

Year 9 Design brief and preparation advice

2012 Queensland Comparable Assessment Tasks

Australian Curriculum: English | Mathematics | Science

Contents

1	Context	3
1.1	Queensland Comparable Assessment Tasks (QCATs)	3
1.2	Purpose of the design brief	3
1.3	More information	3
2	Assessment focus of QCATs	4
2.1	Year 9 English	4
2.1.1	Selected Australian Curriculum content descriptions	4
2.1.2	Suggested learning experiences	5
2.1.3	Suggested resources	6
2.2	Year 9 Mathematics	7
2.2.1	Selected Australian Curriculum content descriptions	7
2.2.2	Suggested learning experiences	7
2.2.3	Suggested resources	8
2.3	Year 9 Science	9
2.3.1	Selected Australian Curriculum content descriptions	9
2.3.2	Suggested learning experiences	9
2.3.3	Suggested resources	10
3	The assessment package	11
3.1	Student booklet	11
3.2	Teacher guidelines	11
3.3	Guide to making judgments	11
3.4	Sample responses	12
4	Timelines	12
	Appendix: Design elements for quality assessment	13

1 Context

1.1 Queensland Comparable Assessment Tasks (QCATs)

Queensland Comparable Assessment Tasks (QCATs) are authentic performance-based assessments designed to support teachers to improve student learning and to improve consistency of teacher judgments across all Queensland schools. QCATs aim to:

- model quality assessments aligned to Australian Curriculum content descriptions and achievement standards
- support teachers in making consistent judgments about the quality of student work
- provide feedback to teachers and students about:
 - what students know and can do
 - what is working well
 - what needs attention
- provide teachers with a common assessment task, aligned to Australian Curriculum content descriptions and achievement standards, for moderation discussions.

QCATs provide evidence of student understanding and skills in relation to a selection of Australian Curriculum content descriptions for English, Mathematics and Science in Years 4, 6 and 9.

1.2 Purpose of the design brief

The design brief:

- specifies the selected Australian Curriculum content descriptions to be assessed in 2012
- describes the components of each QCAT package
- explains design elements used to maximise the validity and reliability of the centrally devised QCATs, and the judgments made about student learning from the evidence.

1.3 More information

For more information about QCATs, contact:

Project Officer (Operations)

Email: qcats.administrator@qsa.qld.edu.au

Phone: 07 3864 0299

Website: www.qsa.qld.edu.au/3163.html

2 Assessment focus of QCATs

The Year 9 English, Mathematics and Science QCATs will be authentic, performance-based assessments that will:

- emphasise problem solving, critical thinking and reasoning
- be intellectually challenging and include higher-order or complex thinking skills
- require students to communicate their response to a meaningful task
- be accessible to a diverse range of students engaging with the Year 9 curriculum
- reflect the design elements for quality assessment (see Appendix: Design elements for quality assessment).

2.1 Year 9 English

The Year 9 English QCAT gathers evidence about how well students:

- interpret an extract from a memoir
- identify and analyse the use of language features to create effects
- evaluate the representations of an issue and make comparisons with other texts
- create a literary text to explore a personal experience.

2.1.1 Selected Australian Curriculum content descriptions

Students will demonstrate their understanding and skills in relation to the Australian Curriculum content descriptions below.

Australian Curriculum English	Year 9
Language	
Text structure and organisation Understand that authors innovate with text structures and language for specific purposes and effects (ACELA1553)	
Expressing and developing ideas Identify how vocabulary choices contribute to specificity, abstraction and stylistic effectiveness (ACELA1561) Understand how spelling is used creatively in texts for particular effects, for example characterization and humour and to represent accents and styles of speech (ACELA1562)	
Literature	
Examining literature Analyse texts from familiar and unfamiliar contexts, and discuss and evaluate their content and the appeal of an individual author's literary style (ACELT1636) Analyse text structures and language features of literary texts, and make relevant comparisons with other texts (ACELT1772)	
Creating literature Create literary texts, including hybrid texts, that innovate on aspects of other texts, for example by using parody, allusion and appropriation (ACELT1773)	
Literacy	
Interpreting, analysing, evaluating Interpret, analyse and evaluate how different perspectives of an issue, event, situation, individuals or groups are constructed to serve specific purposes in texts.(ACELY1742) Use comprehension strategies to interpret and analyse texts, comparing and evaluating representations of an event, issue, situation or character in different texts (ACELY1744)	

