



Government of **Western Australia**
School Curriculum and Standards Authority

SAMPLE ASSESSMENT TASKS

MATERIALS DESIGN AND TECHNOLOGY
GENERAL YEAR 11

Copyright

© School Curriculum and Standards Authority, 2014

This document – apart from any third party copyright material contained in it – may be freely copied, or communicated on an intranet, for non-commercial purposes in educational institutions, provided that the School Curriculum and Standards Authority is acknowledged as the copyright owner, and that the Authority's moral rights are not infringed.

Copying or communication for any other purpose can be done only within the terms of the *Copyright Act 1968* or with prior written permission of the School Curriculum and Standards Authority. Copying or communication of any third party copyright material can be done only within the terms of the *Copyright Act 1968* or with permission of the copyright owners.

Any content in this document that has been derived from the Australian Curriculum may be used under the terms of the [Creative Commons Attribution-NonCommercial 3.0 Australia licence](#)

Disclaimer

Any resources such as texts, websites and so on that may be referred to in this document are provided as examples of resources that teachers can use to support their learning programs. Their inclusion does not imply that they are mandatory or that they are the only resources relevant to the course.

Sample assessment task

Materials Design and Technology – General Year 11

Task 1 Part A – Unit 1

Assessment type: Design

Conditions

Period allowed for completion of the task: three weeks

Task weighting

7% of the school mark for this pair of units

Design proposal and investigation

Use the design process to design a product for your own use, using all or some recyclable materials.

(30 marks)

What you need to do

Develop the first part of a design folio, including all of the following:

- Statement of problem and intent
- Investigation (using available research resources)
 - set design criteria applicable to personal design needs
 - limitations
 - list of possible useable recycled materials
 - list of available materials and equipment
 - research and investigate existing, and similar, designs
 - include your sources of information
 - identify design fundamentals, as well as structural and workability properties of recyclable materials
- Choose materials based on the relationship of material properties to design, function, cost and safety
- Identify the different available finishes and explain the need for a finish
- Devise and develop concept-design sketches incorporating the elements of design
 - adapt design ideas using annotated graphics and sketches
- Present a rendered sketch of final solution, including any likely applied finish

What needs to be submitted for assessment	Due dates
<input type="checkbox"/> Statement of problem and intent	
<input type="checkbox"/> Listing of materials	
<input type="checkbox"/> Research on existing ideas/concepts	
<input type="checkbox"/> Annotated concept sketches showing concept development	
<input type="checkbox"/> Final sketch of proposed solution	

Marking key for sample assessment task 1 Part A

Design folio – statement, investigate and devise	Maximum possible mark	Allocated mark
Provides a statement defining a need or purpose for the product <ul style="list-style-type: none"> includes clear statements about function, aesthetics, safety, cost considerations and limitations includes general statements about the likes and dislikes covers broad areas of the design problem in limited general terms only 	3 2 1	/3
Provides information on materials (recycled and new) using internet, print media and other sources <ul style="list-style-type: none"> detailed comparisons, using design considerations, between a selected number of different materials, supported by images a number of different examples with notes describing the differences a selection of ideas of a single material with some notation about likes/dislikes collection of materials, dissimilar images and few notes 	4 3 2 1	/4
Provides information about existing products <ul style="list-style-type: none"> number of carefully selected different examples and images, with source referencing, using the design considerations to make detailed comparisons comparisons between a number of carefully selected different examples and images against the design considerations a number of different examples with notes describing the differences a selection of ideas of a single example with limited annotation about likes and dislikes collection of dissimilar images and few notes 	5 4 3 2 1	/5
Complete sketches of possible shapes, joins, specific features, likely dimensions and notes on likely finishes <ul style="list-style-type: none"> detailed, well-proportioned sketches showing progression from concept ideas to specific ideas; parts, showing relevant joining methods with appropriate specific dimensions; other materials and finishes well-shaped sketches that show concept ideas, including other materials, joining and appropriate overall dimensions sketches that show development of mainly a single concept idea, some materials and joining, some dimensioning collection of dissimilar sketches, limited design progression with few notes 	10–12 7–9 4–6 1–3	/12
Includes final three dimensional rendered sketch of proposed solution showing any relevant likely finish <ul style="list-style-type: none"> well-drawn, correctly proportioned three dimensional colour rendered representation of the proposed product, showing clear development from the concept stage well-drawn representation of solution representation of solution, but with minor errors or missing detail 	5–6 3–4 1–2	/6
Total		/30

