Materials Design and Technology

Resource lists—Combined

Materials Design and Technology

RESOURCE LISTS—COMBINED

This list of resources was prepared using the advice provided by the Course Advisory Committee.

This list is prepared in the following parts:

PART 1: INTRODUCTION/SELECTION PROCESS

PART 2: PRINT RESOURCE LIST

PART 3: WEB RESOURCE LIST

PART 4: MULTIMEDIA RESOURCE LIST

PART 1: INTRODUCTION/SELECTION PROCESS

Selection guidelines

The selection of resources is the responsibility of each school and the following points need to be considered at all times:

- The lists are recommendations only and are not exhaustive. Each school should decide on specific titles for their students in consultation with their school community and sector guidelines.
- Some courses have set texts. Check the current syllabus.
- The recommended resources are to be used to support teaching and learning only and not as a substitute for the syllabus; the syllabus is what is used to develop examination questions and all teaching should be directly linked to the syllabus.
- Any selection process requires the use of the current syllabus. Syllabus documents are subject to changes. Users who down load and print copies of a syllabus are responsible for checking for updates. Advice about any changes made is provided through the School Curriculum and Standards Authority communication process.
- The perspectives and views expressed in the resources are not endorsed as such but are provided for classroom discussion and comparison within the context of appropriate teaching and learning activities. Some resources need to be used with sensitivity and care.

Types of resource lists

The following resource lists are provided for this course: Introduction which includes Guidelines, Process, Professional Associations/Suppliers and Journals; Print materials; Multimedia; Websites and a combined list for printing.

Selection process

Step 1: Read the current syllabus
Check the School Curriculum and Standards Authority website to see if you have the current syllabus; check the eCircular to see if any minor changes have been made.

Step 2: Narrow the choice of resources to match the decisions made by your school. Check the following:

- which stage/s does your school offer – Stage1, 2 or 3 or P units?
- which units are being offered – 2A and 2B, 3A and 3B ?
- which units are being taught this semester/year?
- what is the focus of the units being taught?
- what are the context/s being taught?
  For Materials Design and Technology the contexts are Metal, Textiles and Wood for all stages and units. Check the syllabus.

Step 3: Some of these resources may be in your school. Check your library and the relevant learning area library.

Step 4: Check if the course has set texts
There are no set texts for Materials Design and Technology.

The following links will direct you to websites outside the School Curriculum and Standards Authority site. The Authority has no control over the content of materials accessible on the sites that are cross-referenced. It is the responsibility of the user to make decisions about the relevance and accuracy, currency and reliability of information found on these websites. Linking to these sites should not be taken as endorsement of any kind. We cannot guarantee that the links will work all of the time and we have no control over availability of the linked pages. It is your responsibility to check that this information is accurate.

Professional Associations

- http://www.dattawa.org/
  Design and Technology Teachers' Assoc. (WA) Inc.
- http://heiawa.com.au/
  Western Australian Division of the Home Economics Institute of Australia
- Technology Education Federation of Australia
- Industrial Technology and Design Teachers' Association

State Courses and Documents
Relevant information can be found in interstate curriculum. For example,

- ***NSW HSC Online***
  http://hsc.csu.edu.au/
  Sydney: NSW HSC Online courses of study

  Design and Technology [NSW]

  Industrial Technology [NSW]

Textiles and Design [NSW]

- ***Victorian Curriculum and Assessment Authority***
  http://www.vcaa.vic.edu.au/vce/studies/designtech/destechindex.html

- ***Queensland Studies Authority***
  http://www.qsa.qld.edu.au/2161.html

- ***South Australian Curriculum Standards and Accountability***
  http://www.sacsa.sa.edu.au/index_fsrc.asp?t=LA

PART 2: PRINT RESOURCE LIST

Design

GLOVER, N. (2006). *Design and Technology: Preliminary and HSC*, First Edition, Thomson Learning Australia ISBN-13: 9780170130721