2.1.2 Suggested learning experiences

Provide opportunities, with modelling and scaffolding, for students to:

Receptive modes (listening, reading and viewing)

- listen to, read and view a variety of oral and written memoirs to compare the human experiences conveyed in these texts and reflect on the appeal of an author's literary style
- compare the vocabulary choices and text structures used in different texts, including memoirs and opinion columns, to evaluate the appeal of using different language choices to evoke an emotional response
- explore how language techniques such as allusion, parody, exaggeration, similes, metaphors, wordplay and juxtaposition are used in different ways, such as for enhancing characterisations and for humorous effects
- evaluate different representations of human experiences conveyed by writers in texts and the effect on readers of different text structures and language features
- listen to the ways different writers explore personal experiences and reflect on how this makes them feel
- use a range of comprehension strategies to answer literal, inferential and evaluative questions, which could include:
 - making connections
 - building and using prior knowledge and vocabulary
 - synthesising ideas
 - making inferences using examples from within a text
- justify opinions and develop explanations about representations of characters and ideas in texts using selected text evidence and providing supported detail

Productive modes (speaking, writing and creating)

- plan, draft and edit personal responses that evoke feelings about an experience and use a range of language features, such as humour and figurative language, to engage an audience
- review and reflect on their own editing strategies to identify areas for improvement, and respond to others' texts with their teachers and peers
- practise using different planning models to support imaginative writing and reflect on the models that work best for developing individual style
- select, group and sequence ideas to be included in different stages of a personal memoir and use guided questioning to provide explanations about how ideas are organised
- deconstruct exemplar texts of personal memoir, explore ways to develop drafts through guided practice, and reflect on their writing and the writing of others
- compose, revise and discuss their drafts, considering their choices of textual and language features to match the purpose and audience for their writing
- collaborate in the joint construction of a text or part of a text, such as the introduction, to identify the key contextual and language features that are required in good writing.

2.1.3 Suggested resources

QSA resources

- QSA 2004, *Teachers' notes: Locating information*, www.qsa.qld.edu.au/1443.html [Resources for developing test skills and strategies > Locating information]
- QSA 2004, *Teachers' notes: Writing on demand*, www.qsa.qld.edu.au/1443.html [Resources for developing test skills and strategies > Independent writing]
- QSA 2010, *Teaching reading and viewing: Guide for Years 8-9*, www.qsa.qld.edu.au/7284.html [Teaching advice > Reading]
- QSA 2010, *Teaching reading and viewing: Comprehension strategies*, www.qsa.qld.edu.au/7284.html [Teaching advice > Reading]
- QSA 2009, *Teaching writing: Guide for Years 8-9*, www.qsa.qld.edu.au/7284.html [Teaching advice > Writing]

Texts

- Derewianka, B 2011, *A new grammar companion for teachers*, Primary English Teaching Association, NSW
- Quin, R 2005, *Reading the visuals in the middle years*, Curriculum Corporation, VIC
- Tredinnick, M 2006, *The little red writing book*, University of New South Wales Press, NSW
- Zimmerman, S & Hutchins, C 2003, *7 Keys to Comprehension: How to help your kids read it and get it!*, Three Rivers Press, New York

Web references

- Digital curriculum resources from the National Digital Learning Resources Network, Education Services Australia 2011 (registration required), www.ndlrm.edu.au/using_the_resources/australian_curriculum_resources/english.html [select Secondary > Years 9–10]
 - Australia: Intersections of identify – collection
 - The writer's craft collection

2.2 Year 9 Mathematics

The Year 9 Mathematics QCAT gathers evidence about how well students apply the proficiency strands (Understanding, Fluency, Problem Solving, Reasoning) to:

- apply the concepts of similar figures, Pythagoras' Theorem and trigonometry
- find the distance between two points on a Cartesian plane
- calculate the areas of composite shapes
- expand algebraic expressions.

