designing. Within this you will be expected to draw on your knowledge of gears (see above) and mechanisms, more information on mechanisms can be found at the link below. Mechanisms includes cams, followers, and links. More information can be found here:
(<http://www.technologystudent.com/cams/camdex.htm>).
4. Practice 2D and 3D sketching. Take a domestic product and sketch these from observation (toaster, kettle, iron, etc).
5. Research materials which are under '5.2 What materials and components should be selected when designing and manufacturing products and prototypes in Design Engineering?' – this is on page 18 of the specification. Your knowledge of materials must move on from more than '*wood, metals and polymers*' and into specific materials.

Induction work for an effective start –

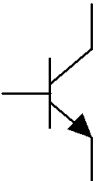
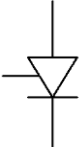
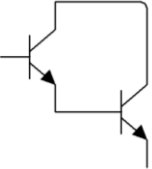
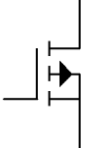
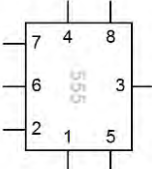
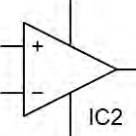
- Review the Specification for Design Engineering

<https://www.ocr.org.uk/Images/304609-specification-accredited-a-level-gce-design-and-technology-h404-h406.pdf>

- Research of iterative designing, what is it?
- View the following video on creating innovative briefs.
<https://www.youtube.com/watch?v=CnKeVs-9zs>
- Exploring stakeholders and contexts. What opportunities are there in the real world that you could design to?
- Download the Arduino IDE or sign up to the Arduino Web Editor
<https://www.arduino.cc/en/main/software> then research/explore/create using the software to prepare.

- Below are common components that are used in Electronics. Research their uses and understand their applications

Photograph	Switch Type	Uses and Application
	Toggle	
	Slide switch	
	Rocker switch	
	Key Switch	
	Push to Make switch	
	Push to Break	
	Tilt Switch	
	Micro Switch	
	Reed Switch	

Symbol	Name	Purpose, Potential Application
	TRANSISTOR	
	THYRISTOR	
	DARLINGTON PAIR	
	FIELD EFFECT TRANSISTOR	
	555 TIMER	
	OPERATIONAL AMPLIFIER	