

Years 9–10 assessment techniques and conditions

Science

This document outlines assessment techniques and conditions to achieve range and balance within an assessment program. Schools consider the local context, and the age and capabilities of the students, when selecting appropriate assessment techniques and conditions.

Techniques	Investigation	Experimental investigation	Examination
Description	An investigation assesses students' abilities to research, and to collect, analyse and draw conclusions about secondary data and information.	An experimental investigation assesses students' abilities to experiment, generate and analyse primary data.	An examination assesses students' responses that are produced independently, under supervised conditions and in a set timeframe. An examination ensures student authorship.
	An investigation requires students to locate and use data or information that goes beyond what they have been given and the knowledge they currently have. Research conventions must be followed, e.g. acknowledging sources, regardless of the presentation format.	<p>An experimental investigation requires students to investigate a hypothesis or answer practical research questions. The focus is on planning an experimental investigation, and problem-solving using primary data generated by the student. Experiments may be conducted in the classroom or field.</p> <p>An experimental investigation is based on research practices. These practices include locating and using data or information that goes beyond what they have been given and the knowledge they currently have. The research process is iterative, and is based on the exploration of a research question or hypothesis.</p> <p>An experimental investigation follows an inquiry approach that aligns to the Science Inquiry Skills strand for a year level.</p>	<p>An examination requires students to respond to one or more assessment items. These items are based on questions or tasks that are typically unseen. Questions or tasks may be based on stimulus material. Stimulus materials may be seen or unseen.</p> <ul style="list-style-type: none"> • Seen questions, statements or stimulus materials should be provided with sufficient time for students to adequately engage with the materials. • Unseen questions, statements or stimulus material should not be copied from information or texts that students have previously been exposed to, or have directly used, in class. <p>Stimulus materials may be drawn from practicals, activities or case studies studied in class, and may include data.</p>



Techniques	Investigation	Experimental investigation	Examination
Formats (examples only)	Formats include: <ul style="list-style-type: none"> • written <ul style="list-style-type: none"> – report • spoken/signed or multimodal <ul style="list-style-type: none"> – interview – debate – seminar – conference – webcast – podcast – webpage. 	Formats include: <ul style="list-style-type: none"> • written <ul style="list-style-type: none"> – scientific report – article for science journal – record of investigations, including set-up, observations, data gathering and analysis, e.g. establishing and maintaining an aquarium – computer-generated simulation • spoken/signed or multimodal <ul style="list-style-type: none"> – demonstration – model – practical demonstration – scientific phenomena modelling – computer-generated simulation. 	Formats include: <ul style="list-style-type: none"> • short response items <ul style="list-style-type: none"> – single word, true/false, multiple choice or sentence answer – paragraph response (stand-alone or linked to stimulus) • extended response items <ul style="list-style-type: none"> – explanation longer than one sentence, up to several paragraphs – practical exercise and/or calculation – construction, use, interpretation or analysis of primary or secondary data, graphs, tables or diagrams – application of algorithms or demonstration of mathematical calculations and problem-solving • response to stimulus.
Conditions	Suggested length:* <ul style="list-style-type: none"> • written responses 600–800 words • spoken/signed responses 2–3 minutes • multimodal responses 3–4 minutes. 	Suggested length:* <ul style="list-style-type: none"> • written responses 600–800 words • multimodal responses 3–4 minutes • practical demonstration — as negotiated. 	Suggested time: <ul style="list-style-type: none"> • up to 90 minutes, plus 10 minutes perusal. Suggested length:* <ul style="list-style-type: none"> • up to 400 words.
Notes			
Responses can be written, spoken/signed or multimodal (integrating visual, print and/or audio features), recorded or live.			
* Length of student responses should be considered in the context of the assessment. Longer responses do not necessarily provide better quality evidence of achievement.			
All practical work must be organised with student safety in mind. Information on creating safe and healthy school environments, along with current work health and safety laws, is available at the Queensland Department of Education website. Schools must ensure their practices meet current guidelines.			