LIVETT, J. & O'LEARY J (2006). *Design and Technology: VCE Units 1–4*, Second Edition, Thomson Learning Australia ISBN-13: 9780170130639

Metals

ABLESON, B.A & PATEMAN, A.J. (1988). *Metalworking Part One* (2nd ed.) McGraw-Hill Sydney ISBN 0 07 452582 4

ABLESON, B.A & PATEMAN, A.J. (1988). *Metalworking Part Two* (2nd ed.) McGraw-Hill Sydney ISBN 0 07 452622 3

SCHLYDER, D.A. (2005). *Engineering: an industry study for secondary schools*, PCS Publications ISBN 1876135557

SCHLYDER, D.A. (2001–2005). *Engineering: Workbooks*, PCS Publications

- Part one ISBN 1876135174
- Part two ISBN 1876135190
- Part three ISBN 1876135212
- Part four ISBN 1876135221

Textiles

CHRISTINE CASTLE, C. & PETERS, L. (2007). *Textiles and Design. Preliminary & HSC* Thomson Learning Australia ISBN 9780170133111

RIDGEWELL, T. (2006). *Textiles Technology First*, Pearson Education Australia. ISBN 0733974929

Wood

WALTON, J. A. (1979). *Woodwork in theory and practice*, Random Australia. ISBN 090088262X

LEADBEATTER, B. & LEADBEATTER, M. & Keable, J. (2007). *Woodworking. Part one*, McGraw-Hill. ISBN 9780074716755

LEADBEATTER, B. & LEADBEATTER, M. (2007). *Woodworking. Part two*, McGraw-Hill. ISBN 0074709739

SCHLYDER, D.A. (2001–2005). *Furnishing: Workbooks*, PCS Publications.

- Part one ISBN 1876135476
- Part two ISBN 1876135492
- Part three ISBN 1876135514
- Part four ISBN 1876135530

SCHLYDER, D.A. (2005). *Furnishing: an industry study for secondary schools*, PCS Publications. ISBN 1876135468

PRANGE, B. & KELLY, M. (1994). *Wood and technology*, Cambridge University Press. ISBN 0521438225

PART 3: WEB RESOURCE LIST

Safety

Worksafe – WA Gov Dept of Commerce
http://www.worksafe.wa.gov.au/smartmove/index.htm

Design

Design process [website] / V. Ryan
http://www.technologystudent.com/designpro/despro1.htm
England : V. Ryan, 2001

Design: 1975-present [website]
http://www.metmuseum.org/toah/hd/dsgn4/hd_dsgn4.htm
New York : Metropolitan Museum of Art, 2007

Doodles, drafts and designs [website]: industrial drawings from the Smithsonian
http://www.sil.si.edu/exhibitions/doodles/index.htm
Washington, D.C.: Smithsonian Institution, 2004

Design Institute of Australia [website]. Directory, resources and descriptions of all fields of design
http://www.design.org.au/index.cfm?id=240
or
http://www.dia.org.au/
Melbourne: Design Institute of Australia, 2002

Design & Technology UK materials
http://designandtech.com/

ATW UK resources for Design & Technology
http://www.design-technology.info/home.htm

Design & Technology Teachers UK
http://www.data.org.uk/

Metal Context

Arts & Craft Movement information and different skills
http://www.artsandcraftsmetalwork.com/

GCSE Design & Technology resistant materials
http://atschool.eduweb.co.uk/trinity/projects/material/

Vocational Information Centre - Machining
http://www.khake.com/page88.html

Cambridge University Teaching packages
http://www.doitpoms.ac.uk/tlplib/index_az.php

Textiles Context

Range of different uses for fabrics and information
http://www.fabrics.net/

History of fashion
http://www.fashion-era.com/

Dictionary of sewing terms
http://www.thesewingdictionary.com/

Fashion industry information and resources
http://www.apparelsearch.com/

Wood Context

Fine Wood Work Association (WA) Inc.
http://www.fwwa.org.au/

Glossary of timber/wood terms
http://oak.arch.utas.edu.au/glossary/glossary.pdf

Design & Technology UK resistant materials
http://www.designandtech.com/resistantmaterials/