Sample assessment task

Materials Design and Technology – General Year 11

Task 1 Part B – Unit 1

Assessment type: Design

Conditions

Period allowed for completion of the task: three weeks

Task weighting

5% of the school mark for this pair of units

Devise product and production plan

Use a design process to prepare drawings, patterns or templates and then develop a production plan to manufacture the product. **(15 marks)**

What you need to do

Develop the second part of a design folio, including the following:

- Create simple working drawing/s or develop a template or select pattern
 - use conventions suitable to context
 - select and show methods of joining
- Select and list materials
- Calculate simple cutting/costing list/s
- Produce a basic plan and timeline for production

What needs to be submitted for assessment	Due dates
<input type="checkbox"/> Working drawings or template or pattern for product	
<input type="checkbox"/> Materials/parts list, costing and order form	
<input type="checkbox"/> Work schedule/production plan	

Marking key for sample assessment task 1 Part B

Design folio – proposed solution and pre-production	Maximum possible mark	Allocated mark
Presentation of working drawing/s or template or selected pattern <ul style="list-style-type: none"> • well-drawn, correctly labelled view/s with clear accurate dimensioning • well-drawn views with correct major dimensions • views with majority of correct dimensions, but with minor errors 	5–6 3–4 1–2	/6
Completed list of materials and order form, plus any additional parts <ul style="list-style-type: none"> • logical presentation of a complete and correct naming of materials, list of all individual parts with accurate sizes, correct total cost and completed order form • clear list of materials and parts with correct sizes, costing completed • list of materials with approximate sizes and calculated approximate cost • list of materials with approximate cost • incomplete list of parts 	5 4 3 2 1	/5
Proposed steps for manufacturing <ul style="list-style-type: none"> • logical list of preferred methods of making and fitting the parts of the project together with correct tools and correct procedures • correct procedures listed with available tools for making the project • outline, with limited detail about procedures and tools for making the project • partial list of procedures and tools 	4 3 2 1	/4
Total		/15

Sample assessment task

Materials Design and Technology – General Year 11

Task 1 Part C – Unit 1

Assessment type: Response

Conditions

Period allowed for completion of the task: one week, completed by Week 17

Task weighting

2% of the school mark for this pair of units

Evaluation of completed product

Evaluate finished product by responding to evaluation questions

(20 marks)

What you need to do

Write clear statements to evaluate the project

Comment on the following key points, using relevant or all minor dot points:

- Did the product meet the design requirements?
 - compare product against design ideas and final drawings
 - comment on aesthetics, appearance, function and safety
 - shape and size
 - finish
 - efficiency
 - safe usage
- Did the manufacturing processes achieve a quality product?
 - comment on success of manufacturing skills
 - correct shape and size as per design
 - proportion and fit
 - accurate joins, no gaps
 - manufacturing influences on appearance
 - comment on ability to keep to the production procedure
- Could the shape, size and design features of the product be improved?
 - comment on aesthetics, function and safety
 - comment on feedback from the consumer

What needs to be submitted for assessment	Due dates
<input type="checkbox"/> Completed report	

Marking key for sample assessment task 1 Part C

Evaluation of completed product	Maximum possible mark	Allocated mark
Provides comments with regards to the specifications and design considerations of aesthetics, function and safety <ul style="list-style-type: none"> • clear comments referring to specific design considerations combined with justification of design fulfilling statement of intent requirements • comments outlining major uses and function, and referring to points within statement of intent • comments linked to statement of intent expressing personal likes and dislikes about finished project • comments outlining use of box, but little reference to statement of intent • comments reflect superficial evaluation 	9–10 7–8 5–6 3–4 1–2	/10
Provides comments on the manufacturing processes <ul style="list-style-type: none"> • clear flow of evaluation of all procedures with reference to specific procedures, improvements with little or no criticism of process • appropriate reporting and/or comment on procedures with some logical evaluation of operations, with little criticism of process • comments on procedures with limited evaluation of operations, and some criticism of process • brief comments with few references to journal or diary • comments reflect superficial evaluation 	5 4 3 2 1	/5
Provides comments with regards to the shape and design features – improvements <ul style="list-style-type: none"> • clear comments referring to aesthetics, function and safety influenced by shape and size and suggested improvements • comments suggesting improvements referring to major design considerations • comments expressing personal likes and dislikes about improvements • brief reference to design changes to improve function or aesthetics • few comments/superficial notes on improvements 	5 4 3 2 1	/5
	Total	/20

Sample assessment task

Materials Design and Technology – General Year 11

Task 2 Part A – Unit 1

Assessment type: Production

Conditions

Period allowed for completion of the task: two weeks

Task weighting

5% of the school mark for this pair of units

Skills development, as per context specific skills and techniques

Complete skills development exercises, as demonstrated by your teacher, prior to the production of the proposed product.

