

# Year 10 exam Knowledge Organiser

Useful web link: [http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2016-17/16-17\\_1-4/website/index.html](http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2016-17/16-17_1-4/website/index.html)

## Technical principles

Core knowledge & understanding		In-depth knowledge & understanding
<ul style="list-style-type: none"> <li>Design and technology and our world</li> <li>Smart materials</li> <li>Electronic systems and programmable components</li> <li>Mechanical components and devices</li> <li>Materials</li> </ul>	Plus at least one from	<ul style="list-style-type: none"> <li>a. Electronic systems, programmable components &amp; mechanical devices</li> <li>b. Papers &amp; boards</li> <li>c. Natural &amp; manufactured timber</li> <li>d. Ferrous &amp; non-ferrous metals</li> <li>e. Thermosetting &amp; thermoforming plastics</li> <li>f. Fibres &amp; textiles</li> </ul>

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

## Designing and making principles

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

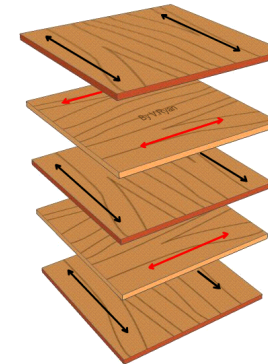
**Thermochromic revision:** [http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2016-17/16-17\\_1-4/website/category/2/smart-fibres/thermochromic.html](http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2016-17/16-17_1-4/website/category/2/smart-fibres/thermochromic.html)

**Environmental Impact:** [http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2016-17/16-17\\_1-4/website/category/1/ethics\\_and\\_the\\_environment/environmental\\_issues/index.html](http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2016-17/16-17_1-4/website/category/1/ethics_and_the_environment/environmental_issues/index.html)

**Velocity ratio:** [http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2016-17/16-17\\_1-4/website/category/4/functions\\_of\\_mechanical\\_devices/mechanisms\\_and\\_calculations/index.html](http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2016-17/16-17_1-4/website/category/4/functions_of_mechanical_devices/mechanisms_and_calculations/index.html)

**Natural and manufactured timber:** [http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2016-17/16-17\\_1-4/website/category/5/2natural\\_and\\_manufactured\\_timber/natural\\_and\\_manufactured\\_timber/index.html](http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2016-17/16-17_1-4/website/category/5/2natural_and_manufactured_timber/natural_and_manufactured_timber/index.html)

**Plywood** is a wood-based panel product comprised of a collection of veneers that are glued together with a synthetic resin. To sum up the production process; logs are peeled into veneers, the veneers are lathered in glue, laid up so that the grain direction of each veneer is perpendicular to its adjacent veneer, pressed together, trimmed and sanded. (See diagram)



**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.