

Materials Design and Technology External Assessment Folio

General information

This document contains information for the external assessment of the production component in Materials Design and Technology.

In 2009, all Year 12 students enrolled in at least two Stage 2 or two Stage 3 units in the Materials Design and Technology course will be required to submit a folio to receive marks for the production component of the external examination.

The Curriculum Council will supervise and conduct the external assessment of work submitted by students undertaking Stage 2 and Stage 3 units. This will take place in a centralised metropolitan location, ensuring standardised conditions and marking comparability.

Further advice on matters related to the administration of Curriculum Council assessment will be published in the Curriculum Council WACE circular. Teachers should also refer to the TEE/WACE examination policy published in the WACE manual and on the Curriculum Council website.

Teachers are responsible for ensuring the syllabus requirements are met when submitting work for external assessment. Teachers must ensure they are using the current accredited course and conform to the specifications set out in this booklet.

External examination weightings

In Materials Design and Technology the external examination weightings are as follows:

Folio (production)	50%
Written examination paper (2.5 hours)	50%

Reporting achievement

For each unit, schools will be required to submit a mark out of 100 to the Curriculum Council. The school course mark will be calculated by the Curriculum Council by averaging the mark out of 100 for the two units studied in Year 12. The examination mark (a combination of the practical folio component and the written component) will statistically moderate the school course mark. In 2010, the Curriculum Council will report a WACE course mark which is determined from the moderated school course mark and the standardised examination mark. For the purpose of ranking students for tertiary entrance, the average of the moderated school course mark and the standardised examination mark will be scaled.

Principles

1. The marking process preserves the anonymity of the candidate and the candidate's school.

This requires that:

- candidates and their work will be identified only by their randomly allocated student number
- marking occurs in central locations where the work can be displayed and not be identified with a particular candidate or school.

2. The authenticity of the candidate's work must be guaranteed.

It is essential that:

- the main development of work takes place in school time
- work completed away from the school is regularly monitored by the teacher
- each student signs a statement*, witnessed by the supervising teacher and the principal, that the work is genuinely his or her own
- under no circumstance can any teacher work directly on any part of a student's work that is submitted for external assessment. The teacher has a significant role in monitoring student performance and in providing ongoing feedback and assessment throughout the process
- the work or any part of the folio has not been submitted by the candidate for any other WACE course or program

* Declaration form to be filled out; see sample form Appendix 3.

3. Markers will apply a consistent standard to assess the candidate's work.

This requires:

- separate marking guides for Stage 2 and Stage 3 units
- attendance at a training meeting prior to the commencement of marking
- trial marking of work to ensure a common understanding of the marking guide

4. Double marking of candidate's work will be carried out.

This requires that:

- each marker marks the work independently.
- where necessary, the Chief marker reconciles significant differences
- the Chief marker ensures marking consistency throughout by monitoring the marking process
- marking of production examinations will be concluded prior to the commencement of the written examinations

Folio requirements for examination

A candidate's submission must include:

- the folio
- the design project summary statement (as shown in Appendix 2)
- a signed Declaration of Authenticity form (as shown in Appendix 3).

The folio provides evidence of a completed major design project that reflects the key stages of the technology process and technology skills and shows evidence of the candidate's practical skills and understandings in the generation and production of a major design project.

Candidates submit a completed folio that demonstrates their highest achievement with regards to the technology process and technology skills from unit A or unit B. The folio will provide evidence of the candidate's specific processes and skills used to arrive at the completed design solution (as indicated in Outcome 1 and Outcome 3 as shown in Appendix 1). The emphasis is on quality not quantity.

The folio should show the progress of development from initial design brief to finished product. A cover page must be attached to the folio, the page is to include an index of the contents identifying each stage in the technology process of the major project.

For the purpose of fairness and equity the following options regarding size of submitted works must be adhered to. Candidates are to submit work for assessment as indicated below

Category One

Flat file design production folio (hard copy)

All folio content represents the design development relating to a major design project and must be presented on A3 size sheets. The documentation pages may comprise original drawings or composites using scanned images, photographs or photocopies (objects should not exceed 6mm thickness). Three dimensional objects must **not** be included and instead will need to be photographed or otherwise represented so as to clearly demonstrate the details and overall designs.

Stages Two and Three: The folio must not exceed 30 plastic sleeves to contain 60 A3 pages. The folio can be an A3 flat plastic display file or an A3 3-ring hard covered file.