2.2.1 Selected Australian Curriculum content descriptions

Students will demonstrate their understanding and skills in relation to the Australian Curriculum content descriptions below.

Australian Curriculum Mathematics	Year 9
Number and Algebra	
Patterns and Algebra	
Apply the distributive law to the expansion of algebraic expressions, including binomials, and collect like terms where appropriate (ACMNA213)	
Linear and non-linear relationships	
Find the distance between two points located on a Cartesian plane using a range of strategies, including graphing software (ACMNA214)	
Measurement and Geometry	
Using units of measurement	
Calculate the areas of composite shapes (ACMMG216)	
Geometric Reasoning	
Solve problems using ratio and scale factors in similar figures (ACMMG221)	
Pythagoras and Trigonometry	
Investigate Pythagoras' Theorem and its application to solving simple problems involving right angled triangles (ACMMG222)	
Apply trigonometry to solve right-angled triangle problems (ACMMG224)	

2.2.2 Suggested learning experiences

Provide opportunities, with modelling and scaffolding, for students to:

- understand that the distributive law can be applied to algebraic expressions as well as numbers
- develop proficiency in expanding, collecting like terms and simplifying algebraic expressions, including binomials
- build on an understanding of area to calculate the area of a composite shape by partition it into simple plane shapes
- apply an understanding of ratio and scale factor to find unknown lengths in similar figures of a variety of shapes
- recognise that Pythagoras' theorem and the tangent ratio are useful tools in determining unknown dimensions in right triangles in a variety of practical contexts
- investigate techniques for calculating the distance between two points on the Cartesian plane, e.g. Pythagoras' theorem and/or the distance formula
- develop strategies to solve simple and complex problems in familiar and unfamiliar situations
- develop skills in clear communication of calculations, solutions and explanations, with particular attention to the use of mathematical conventions and symbols.

2.2.3 Suggested resources

QSA resources

- QSA 2011, *Year 9 unit overview - Mathematics exemplar*, www.qsa.qld.edu.au/13651.html#16481 [select Unit overviews > Mathematics]

Web references

- Digital curriculum resources available from the National Digital Learning Resources Network, Education Services Australia 2011 (registration required), www.ndlrm.edu.au/using_the_resources/australian_curriculum_resources/mathematics.html [select Secondary > Measurement and Geometry]
 - “Exploring the Pythagorean theorem TLF ID L6559” in *‘Exploring measurement’ series*
 - “Trigonometry: similar triangles TLF ID L2327” in *‘Trigonometry’ series*
- Interactive math lessons from Interactive Mathematics 2011: www.intmath.com
 - Algebra > Basic Algebra
 - Graphs > Plane Analytical Geometry
 - Trigonometry > Trigonometric Functions
- Practice activities from the IXL Learning 2011: <http://au.ixl.com/math>
 - Year 8 > Coordinate graphs, Geometry, Variable expressions, Pythagorean theorem
 - Year 9 > Geometry, Variable expressions and equations, Polynomials

2.3 Year 9 Science

The Year 9 Science QCAT gathers evidence of how well students:

- apply the concept of plate tectonics to explain earthquakes
- understand the role of technology in advancing scientific understanding
- analyse experimental data and scientific concepts to describe relationships and draw conclusions
- formulate hypotheses and communicate scientific ideas.

2.3.1 Selected Australian Curriculum content descriptions

Students will demonstrate their understanding and skills in relation to the Australian Curriculum content descriptions below.