Resources UK range of topics
http://www.spartacus.schoolnet.co.uk/REVdt.htm

Amateur Woodworker online magazine
http://www.am-wood.com/index.html

Woodworking online magazine
http://woodworking.com/ww/ww.aspx

Fine Woodworking magazine
http://www.finewoodworking.com/pages/fw_articleindex.asp

National Association of Forest Industries
http://www.nafi.com.au/site/

Forest Industries Federation (WA)
http://www.forestindustries.com.au/

Australian Treated Pine
http://www.atpine.com.au/technicalinfo.htm

Australian Timber database
http://www.timber.net.au/

PART 4: MULTIMEDIA RESOURCE LIST

Design

Elements and Principles of Design **Video Education Australasia: 2004**
30 minutes

This program explains the elements used in visual design and then explains how these can be arranged and organised using the principles of design. It draws on real life examples used in 2D visual communications and designs: poster, information, web and magazines and 3D: product and built environments. Diverse descriptions of each element and principle using both theoretical and practical explanations are included in this program. Examples of the impact of the use of the elements and principles including traditional theories and how they are successfully used throughout the evolution of design are provided throughout this presentation.

Inclusive Design **VEA: 2010**
26 minutes

How Industry Designs for the User
How do professional designers research their potential market to ensure they come up with designs that meet the needs of users and are inclusive, irrespective of age or ability? This program uses three examples drawn from: textiles (a smart cushion for care homes), resistant materials (children's bikes) and graphics/packaging (mobile phone box/manual). It looks at how designers consider the values and needs of users, how they determine the intended market or user for their product and how they make use of ergonomics and anthropometrics. It also discusses how demographic change is a major challenge to the design profession, increasingly the effects of a rapidly ageing population and a growing number of people with disabilities.

Safety

Safety in the Workshop, (general wood and metal workshops) **VEA: 1998**
16 minutes

Safety in the Workshop' illustrates key concepts relating to workshop safety. We look at protecting the body when using hand tools as well as fixed machines (lathe, bench drill, disk sander, bandsaw, circular saw, jointer, thicknesser, grinder), and portable hand tools (saw, drill, router, sander, jigsaw, angle grinder, planer). We also cover electrical safety and general housekeeping.

Safety in the Workshop – Avoiding Accident and Injury (woodworking) **VEA: 2009**
22 minutes

The workshop is an inherently dangerous place and as such safety and safe work practices must be the first priority in the layout of a workshop, and always in the minds of those who use it. This Australian-made, curriculum fit program examines the main considerations when it comes to safety in the workshop. Using a woodworking workshop to demonstrate universal safety principles, Philip Ashley and Chris Beck from Holmesglen TAFE stress the importance of using safety equipment, setting up a well-designed work area, correct use of hand and power tools, ongoing maintenance and first aid.
Chapters: 1. Introduction; 2. Safety Equipment; 3. Work Area; 4. Hand Tools; 5. Power Tools; 6. Maintenance and First Aid; 7. Conclusion.

Metal

Metals
VEA: 2010
19 minutes

Practical Use of Materials
Metal is all around us. From the cars on the road to the staples we use in the office, metal is one of the most common, flexible and naturally occurring materials used in modern design. In this informative program we discuss the use of metal as a practical material in detail. We look at its origin, characteristics, where aluminium comes from, and its many uses. Two case studies are also provided that outline the processes involved in making goods out of metal to be used in industry. This program highlights to viewers the important role metal plays in the design and manufacture of new and existing products.

Machining: Cutting Material
VEA: 2004
28 minutes

This training program demonstrates the how and why of cutting materials. It covers a wide range of cutting processes including: power hacksaws, bandsaws, oxyacetylene, plasma arc, water jet, wire cut, laser beam and ultrasonic machining. The processes are fully explained with the aid of computer graphics.