The design project summary statement

This summary statement is a concise explanation of the completed major design project of no more than 300 words in length. The summary statement will explain the rationale from initial problem, the realisation of ideas, design concepts and an outline of the production process. The design project summary statement will be read in conjunction with the submitted folio. This summary statement serves to provide the clarification of ideas communicated in the completed folio and will not be assessed. A standard proforma as per sample in Appendix 2 of this booklet will be provided to candidates.

As direct use of stimulus material or copying of another person's work without proper acknowledgment is not permitted candidates must acknowledge all references using a recognised referencing style.

Declaration of authenticity

Signed authentication forms are to be provided with a candidate's submitted folio. Under no circumstances may the folio identify the candidate or their school. A sample of the authentication form is provided in Appendix 3 of this booklet.

Teachers will need to ensure that copies of authentication forms are kept with school records, for verification in the event of loss during transportation to the Curriculum Council. Authentication forms act as legal documents and therefore proper records need to be maintained.

Procedures for submission

Advice to schools

Folios submitted for external assessment must not be offensive. While it is understood that submitted folios may challenge established views, it is important to consider and take into account the values of the audience and wider community in general.

Labelling of candidate's work

Candidates and their school must ensure that all folios and contents:

- are clearly and securely labelled with the Curriculum Council's student number.
- do not identify the candidate or candidate's school.
- do not contain evidence of previous marking.

Works that can be identified, or do not comply with the above submission guidelines may incur marking penalties, or may be rejected from the marking process at the discretion of the Chief marker.

Deadline for submission of materials

All materials must be received at the marking venue by the final date in the first week of Term 4 as determined by the Curriculum Council, so that marking can commence on the first weekend of Term 4.

Works submitted after the published date and time will not be marked. Individual candidates who were unable to submit their works due to illness or an unforeseen situation can submit a sickness/misadventure application form.

Marking

Transport of folios to venues for external marking

The Curriculum Council marking process will commence on the first weekend of Term 4. Schools will be notified by the Curriculum Council of final date for submission and location for marking. Schools are responsible for ensuring folios are prepared for transportation to the Curriculum Council by the nominated date.

Schools are responsible for insurance of folios against damage and the cost of transporting them to and from the venue; and ensuring the material arrives at the designated examination venue location by the due date. **No late folios can be accepted.**

All submitted folios are to be accompanied with the appropriate paperwork and signed forms.

Declaration of Authenticity forms should be in an envelope or folder and should not be attached to the folio.

Appointments of markers

The Curriculum Council will appoint a Chief marker who will be responsible for the external assessment process and training. Teachers may apply to be external markers. External markers are employed by the Curriculum Council and are therefore responsible to the Curriculum Council through the Chief marker.

The Curriculum Council will allocate, in consultation with the Chief marker, a set number of works per marker. These works will be randomly allocated according to the candidate's Curriculum Council student number.

The marking process

The markers will work collaboratively with the Chief marker and under the direction of the principles of external assessment defined by the Curriculum Council.

The Chief marker sets the standards and this will be based strictly on the criteria set down in the marking guidelines. Exemplar materials will be selected by the Chief marker and used to exemplify standards and levels of achievement.

Marking of the work will be undertaken by two independent markers.

A numerical scale will be used to assess candidate's folios in terms of:

- evidence of a technology process from Outcome 1
- evidence of the use of technology skills from Outcome 3.

See Sample marking keys Appendices 4–5 for further details.

Judgements are compared and a process of reconciliation will be undertaken under the direction of the Chief marker. All independent marks and reconciled marks are recorded and submitted to the Curriculum Council by the Chief marker.

The Chief marker is required to prepare a formal written evaluation report which will be based upon the established Curriculum Council criteria of:

- adherence to protocols and processes
- attention to administrative processes
- implementation and adherence to established production standards for the subject
- other relevant comments.

Confidentiality of candidate marks is vital and must not be breached. External markers must not be involved in the marking of candidates from their own school and must immediately disclose if they recognise a candidate's work.

Assessed processes and skills

The items selected for the folio are designed to reflect the candidate's understanding and application of the following course outcomes.

Evidence of a technology process from Outcome 1

Candidates will need to show that they are able to apply a technology process to create or modify products, processes, systems, services or environments to meet human needs and realise opportunities.

To do this they will need to demonstrate they can:

- investigate issues, values, needs and opportunities
- devise and generate ideas and prepare production proposals
- produce solutions and manage production processes
- evaluate intentions, plans and actions.