Keep a daily work log/time sheet to record your skills development.

(20 marks)

What you need to do

Document and include the following in your daily work log/time sheet

- Notes on the processes involved in the skills development exercises
- List appropriate machines and tools to make the project.

Use the following procedures to complete the project

- Follow Occupational Health and Safety (OHS) practices when using appropriate tools and equipment
- Follow instructions to complete skills development in a production process:
 - mark out details of parts on materials from a plan using appropriate tools
 - select and use appropriate tool/s to accurately cut required parts
 - if required, use appropriate tools to shape parts
 - select and use appropriate tools to assemble parts
 - check fit, modify if needed
 - check appearance of assembled skill exercise
 - apply a finish, if required

What needs to be submitted for assessment	Due dates
<input type="checkbox"/> Documented daily work log/time sheet	
<input type="checkbox"/> Finished project	

Marking key for sample assessment task 2 Part A

Skills development exercises	Maximum possible mark	Allocated mark
Set out of daily work log/time sheet <ul style="list-style-type: none"> well recorded detailed and correct workshop practices main steps of procedure recorded with correct work practices inconsistent notes, partly correct work practices 	3 2 1	/3
Marking out as required from plan <ul style="list-style-type: none"> marking out completed correctly marking out completed marking out completed but required correction 	3 2 1	/3
Parts cut and shaped <ul style="list-style-type: none"> all parts accurately cut, well-shaped parts cut, but some minor unevenness parts cut, but required second attempts 	5–6 3–4 1–2	/6
Final presented skill exercise <ul style="list-style-type: none"> correctly assembled/fitted, appearance shows accurate finished detail competently assembled/fitted, with an acceptable finished detail assembled/fitted, appearance shows minor detail flaws assembled, but poorly fitting parts, appearance shows detail flaws 	7–8 5–6 3–4 1–2	/8
Total		/20

Sample assessment task

Materials Design and Technology – General Year 11

Task 2 Part B – Unit 1

Assessment type: Production

Conditions

Period allowed for completion of the task: eight weeks

Task weighting

25% of the school mark for this pair of units

Manufacture of proposed product

Safe production methods to produce the product.

Document a daily work log/time sheet, including record of production with stage photos of production. **(25 marks)**

What you need to document and include in your daily work log/time sheet

- Complete an ongoing record of production with photos at each stage of production
- Take photographs of completed project

Use the following procedures, complete the product

- Follow proposed production plan
 - maintain time management while using tools, equipment and machinery to complete production
 - follow instructions from plans
 - maintain safety requirements
 - record changes to materials lists or costing
 - record regular journal/diary entries
- Ongoing evaluation techniques: diary, journal or portfolio notes and use of photography to record ongoing progress/decision changes made to the product

What needs to be submitted for assessment	Due dates
<input type="checkbox"/> Stages of production (teacher observation)	
<input type="checkbox"/> Production stage photos/daily work log for making process	
<input type="checkbox"/> Completed product	

Marking key for sample assessment task 2 Part B

Production of proposed product	Maximum possible mark	Allocated mark
Contents and records in daily work log/time sheet <ul style="list-style-type: none"> records ongoing correct workshop practices inconsistently records work practices 	2 1	/2
Completed marking out of material/s as required from plan and cut parts to required shapes using appropriate tools <ul style="list-style-type: none"> marking out completed correctly, all parts correct size and square marking out completed, parts correct size marking out completed with minor corrections, parts correct size marking out required correction, adjusted parts re-sized marking out required correction, replacement piece cut 	5 4 3 2 1	/5
Completed assembly/fitting of product parts <ul style="list-style-type: none"> all parts and joints assembled, even and square fit all parts and joints assembled, minor corrected unevenness all parts and joints assembled, minor shape unevenness all parts and joints assembled, but some required second attempt, some poor fit parts fitted, joints show poor fit, and some require additional material for second attempt 	9–10 7–8 5–6 3–4 1–2	/10
Completed product and ongoing record of production <ul style="list-style-type: none"> correctly assembled/fitted product, presented as per design proposal. Detailed record of production clearly showing each stage of the process correctly assembled/fitted product, easily identified from the design proposal. Well-explained stages of the process in the record of production completed product, appearance shows minor detail flaws. Limited record of production assembled, but poorly fitting parts, appearance and production notes show a deviation from the design and production plan 	7–8 5–6 3–4 1–2	/8
Total		/25

Sample assessment task

Materials Design and Technology

Task 3 – Unit 1

Assessment type: Response

Conditions

Period allowed for completion of the task: two weeks

Task weighting

5% of the school mark for this pair of units

Research and identify environmental considerations of the three ‘Rs’ – reduce, re-use and recycle

This assignment requires students to gather and synthesise information on the topic of:

The environmental benefits of the three ‘Rs’ – reduce, re-use and recycle.

