Subject – Introduction Project	Year 7	Term Autumn 1st Half	Topic - Design & Technology Introduction

Material Categories	
Wood	Hardwood, softwood and manufactured boards
Metal	Ferrous, Non Ferrous and Alloys
Plastic	Thermo and Thermosetting
Paper/ board	Board is thicker and more rigid than paper

Structures – Forces	
Shear	**forces** acting in **opposite directions** and cause parts of a structure to want to **slide past** one another
Tension	**forces** acting to **stretch** a structure, **pull** it apart.
Compr-ession	**forces** directed **towards** each other, causing an structure to be **squashed**.
Torsion	**forces** acting to **twist** structures

Environmental Responsibilities – 6Rs	
Recycle	Take an existing product that has become waste and reprocess the material to use in a new product.
Rethink	Ask whether we can sustain our current way of life and the way we design and make.
Repair	When a product breaks down, or doesn't function properly, try to fix it.
Reuse	Take an existing product that has become waste and use the material or parts for another purpose, without processing it.
Refuse	Don't use or buy a product if you don't need it or if it's unsustainable.
Reduce	Minimise the amount of material or energy used.

Product Analysis – ACCESS FM	
Aesthetics	Use adjectives to describe the look/style of the product (bright, dull, Functional, decorative, textured, smooth, shiny etc)
Client/ User	Who is it intended for? (age, gender, activity or profession) and why? ? Is it **inclusive** design?
Cost	What is the cost (estimate if necessary)? Is this reasonable & why?
Environment	product affect the environment? ($CO^{2,}$ Global warming, pollution, renewable/non renewable sources of energy or materials, 6Rs &, ethical sources etc.)
Safety	What has been done to avoid/minimise risks to health when using the product? Are there any restrictions (I.e. age) or standards that it meets? (BSI)
Size/Shape	size in mm, estimate dimensions if non given. What is the shape/form? H*as anything to make it ergonomic? (Overall shape, grooves, textured, etc)*
Function	What is the product intended to do? Are there any special features that make the product more or less successful?)? What is the main purpose of the product? How is it designed to fulfil the need of the user? Does it have any other features?)
Materials Methods of Manufacture	What material and standard components is the product made from and why (properties)? What process were used to manufactured it?

Design Key words	
Brief	A **short description** of how the design problem can be solved.
Research	**finding information** about the needs and wants of the user, learning out about existing products, materials and processes.
Specification	A **list** of **measurable** design criteria, that the design must, should or could do.
Designing	Generating **thoughts** of possible **solutions** communicated through **sketches**, **CAD** drawings and **sketch models**.
Evaluation	Comparing the **idea** or **prototype** to the design **specification** to identify how successful it is and it how it can be improved.
Feedback	**Where** the client gives their **opinion** during the design process
Prototypes	A **working model** that can be tested against the specification.
Inclusive	How a design meets the diverse needs of people (i.e. capability, needs and aspirations)
Primary Processing	How **raw** materials are changed into **usable** materials i.e. Fractional **Distillation** - Crude oil into plastics, **Seasoning** - trees into wood, **Smelting** - ores into metal, **Pulping** plants into paper/card

Tools, resources & machines			
Try Square	Marks out lines at 90^0 to an edge	**Sand Paper**	Smooths wood
Tenon saw	Cuts straight lines in wood	**Belt Sander**	Shapes and smooths wood
Coping Saw	Cuts curved lines in wood, metal or plastic	**Pillar Drill**	Makes holes in materials

Command Words	
Name	Recall one or more pieces of information.
State	Write down what the term in the question means.
Give	Recall one or more pieces of information.
Describe	Give an account in words of someone or something including all of the relevant characteristics, qualities or events.
Explain	Make an idea, situation or problem clear by describing it in detail revealing relevant data or facts
How	Discuss the creation of something giving specific references to support.