Therefore the folio should contain:

- Design brief outlining the problem; separate or combined with a statement of intent identifying how the problem will be solved
- Materials research with associated samples or images
- Product research, client or market audience and critical analysis
- Ideas generated, sketches, developmental concept drawings and working drawings
- A schedule identifying the different stages of the production process
- Ongoing evaluation of processes, and final evaluation of process used
- Photographs of finished project
- References used.

Evidence of the use of technology skills from Outcome 3

Candidates will need to show that they are able to create material products safely and efficiently to specified standards.

To do this they will need to demonstrate they can:

- plan and manage resources to create products within constraints
- select and apply appropriate techniques and procedures when creating and modifying technologies
- manipulate equipment and resources safely to meet defined standards.

Therefore the folio should contain:

- Evidence of selection and use of appropriate machines, equipment and tools, including safety awareness
- Documented evidence of technology skills in the selection and application of appropriate techniques, skills and processes
- Supporting documentation in the form of comment sheets of the manufacturing schedule and stages of the production process or a daily work log/diary or journal outlining what was attempted on each day with evidence of the production processes i.e. notes and photos
- Evidence of a final product. Clear photographic evidence showing all aspects and features of the project/product.



Design project summary statement
2009 External assessment Materials, Design and Technology

Instructions to candidates

A design project summary statement is a concise explanation of the processes the candidate used to achieve a finished project.

In the summary statement include the following:

- a reflection on the candidate's thinking journey and the creative processes involved in producing the finished project
- the key decisions made, acknowledging influences on the candidate's processes
- An evaluation on the purpose and design of the work, and how these relate to the finished project.

The summary statement of 300 words or less, must be made on the official form or be word processed in the space below using 11 point Arial font to describe your finished project.

Student number:

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References/Acknowledgements

All references (i.e. use of another person's ideas, works or images) used in the development of the design solution within this folio are to be clearly cited and attached on a separate sheet. These are not included in the 300 word limit.



DECLARATION OF AUTHENTICITY 2009 External Assessment Production Materials Design and Technology

Candidate Declaration

Name: _____ School code: _____

Student number:

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Category of the work: _____

As a candidate for the Materials, Design and Technology examination in 2009, I declare that I completed all the work submitted during 2009 and that to the best of my knowledge all the information provided is correct, all references have been acknowledged.

Signed: _____ Date: _____

Please note:

1. To maintain anonymity, this declaration form must accompany but must not be attached to the submitted folio.
2. Ensure all references have been cited.
3. Teachers must keep a copy of this form on official school records.

School candidates: Teacher and Principal Declaration

This section is to be completed by the candidate's teacher and the school principal. The candidate's work will not be marked if the declaration is not signed.

I declare that, to the best of my knowledge the work in this submission was:

- completed by the candidate in 2009
- developed mainly in school time, and any work away from school was regularly monitored
- not worked upon directly by a teacher or any other person
- not submitted for assessment in any other WACE course or program.

Teacher's signature: _____ Date: _____

Teacher's name: _____

Principal's signature: _____ Date: _____

Private Candidates

A Commissioner of Declarations needs to witness your signature and complete this section.

Commissioner of Declarations

Name: _____

Address: _____

Signed: _____ Date: _____

Stage 2 Sample marking key external assessment folio

A technology process—investigation issue, values, needs and opportunities				
5	4	3	2	1
Investigates and analyses some issues, values, needs and opportunities to complete tasks in a logical manner to client and stakeholder needs.	Investigates issues, values, needs and opportunities in to complete tasks to client and stakeholder needs.	Investigates needs to complete task.	Some investigation of needs to complete task.	Minimal investigation.
Score: /5				
A technology process—devise and generate ideas and prepare production proposals				
5	4	3	2	1
Annotated sequential development of ideas with justification of the final design proposal.	Annotated development of individual isolated ideas to include appropriate solutions to the design brief.	Development of more than one idea with annotations.	Some development of one idea only with minimal annotation.	Minimal devising e.g. one design idea.
Score: /5				
A technology process—produce solutions and manage production processes				
5	4	3	2	1
Logical and sequential production plan including appropriate technical language, detailed time and resource management, OSH considerations and production plan review and modification e.g. journals, costing sheets, sequential development photos, sketches.	Production plan including appropriate technical language and evidence of production plan review and modification. Detailed time management and costing e.g. journals, costing sheets.	Has a production plan including time management and use of technical language. Evidence of costing.	Some evidence of sequence for production and use of technical language e.g. a basic production plan.	Minimal evidence planning for production.
Score: /5				