(40 marks)

What you need to do

Use the internet and library resources to research the topic. Present findings in report style, including graphics where appropriate

- Find the definitions and explain the meaning, within your context, of the words – reduce, re-use and recycle
 - draft notes from research material should be shown to, and discussed with, your teacher
 - relevant graphics and charts/table should be examined and added to better communicate concepts and arguments
- Identify **three (3)** to **six (6)** examples of problems (including effects on society and the environment) that reducing, re-using and recycling attempt to solve
- Describe some of the materials and processes
 - describe issues of concern with any of the processes
 - describe the energy and resources saved/used during the lifecycle of products

The final report should be between 1,500 – 2,000 words and submitted as a Word document.

The font used must be easy to read and text must be double spaced.

Note: Plagiarism will result in marks being reduced. Clearly reference your information sources.

What needs to be submitted for assessment	Due dates
<input type="checkbox"/> Draft notes	
<input type="checkbox"/> Report to be presented	
<input type="checkbox"/> Bibliography	

Suggested references and bibliography

<http://en.wikipedia.org/wiki/Recycling> – Definition of recycling

<http://www.recycling-guide.org.uk/rrr.html>

http://www.epa.qld.gov.au/environmental_management/waste/waste_minimisation/reduce_re-use_recycle/

<http://www.yourhome.gov.au/technical/fs53.html>

<http://encyclopedia.thefreedictionary.com/Materials+recovery+facility> – Materials recycling facility

<http://en.wikipedia.org/wiki/Scrap> – Recycling metal scrap

http://en.wikipedia.org/wiki/Textile_recycling – Recycling, repair, re-use textiles

http://en.wikipedia.org/wiki/Timber_recycling – Recycling methods for timbers

<http://www.answers.com/topic/recycling>

Marking key for sample assessment task 3

Research and identify environmental considerations of the three 'Rs'—reduce, re-use and recycle.	Maximum possible mark	Mark allocation
Introductory statements—definitions and meanings of the three 'Rs' <ul style="list-style-type: none"> • targeted logical sequence of statements defining each word, selected from a larger collection of notes or quotes • logical statements defining each word, selected from a collection of notes or quotes • non-specific definitions or direct quotes 	4–5 2–3 1	/5
Collected research data—identifying a number of examples of problems (including effects on society and the environment) that reducing, re-using and recycling attempt to solve, with references to specific industries <ul style="list-style-type: none"> • logical arrangement and setting out of researched data—at least three examples of problems associated with the three 'Rs' (supported by references) • logical collection of data, at least three examples of problems associated with the three 'Rs', (references included) • collection of relevant statements on at least three examples of problems associated with the three 'Rs' (some referencing) • collection of notes referring to at least three examples of problems associated with the three 'Rs' (some referencing) • notes on a limited number of examples of problems associated with the three 'Rs' (no referencing) 	9–10 7–8 5–6 3–4 1–2	/10
Identifying three to six examples of problems (including effects on society and the environment) that reducing, re-using and recycling attempt to solve. <ul style="list-style-type: none"> • logical arrangement, priority and setting out of specific points of at least three examples of problems • clear arrangement of specific points of at least three examples of problems • collection of relevant statements of points of more than three examples of issues • collection of notes referring to main points of at least three examples of issues • notes and lists on main points of at least three examples of issues 	9–10 7–8 5–6 3–4 1–2	/10
Description of issues of concern with the materials, processes, energy and resources saved/used during the lifecycle of products <ul style="list-style-type: none"> • logical, detailed arrangement and setting out of issues of concern, highlighting materials, processes, energy and resources saved/used during the lifecycle of products • clear arrangement of issues of concern, summarising materials, processes, energy and resources saved/used during the lifecycle of products • explanations of major concerns, some summary of materials, processes, energy and resources saved/used during the lifecycle of products • list of major concerns, with reference to materials, processes, energy and resources • collection of notes with reference to materials, processes, energy and resources 	9–10 7–8 5–6 3–4 1–2	/10
<ul style="list-style-type: none"> • layout of presentation and bibliography 		/5
	Total	/40