**Sample Assessment Tasks**

Materials Design and Technology

ATAR Year 11

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# Sample assessment task

# Materials Design and Technology – ATAR Year 11

## Task 1 – Unit 1

**Assessment type:** Design (written)

**Design fundamentals and skills – investigate (25 marks)**

Students investigate the needs, values and beliefs of designers/developers, different sources of inspiration, and products with specific performance criteria, and then use a design process to design and make a product based on their design research.

**Conditions**

Period allowed for completion of the task: 3 weeks

**Task weighting**

5% of the school mark for this pair of units

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**What you need to do**

Develop the first part of a design folio; include the following:

* Investigate, develop ideas and include in your design portfolio:
* needs, values and beliefs of a selection of designers/developers
* sources of design inspiration
* existing ideas and products
* performance criteria for products
	+ include supporting images
* limitations
	+ list available materials and equipment
* Statement of problem and intent
* outline: function, aesthetics, safety, cost considerations and limitations
* Develop ideas and concepts through collected and annotated images, incorporating comments about design fundamentals and factors affecting design, with references back to the statement of intent
* Include references and your sources of information.

|  |  |
| --- | --- |
| **What needs to be submitted for assessment** | **Due dates** |
| * Research on designers/developers, inspirations, existing ideas/products/concepts
 |  |
| * Listing of materials
 |  |
| * Statement of problem and intent
 |  |
| * Annotated design concept images showing concept development
 |  |

# Marking key for sample assessment task 1 – Unit 1

|  |  |  |
| --- | --- | --- |
| **Design folio – Investigation, statement of intent and concept development**  | **Maximum possible mark** | **Allocated mark** |
| Provides information on designers/developers and sources of inspiration * detailed comparisons, using design considerations, between a number of designers/developers and sources of inspiration, supported by suitable images
* a number of different examples with notes describing the differences
* a selection of ideas from a single designer/developer/inspiration with some notation about likes/dislikes
* collection of ideas, dissimilar images and few notes
 | 7–85–63–41–2 | **/8** |
| Provides information about existing products* detailed information about a number of existing similar products, with source referencing, using the design considerations to make detailed comparisons
* comparisons between a number of images against the design considerations
* a number of different products with notes describing the differences
* a selection of ideas of a single product with limited annotation about likes and dislikes
* collection of dissimilar images and few notes
 | 54321 | **/5** |
| Provides an outline of a situation 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
 | 5–63–41–2 | **/6** |
| Provides ideas and concepts through collected and annotated images * clear development of ideas and concepts showing concept development with annotations on images referring to design fundamentals, factors affecting design and statement of intent
* concept development in the annotated images, reference design factors and statement of intent
* concept development is limited by few images and simple annotations, little or some reference to ideas in the statement of intent
 | 5–63–41–2 | **/6** |
| **Total** | **/25** |

# Sample assessment task

# Materials Design and Technology – ATAR Year 11

## Task 2 – Unit 1

**Assessment type:** Response (written)

**Nature and properties of materials (30 marks)**

This assignment requires students to gather and synthesise information.

Research and present information on the nature and properties of materials suitable for use in the development of a design solution.

**Conditions**

Period allowed for completion of the task: 2 weeks

**Task weighting**

5% of the school mark for this pair of units

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**What you need to do**

Use the internet and library resources to research relevant materials. Present findings in report style, including images or graphics where appropriate.

* Find and research information within your context, and present a report about:
* types of materials
* classifications of materials
* origins and processes of manufacture of materials
* properties of materials that influence design choices.

Draft notes from research should be shown to, and discussed with, your teacher.

* Identify up to **six** examples of distinguishing physical differences between different materials
* Select and identify characteristics of materials that influence design choices
* relevant graphics and charts/table should be examined and included to better communicate concepts and arguments
* Include your reference list.

The final report should be between 1,000–1500 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 sources of information.

|  |  |
| --- | --- |
| **What needs to be submitted for assessment** | **Due dates** |
| * Draft notes
 |  |
| * Report
 |  |

# Marking key for sample assessment task 2 – Unit 1

|  |  |  |
| --- | --- | --- |
| **Report on the nature and properties of materials** | **Maximum possible mark** | **Allocated mark** |
| Collected research data and draft notes presented * logical arrangement and setting out of researched data–types, classifications, features, origins and processes clearly researched, with references to specific industries
* relevant collection of data–material types, classifications, features, origins and processes
* collection of mostly relevant notes on material types, classifications, features, origins and processes clearly researched, with references to specific industries (some referencing)
* collection of notes referring to types and characteristics of materials, with brief reference to manufacturing processes (some referencing)
* notes on a limited number of examples of materials (little or no referencing)
 | 54321 | **/5** |
| Presentation of examples of distinguishing physical differences between different materials* logical arrangement, prioritised, detailed, and specific points of the distinguishing physical differences
* clear arrangement of specific points of at least five examples of distinguishing physical differences
* collection of relevant statements of points of more than three examples of distinguishing physical differences
* statements refer to more than three examples of different physical appearance
* notes referring to at least three examples of the main differences in appearance
* notes some main points of difference
 | 11–129–107–85–63–41–2 | **/12** |
| Selection and description of characteristics of materials that influence design choices* logical selection of materials, detailed arrangement and setting out of the main characteristics, identifying many of the characteristics, properties and factors affecting design choices
* clear arrangement identifying the main materials’ characteristics and factors affecting design choices
* collection of notes identifying chosen materials’ characteristics affecting design choices
* notes on a chosen material, listing the material’s characteristics affecting design choices
* limited description of a material, with little or no comments on characteristics affecting design choices
 | 9–107–85–63–41–2 | **/10** |
| Relevant list of references | 1–3 | **/3** |
| **Total** | **/30** |

# Sample assessment task

# Materials Design and Technology – ATAR Year 11

## Task 3 – Unit 1

**Assessment type:** Design (practical)

**Design fundamentals and skills – devise (35 marks)**

Students use a design process to prepare drawings, patterns or templates, and develop a production plan to manufacture the product.