Australian Curriculum Science	Year 9
Science Understanding	
Earth and space sciences	
The theory of plate tectonics explains global patterns of geological activity and continental movement (ACSSU180)	
Science as a Human Endeavour	
Nature and development of science	
Advances in scientific understanding often rely on developments in technology and technological advances are often linked to scientific discoveries (ACSHE158)	
Science Inquiry Skills	
Questioning and predicting	
Formulate questions or hypotheses that can be investigated scientifically (ACSIS164)	
Processing and analysing data and information	
Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies (ACSIS169)	
Use knowledge of scientific concepts to draw conclusions that are consistent with evidence (ACSIS170)	
Communicating	
Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations (ACSIS174)	

2.3.2 Suggested learning experiences

Provide opportunities, with modelling and scaffolding, for students to:

- explain geological events including earthquakes and volcanic activity in terms of tectonic plates, sea floor spreading and constructive and destructive plate boundaries
- investigate the technologies used in detecting and measuring crustal movement and seismic activity, e.g. seismographs, and analyse the resulting graphical data to enhance understanding of geological events
- carry out experimental investigations which provide opportunities for:
 - formulating questions and hypotheses
 - modelling real systems
 - analysing patterns and trends in data and describing relationships between variables
 - using evidence and scientific understanding to draw conclusions
- develop an argument based on evidence, theory and scientific concepts, using scientific language.

2.3.3 Suggested resources

QSA resources

- QSA 2011, *Year 9 unit overview - Science exemplar*, www.qsa.qld.edu.au/13651.html#16485 [Unit overviews > Science]
- Complementary QSA Assessment Bank package (scheduled for publication Dec 2011): *The changing Earth test* [Australian Curriculum Year 9 Science assessment], <https://qcar.qsa.qld.edu.au/assessmentbank> (registration required)

Web references

- Plate tectonics resource: *This Dynamic Planet*, US Geological Survey 2011, <http://pubs.usgs.gov/gip/dynamic/dynamic.html>
- Instructional resources from Incorporated Research Institutions for Seismology 2011: www.iris.edu/hq/sis/resources/curriculum
- Earthquake resources from Geosciences 2011: www.ga.gov.au/hazards/earthquakes.html
- Virtual earthquake activity interpreting seismic waves from Geology Labs Online 2002: *Virtual Earthquake*, www.sciencecourseware.org/VirtualEarthquake
- Data on earthquake in Japan from US Geological Survey: *Earthquake Hazards Program*, <http://earthquake.usgs.gov/earthquakes/eqinthenews/2011/usc0001xgp>
- Data on earthquake near Christchurch Feb 2011 from GeoNet: www.geonet.org.nz/earthquake/historic-earthquakes/top-nz/quake-14.html

3 The assessment package

The Year 9 QCATs arrive in your school as an assessment package comprising:

- *Student booklet*
- *Teacher guidelines*
- *Guide to making judgments.*

The final component of the QCATs assessment package is the *Sample responses* which will be available for download from the QSA Assessment Bank from the beginning of the QCATs implementation period.

3.1 Student booklet

The *Student booklet* includes:

- Setting the scene
- a variety of stimulus materials, such as text, pictures, graphs and tables
- activities and questions
- a *Guide to making judgments.*

3.2 Teacher guidelines

The *Teacher guidelines* is not an administration handbook. It provides teachers with advice, guidance and support on how to implement QCATs in order to provide students with the best opportunity to demonstrate their understanding and skills.

These guidelines:

- provide suggested scaffolds to support implementation
- list the components of the package
- list the materials and resources required
- include recommended timelines
- provide a *Guide to making judgments*
- provide a model response.

3.3 Guide to making judgments

The *Guide to making judgments* is included in both the *Teacher guidelines* and *Student booklet*. The *Guide to making judgments* assists teachers to work towards more consistent judgments, by providing a common approach to making judgments about the quality of a student's response.