Welding: Metallic Materials—Part A
VEA: 2004
20 minutes

This is Part A of a two part program on welding processes typically used in industry. The program examines the production of stick electrodes, manual metal arc welding, submerged arc welding, gas tungsten arc welding (TIG) – manual and automated, keyhole gas tungsten arc welding, resistance welding including projection and spot welding, laser beam welding and electron beam welding. The program shows, with the aid of computer graphics, how the processes work - their advantages, limitations and typical areas of application of each process.

Welding: Metallic Materials—Part B
VEA: 2004
29 minutes

This is Part B of a two part program on welding processes typically used in industry. The program examines gas metal arc welding (MIG), determination of pre-heat and the post heat treatment of welds, narrow gap welding, flux cored arc welding – gas and self shielded, plasma transferred arc welding, friction stir welding, oxy-acetylene welding and thermit welding. The program shows, with the aid of computer graphics, how the processes work - their advantages, limitations and typical areas of application of each process.

Textiles

Textiles
VEA: 2010
18 minutes

Practical Use of Materials
From top designer clothing lines to the Australian flag, these designs have been created from one of the most flexible and practical materials - fabric. In this program viewers are introduced to the world of textiles. We learn how textiles are categorised - their characteristics and properties; factors involved in sourcing textiles; the importance of testing fabrics; the dyeing of textiles; and how 'textile finishes' work. We also hear from a number of professionals who work in the textile industry. This program will aid budding designers in how to choose and use the most suitable fabric for their own end product.

Design: All About Textiles **VEA: 2010**
20 minutes

Today there are many different types of textiles that are available to us, each with their different properties, strengths and range of uses. Getting to know their properties is vital for any student of textiles today. In this program interior designer Brandi Hagen showcases textile samples and explains different types of natural and synthetic fibres, fabric construction and surface designs. In this program we examine the properties of natural fibres such as cotton, flax, jute, sisal and bamboo; synthetic fibres such as nylon, polyester, rayon, acrylic and microfibers, and animal fibres such as wool and silk. We also look at fabric construction and surface designs.

Sew Cool **VEA: 2010**
43 minutes

Discover how sewing can be 'Sew Cool!' In this excellent DVD resource we start off with the basics of sewing and take burgeoning designers all the way up to creating a stylish project of their own. Topics covered include: sewing tools and essentials, hand sewing, fabric selection, sewing techniques and rules, and sewing machine parts. Filled with clear examples and demonstrations, and presented by a real expert, this is a terrific introduction to the power of the thread and needle. The program also features comprehensive support notes and two sewing projects - a non-pattern and pattern project.

Wood

Timber: Production and Processing—Part A **VEA: 2004**
31minutes

This is Part A of a two-part program on the production and processing of timber. The program includes computer graphics which demonstrate methods of sawing, the structure of a tree trunk and the drying process, and optical microscope and electron microscopic examination of timber structure. It covers classification and structure - hardwoods, softwoods; harvesting - clear felling, shelter trees, plantations; structure of a tree trunk; saw milling - back sawn, quarter sawn, radial sawn; drying of hardwoods; use of hardwoods - structural timbers, flooring, fine furniture.

Timber: Production and Processing—Part B **VEA: 2004**
33minutes

This is Part B of a two-part program on the production and processing of timber. The program includes computer graphics of mechanical timber grading and the CSIRO's pilot MDF plant. It covers characteristics of commercial softwoods; plantation management – propagation, thinning, clear felling; milling, drying and grading; finger jointed clear grade mouldings; particle board; microwave modification of timber; glue laminates; engineered I beams; log veneers – plywood; laminated veneer lumber (LVL); decorative veneers; medium density fibre board – MDF

Other multimedia sources of information

Classroom Video Victoria 2011 http://www.classroomvideo.com.au/
Marcom Projects, Qld: 2006 http://www.marcom.com.au/