**Conditions**

Period allowed for completion of the task: 4 weeks

**Task weighting**

8% of the school mark for this pair of units

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**What you need to do**

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

* 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.

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** |
| * Final sketch of proposed solution
 |  |
| * 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 3 – Unit 1

|  |  |  |
| --- | --- | --- |
| **Design folio; proposed solution and pre-production** | **Maximum possible mark** | **Allocated mark** |
| 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, and few notes
 | 10–127–94–61–3 | **/12** |
| 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
 | 5–63–41–2 | **/6** |
| 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
 | 5–63–41–2 | **/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
 | 54321 | **/5** |
| Proposed steps for manufacturing* logical list of 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 and/or partial list of procedures and tools
 | 5–63–41–2 | **/6** |
| **Total** | **/35** |

# Sample assessment task

# Materials Design and Technology – ATAR Year 11

## Task 4 – Unit 1

**Assessment type:** Production (practical)

**Use of technology development, as per context specific skills and techniques (20 marks)**

You are to 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.

**Conditions**

Period allowed for completion of the task 2 weeks

**Task weighting**

5% of the school mark for this pair of units

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**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 product.

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** |
| * Documented daily work log/time sheet
 |  |
| * Finished product
 |  |

# Marking key for sample assessment task 4 – Unit 1

|  |  |  |
| --- | --- | --- |
| **Skills development exercises**  | **Maximum possible mark** | **Allocated mark** |
| Setting 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
 | 321 | **/3** |
| Marking out required from plan* marking out completed correctly
* marking out completed
* marking out completed but required correction
 | 321 | **/3** |
| Parts cut and shaped * all parts accurately cut, well-shaped
* parts cut, but some minor unevenness
* parts cut, but required second attempts
 | 5–63–41–2 | **/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
 | 7–85–63–41–2 | **/8** |
| **Total** | **/20** |

# Sample assessment task

# Materials Design and Technology – ATAR Year 11

## Task 5 – Unit 1

**Assessment type:** Production (practical)

**Use of technology development, as per context specific skills and techniques (25 marks)**

Use safe production methods to produce the product.

Document a daily work log/time sheet including record of production with photographs.

**Conditions**

Period allowed for completion of the task: 8 weeks

**Task weighting**

20% of the school mark for this pair of units

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**What you need to do**

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
* use 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** |
| * Stages of production (teacher observation)
 |  |
| * Production photos/daily work log for making process
 |  |
| * Completed product
 |  |

# Marking key for sample assessment task 5 – Unit 1

|  |  |  |
| --- | --- | --- |
| **Production of proposed product** | **Maximum possible mark** | **Allocated mark** |
| Contents and records in daily work log/time sheet * records ongoing correct workshop practices
* inconsistent records of work practices
 | 21 | **/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
 | 54321 | **/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
 | 9–107–85–63–41–2 | **/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
 | 7–85–63–41–2 | **/8** |
| **Total** | **/25** |

# Sample assessment task

# Materials Design and Technology – ATAR Year 11

## Task 6 – Unit 1

**Assessment type:** Response (written)

**Design fundamentals and skills – evaluation of completed product (20 marks)**

Evaluate your finished product by responding to evaluation questions.

**Conditions**

Period allowed for completion of the task: 1 week, completed during the final week of the term.

**Task weighting**

2% of the school mark for this pair of units

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**What you need to do**

Write clear statements to evaluate the project.

Comment on the following points, where relevant:

* 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
* ability to keep to the production procedure
* How could the shape, size and design features of the product be improved?
* comment on aesthetics, function and safety
* include feedback from the consumer.

|  |  |
| --- | --- |
| **What needs to be submitted for assessment** | **Due dates** |
| * Completed report
 |  |

# Marking key for sample assessment task 6 – Unit 1

|  |  |  |
| --- | --- | --- |
| **Evaluation of completed product** | **Maximum possible mark** | **Allocated mark** |
| Evaluation 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 product, but little reference to statement of intent
* comments reflect superficial evaluation
 | 9–107–85–63–41–2 | **/10** |
| Comments on the manufacturing processes* evaluation of all procedures with reference to specific procedures, improvements with little or no change of process
* appropriate reporting and/or comment on procedures with some logical evaluation of operations, with minor changes to process
* comments on procedures with limited evaluation of operations, after major changes to process
* brief comments with few references to processes
* comments reflect superficial evaluation
 | 54321 | **/5** |
| Evaluation comments with regards to the shape and size – improvements* clear comments referring 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
 | 54321 | **/5** |
| **Total** | **/20** |