Year 10 Knowledge Organiser

Technical principles

Core knowledge & understanding

- Design and technology and our world
- Smart materials
- Electronic systems and programmable components
- Mechanical components and devices
- Materials

Plus at least one from

In-depth knowledge & understanding

a. Electronic systems, programmable components & mechanical devices

b. Papers & boards

c. Natural & manufactured timber

d. Ferrous & non-ferrous metals

e. Thermosetting & thermoforming plastics

f. Fibres & textiles

Designing and making principles

Core knowledge & understanding	Plus	In-depth knowledge & understanding (in relation to at least one of a to f above)

REQUIRED SKILLS FOR THE NEA:

I must be able to talk about the following areas :

◊ **Design Problem—** How could you overcome specific issues surrounding the problem you have chosen to solve?

◊ **Design Specification—** What are the specific needs of the product to be able to fulfil your design brief?

◊ **Iterative Design—** How to present ideas. How to develop an idea using reiteration. Why it is important that ideas meet the Specification. How to design using CAD.

◊ **Practical—** How to make using CAM.

◊ **QA / QC—**What is the difference between Quality Assurance and Quality Control and how can you use these processes to make sure that you have manufactured a quality outcome?

Key words

RESISTANT MATERIALS

Know your keywords—

can you SPELL and DEFINE them?

Useful web link:

www.technologystudent.com/

Design brief	Quality control (QC)	Testing
Design Specification	Practical	Evaluation
Analysis	Manufacture	Aesthetics
Target Market	Industry	Safety (HSE)
Client / Consumer	One—off proto-type	COSHH—Control Of Substances Hazardous to Health.
Iterative designing	Batch production	
Design development	Mass Production	RA—5 Step Risk Assessment
Annotation	Continuous Production	Hardwood
Modelling	JIT	Softwood
CAD— Computer Aided Design	Orthographic Projection	Manufactured boards
CAM— Computer Aided Manufacture	Manufacturing Specification	Plastics—HIPS and Acrylic
Function	Modifications	Metal—Mild Steel
Quality Assurance (QA)	Improvements	Plastic dip coating

Extended learning

Design and technology and our world —The impact of new and emerging technologies on industry, enterprise, sustainability, people, culture, society and the environment, production techniques and systems.

Critical evaluation of new and emerging technologies informs design decisions.

How energy is generated and stored in order to choose and use appropriate sources to make products and to power systems.

Legislation, Global production, Consumer rights, British standards, FSC

The 6 R's, Fair trade policies and the Carbon footprint, Life Cycle Analysis and Ecological footprint.