

# Earth Science (2000)

Advice for teachers

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## Highlighted standards

June 2010

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Compiled by the Queensland Studies Authority

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### *About this advice*

This advice is intended to help teachers implement the syllabus in their school setting. The tables highlight:

- different aspects in the standards
- how these aspects vary across the different standards.

When designing assessment it is important to provide opportunity for students to demonstrate the general objectives across the full range of standards. Use the shaded standards to ensure opportunity is provided in assessment instruments.

When making judgments about student work it is important to match the qualities of student work to the descriptors in the standards described in the syllabus. Use the shaded standards to make an on-balance judgment by matching the qualities of student work to the descriptors.

	Standard A	Standard B	Standard C	Standard D	Standard E
Knowledge, conceptual understanding and application	<p>The student consistently:</p> <ul style="list-style-type: none"> <li>recalls <b>extensive</b> knowledge in <b>most areas</b></li> <li>demonstrates a <b>clear understanding</b> of concepts <b>in depth</b> in <b>most areas</b></li> <li><b>recognises and explains</b> relationships amongst <b>straightforward and complex</b> concepts, comparing and contrasting them where appropriate</li> <li><b>successfully applies</b> knowledge and concepts in <b>most situations</b>, including <b>many that are novel and/or complex</b></li> <li><b>evaluates</b> both the <b>relevance and scientific merit</b> of information <b>provided in or derived from</b> earth science contexts.</li> </ul>	<p>The student consistently:</p> <ul style="list-style-type: none"> <li>recalls <b>basic</b> knowledge in <b>most areas</b> together with <b>considerable knowledge in many</b> of these</li> <li>demonstrates a <b>clear understanding</b> of concepts in <b>most areas</b></li> <li><b>recognises and explains most</b> of the relationships amongst <b>straightforward</b> concepts</li> <li><b>successfully applies</b> knowledge and concepts in <b>most straightforward situations</b> and <b>some that are novel and/or complex</b></li> <li><b>evaluates</b> the <b>relevance</b> of information <b>provided in or derived from</b> earth science contexts.</li> </ul>	<p>The student consistently:</p> <ul style="list-style-type: none"> <li>recalls <b>basic</b> knowledge in <b>most areas</b></li> <li>demonstrates a <b>broad understanding</b> of concepts in <b>most areas</b> with <b>few misconceptions</b></li> <li><b>recognises and explains most</b> of the <b>obvious</b> relationships amongst <b>straightforward</b> concepts</li> <li><b>successfully applies</b> knowledge and concepts in <b>most straightforward situations</b></li> <li><b>selects</b> some <b>relevant</b> information from that <b>provided in or derived from</b> earth science contexts.</li> </ul>	<p>The student consistently:</p> <ul style="list-style-type: none"> <li>recalls <b>some</b> knowledge in <b>several areas</b></li> <li>demonstrates <b>some understanding</b> of concepts in <b>several areas</b> but with <b>many misconceptions</b></li> <li><b>recognises some</b> relationships amongst <b>straightforward</b> concepts</li> <li><b>applies</b> some knowledge and concepts in <b>some straightforward situations</b></li> <li><b>uses</b> information but <b>does not</b> reflect on its <b>relevance and/or scientific merit.</b></li> </ul>	<p>The student consistently:</p> <ul style="list-style-type: none"> <li>recalls <b>some</b> knowledge</li> <li>demonstrates <b>some understanding</b> of a <b>few</b> concepts</li> <li><b>demonstrates</b> an understanding that <b>some</b> concepts are interrelated</li> <li><b>applies</b> some knowledge and concepts <b>but with errors</b></li> <li><b>uses</b> some information.</li> </ul>