It also tells students what is valued in the assessment and how a decision about the quality of their responses is made. It clarifies the relationship between the content descriptions, assessable elements and achievement standards by identifying the task-specific assessable elements and task-specific descriptors.

3.4 Sample responses

The *Sample responses* provide overall A to E responses that have been sourced from student work collected during field trials. Annotations discuss how student responses demonstrate the expected qualities.

Note: The *Guide to making judgments* is the primary document to inform judgments about the qualities evident in student work across A to E standards. The *Sample responses* are provided as a guide to support your judgments.

4 Timelines

Date	Action
Oct 2011	<p>2012 QCAT Design briefs published</p> <p>Design briefs for 2012 QCATs available on QSA website, specifying selected Australian Curriculum content descriptions to be assessed in 2012.</p>
Dec 2011	<p>2012 QCAT Design briefs updated with preparation advice</p> <p>Design briefs updated with preparation advice — for each learning area, a range of suggested learning experiences and resources have been provided to assist teachers in planning and implementing QCATs in 2012.</p>
22 Jun 2012	<p>Assessment package delivered</p> <p>On receipt of the assessment package, schools must check and confirm the contents by completing and returning the <i>Faxback sheet</i> supplied in the package.</p>
9 Jul – 21 Sept 2012	<p>Implementation of QCATs</p> <p>Schools will:</p> <ul style="list-style-type: none"> · implement the QCATs · grade the QCATs · submit QCATs data electronically, using either OneSchool (EQ) or QSA's QCATs Data Tool available on the QSA website (QCEC and ISQ). <p>Note: It is recommended that teachers participate in some form of moderation process. The student-free day on 22 October could be used for moderation.</p>
22 Oct 2012	<p>Schools notified if chosen by QSA to submit representative samples of student work</p> <p>Schools chosen to submit representative samples of student work will:</p> <ul style="list-style-type: none"> · identify five sample responses that are representative of A to E student responses · send the samples of student work to: Project Officer (Operations) Queensland Studies Authority Assessment Resources Branch PO Box 307 Spring Hill QLD 4004
Jan 2013	<p>Random sampling exercise</p> <p>The representative samples of student work are used to determine the level of statewide consistency of teacher judgments.</p>

Appendix: Design elements for quality assessment

<i>Design elements (CIAU)</i>	<i>The assessment:</i>
<p>Credibility Does the assessment generate sound evidence about student performance?</p>	<ul style="list-style-type: none"> · explicitly identifies the assessable elements · is accompanied by clearly stated standards · is clearly aligned with the selected content descriptions from the Australian Curriculum · has clear conditions of assessment, e.g. time, resources · is fair and equitable to all students · provides opportunity for students to demonstrate what they know and can do
<p>Intellectual quality Is the assessment intellectually challenging?</p>	<ul style="list-style-type: none"> · draws in sufficient depth and breadth upon the targeted knowledge, concepts and skills · engages students in a range of ways of working · encourages students to demonstrate critical analysis · has clear expectations
<p>Authenticity Does the assessment use a realistic and complex problem?</p>	<ul style="list-style-type: none"> · has an appropriate and meaningful context for all students · is engaging and motivating · has genuine and valued purpose · has a context that is appropriate for the assessment
<p>User friendliness Does the assessment clearly communicate to students what is needed for producing their best performance?</p>	<ul style="list-style-type: none"> · has an accessible and appropriate format · has layout, cues, visual design, format and choice of words that clarify what is expected · has examples and resources that are helpful to students · provides a complete set of guidelines (including models) that allow students to reflect on, rehearse and review their responses.

Queensland Studies Authority

154 Melbourne Street, South Brisbane

PO Box 307 Spring Hill

QLD 4004 Australia

T +61 7 3864 0299

F +61 7 3221 2553

www.qsa.qld.edu.au
