**Sample Assessment Tasks**

Materials Design and Technology

General Year 11

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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

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**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** |
| * Statement of problem and intent |  |
| * Listing of materials |  |
| * Research on existing ideas/concepts |  |
| * Annotated concept sketches showing concept development |  |
| * 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   * 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   * 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   * 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   * 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   * 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

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**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

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| **What needs to be submitted for assessment** | **Due dates** |
| * Working drawings or template or pattern for product |  |
| * Materials/parts list, costing and order form |  |
| * Work schedule/production plan |  |

Marking key for sample assessment task 1 Part B

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| --- | --- | --- |
| **Design folio – proposed solution and pre-production** | **Maximum possible mark** | **Allocated mark** |
| Presentation of working drawing/s or template or selected pattern   * 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   * 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   * 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

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**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** |
| * Completed report |  |

Marking key for sample assessment task 1 Part C

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| --- | --- | --- |
| **Evaluation of completed product** | **Maximum possible mark** | **Allocated mark** |
| Provides comments with regards to the specifications and design considerations of aesthetics, function and safety   * 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   * 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   * 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

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**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

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| --- | --- |
| **What needs to be submitted for assessment** | **Due dates** |
| * Documented daily work log/time sheet |  |
| * Finished project |  |

Marking key for sample assessment task 2 Part A

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| --- | --- | --- |
| **Skills development exercises** | **Maximum possible mark** | **Allocated mark** |
| Set out of daily work log/time sheet   * 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   * marking out completed correctly * marking out completed * marking out completed but required correction | 3  2  1 | **/3** |
| Parts cut and shaped   * 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   * 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

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**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

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| **What needs to be submitted for assessment** | **Due dates** |
| * Stages of production (teacher observation) |  |
| * Production stage photos/daily work log for making process |  |
| * Completed product |  |

Marking key for sample assessment task 2 Part B

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| --- | --- | --- |
| **Production of proposed product** | **Maximum possible mark** | **Allocated mark** |
| Contents and records in daily work log/time sheet   * 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   * 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   * 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   * 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

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**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.

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| **What needs to be submitted for assessment** | **Due dates** |
| * Draft notes |  |
| * Report to be presented |  |
| * 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.epa.qld.gov.au/environmental_management/waste/waste_minimisation/reduce_reuse_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’   * 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   * 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.   * 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   * 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** |
| * layout of presentation and bibliography |  | **/5** |
|  | **Total** | **/40** |