Stage 2 Sample marking key external assessment folio

A technology process—evaluate intentions, plans and actions				
5	4	3	2	1
Evaluates and justifies the final design and how this meets the needs of the end user with reflection of possible improvements to the product and process e.g. some evidence of user surveys.	Evaluates the final design and how this meets functional and aesthetic requirements with reflection of possible improvements to the product and process.	Evaluates the final design using a set criteria with some detail in the explanations e.g. more thoughtful and in-depth responses.	Some evaluation of the final design with limited explanation e.g. 2–4 sentences, or one word answers to set criteria.	Minimal evaluation of the final design e.g. one sentence answer.
Score: /5				
Using technology skills—produce solutions and manage production processes				
5	4	3	2	1
Selects and manipulates a variety of ICT techniques working towards industry conventions e.g. detailed sketches, photos, scanned/images, newspaper cut outs, working drawings.	Uses a variety of ICT techniques presented in an acceptable format e.g. detailed sketches, photos, scanned/images, newspaper cut outs.	Uses a limited selection of ICT techniques presented in an acceptable format e.g. detailed sketches, photos, scanned/images, newspaper cut outs.	Some use of Information Communication Technology (ICT) e.g. detailed sketches only.	Minimal use of Information Communication Technology (ICT) e.g. sketches only.
Score: /5				

Stage 3 Sample marking key external assessment folio

Outcome 1: Evidence of Technology Process

A technology process—investigation issue, values, needs and opportunities				
5	4	3	2	1
Investigates with detailed analysis of issues, values, needs and opportunities to complete tasks in a logical and precise manner to client and stakeholder needs.	Investigates and analyses some issues, values, needs and opportunities to complete tasks in a logical manner to client and stakeholder needs.	Investigates issues, values, needs and opportunities in to complete tasks to client and stakeholder needs.	Some investigation of needs to complete task.	Minimal investigation.
Score: /5				
A technology process—devising and generating ideas devise and generate ideas and prepare production proposals				
5	4	3	2	1
Devises and generates innovative, annotated sequential ideas to industry standards and specifications.	Annotated sequential development of ideas with justification of the final design proposal aligning to industry standards and specifications.	Annotated development of individual isolated ideas to include appropriate solutions to the design brief.	Some development of one idea only with minimal annotation.	Minimal devising e.g. one design idea.
Score: /5				
A technology process (design) producing (Production plan)				
5	4	3	2	1
Detailed preparation, planning and implementation with review and modification to industry standards e.g. journals, costing sheets, sequential development photos, sketches.	Logical and sequential production plan including appropriate technical language, detailed time and resource management, OSH considerations and production plan review and modification e.g. journals, costing sheets, sequential development photos, sketches.	Production plan including appropriate technical language and evidence of production plan review and modification. Detailed time management and costing e.g. journals, costing sheets.	Some evidence of sequence for production and use of technical language e.g. a basic production plan.	Minimal evidence planning for production.
Score: /5				

Stage 3 Sample marking key external assessment folio

A technology process—evaluate intentions, plans and actions				
5	4	3	2	1
Critically evaluates and analyses the final design and how this meets the needs of the end user with reflection of possible improvements to the product and process e.g. has used client/market surveys.	Evaluates and justifies the final design and how this meets the needs of the end user with reflection of possible improvements to the product and process e.g. some evidence of user surveys.	Evaluates the final design and how this meets functional and aesthetic requirements with reflection of possible improvements to the product and process.	Some evaluation of the final design with limited explanation e.g. 2–4 sentences, or one word answers to set criteria.	Minimal evaluation of the final design e.g. one sentence answer.
Score: /5				
Using technology skills—produce solutions and manage production processes				
5	4	3	2	1
Selects and manipulates a variety of ICT techniques using industry conventions e.g. detailed sketches, photos, scanned/images, newspaper cut outs, working drawings using industrial conventions and standards.	Selects and manipulates a variety of ICT techniques working towards industry conventions eg detailed sketches, photos, scanned/images, newspaper cut outs, working drawings.	Uses a variety of ICT techniques presented in an acceptable format eg detailed sketches, photos, scanned/images, newspaper cut outs.	Some use of Information Communication Technology (ICT) e.g. detailed sketches only.	Minimal use of Information Communication Technology (ICT) e.g. sketches only.
Score: /5				