	Standard A	Standard B	Standard C	Standard D	Standard E
Working scientifically	<p>Either individually or as a member of a group, the student consistently:</p> <ul style="list-style-type: none"> <li>recognises and identifies investigation questions for a range of problems including those that are novel and/or complex</li> <li>plans a range of scientific investigations of problems including many with elements of novelty and/or complexity</li> <li>implements investigations using scientific techniques and following procedures safely and correctly</li> <li>records and organises relevant information logically and systematically</li> <li>assesses and critically evaluates the validity and adequacy of qualitative and quantitative data.</li> </ul>	<p>Either individually or as a member of a group, the student consistently:</p> <ul style="list-style-type: none"> <li>recognises and identifies investigation questions for a range of problems including some with elements of novelty and/or complexity</li> <li>plans a range of scientific investigations of problems including some with elements of novelty and/or complexity</li> <li>implements investigations using scientific techniques and following procedures safely and with few errors</li> <li>records and organises relevant information</li> <li>assesses the validity and adequacy of qualitative and quantitative data.</li> </ul>	<p>Either individually or as a member of a group, the student consistently:</p> <ul style="list-style-type: none"> <li>recognises and identifies investigation questions for a range of straightforward problems</li> <li>plans a range of scientific investigations of straightforward problems</li> <li>implements investigations using scientific techniques and following procedures safely but with some errors</li> <li>records relevant information</li> <li>assesses some aspects of the validity and adequacy of qualitative and quantitative data.</li> </ul>	<p>Either individually or as a member of a group, the student consistently:</p> <ul style="list-style-type: none"> <li>recognises a range of straightforward problems</li> <li>participates in planning some scientific investigations of straightforward problems</li> <li>implements investigations using scientific techniques and following procedures safely but with many errors</li> <li>records some information</li> <li>offers observations about the validity and adequacy of qualitative and quantitative data.</li> </ul>	<p>Either individually or as a member of a group, the student consistently:</p> <ul style="list-style-type: none"> <li>recognises some problems</li> <li>participates in some aspects of planning scientific investigations of straightforward problems</li> <li>follows instructions for some aspects of investigation but with little attention to safety issues and with little procedural accuracy</li> <li>records minimal information</li> <li>offers observations about qualitative and quantitative data.</li> </ul>

	Standard A	Standard B	Standard C	Standard D	Standard E
Using information scientifically	<p>Either individually or as a member of a group, the student consistently:</p> <ul style="list-style-type: none"> <li>provides <b>logical and detailed interpretations</b> of information, and of relationships within the information</li> <li>makes <b>generalisations about and synthesises information with considerable insight, in well integrated and convincing explanations</b></li> <li>offers <b>convincing and valid conclusions</b>, and <b>logical and well-supported evaluations</b> of conclusions</li> <li>presents information <b>cogently and clearly</b> in a <b>variety of modes</b>, using a <b>range of genres</b>, <b>demonstrating control of the conventions</b> of language and using <b>accurate</b> referencing.</li> </ul>	<p>Either individually or as a member of a group, the student consistently:</p> <ul style="list-style-type: none"> <li>provides <b>logical and clear interpretations</b> of information</li> <li>makes <b>generalisations about and synthesises information in convincing explanations</b></li> <li>offers <b>valid conclusions</b>, and <b>logical evaluations</b> of conclusions</li> <li>presents information <b>clearly</b> in a <b>variety of modes</b>, using a <b>range of genres</b>, using <b>appropriate conventions</b> of language and using <b>reasonably accurate</b> referencing.</li> </ul>	<p>Either individually or as a member of a group, the student consistently:</p> <ul style="list-style-type: none"> <li>provides <b>simple explanations</b> of information</li> <li>makes <b>generalisations</b> about information in <b>simple explanations</b></li> <li>offers <b>justifiable conclusions</b>, and <b>partial evaluations</b> of conclusions</li> <li>presents information <b>clearly for the most part</b>, in a <b>variety of modes</b>, using <b>given genres</b>, using <b>some basic conventions</b> of language and using <b>some</b> referencing.</li> </ul>	<p>Either individually or as a member of a group, the student consistently:</p> <ul style="list-style-type: none"> <li>provides <b>opinions</b> and <b>some explanations</b> about information</li> <li>makes <b>some generalisations</b> about information</li> <li>offers <b>conclusions</b> and <b>opinions</b> about conclusions</li> <li>presents information, using <b>basic conventions</b> of language and using <b>some</b> referencing.</li> </ul>	<p>Either individually or as a member of a group, the student consistently:</p> <ul style="list-style-type: none"> <li>provides <b>opinions</b> about information</li> <li>makes <b>generalisations</b> about <b>aspects</b> of information</li> <li>offers <b>conclusions</b></li> <li>presents information, using <b>some basic conventions</b> of language.</li> </ul>

Note: Colour highlights have been used in the table to emphasise the qualities that discriminate between the standards.