

409/16
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PHYSICS

(Year 11 D409 & 12 E409)

Grade-Related Descriptors



GRADE-RELATED DESCRIPTORS

THE GRADING PROCESS

The current model for assigning grades at the conclusion of a subject is “standards-referenced”. In such a system each student’s performance in a subject is considered with reference to a set of predetermined standards at each grade level. The “predetermined standards” are defined through the use of grade-related descriptors.

Grade-related descriptors aim to capture and describe (as explicitly as possible and in relatively broad terms) those behaviours expected to be typically displayed by students at each grade level for each subject. For teachers they are a *point of reference* against which they must match their professional judgment in determining students’ final grades.

FEATURES OF GRADE-RELATED DESCRIPTORS

As a general principle, grade-related descriptors should:

- summarise the *general characteristics* of student performance at each level of achievement
- express, in *positive terms*, what a student knows, understands and is able to do
- *clearly define* on a continuum of performance the level of proficiency for *all grades* (A, B, C, D and E)
- be readily *usable* by teachers in making judgments about final grades to be assigned
- provide a *‘target’* for students in their efforts to obtain various grades
- be developed with reference to student work samples as *source material* at each grade level
- relate directly to the content of the course

USING GRADE-RELATED DESCRIPTORS

In planning the assessment program and developing each component task teachers will need to ensure that:

- the nature of each task takes account of the ways that students typically develop over the period of studying the subject
- the rubric for numerical assessment (marking key) for each task is designed with reference to the grade-related descriptors.
- each task that counts towards the awarding of a grade provides students with the opportunity to demonstrate achievement across the full range of performance described in the relevant section/objective of the grade-related descriptors.

The *critical use* of grade-related descriptors is to assist teachers in making comparable judgments about the grades to be awarded at the conclusion of a subject. They do not stand alone. They are *one of a number* of mechanisms available to teachers in deciding summative assessments to be reported to Curriculum Council. They are best used as a point of reference in determining cut-offs after the evaluation of the assessment data collected.

When applying grade-related descriptors, it is also necessary to note that an A student, for example, need not achieve an ‘A’ on all objectives. Teachers will develop a *profile* of achievement of their students across different aspects of the subject and must themselves, with reference to exemplars and moderation procedures, make the *final judgment* of the grade achieved.

GRADE-RELATED DESCRIPTORS

EDUCATIONAL OBJECTIVES	A	B	C	D	E
The student:	The student:	The student:	The student:	The student:	The student:
comprehends the fundamental concepts and principles of Physics	shows extensive knowledge in all areas of the course.	shows a high level of knowledge in most areas of course content.	shows a sound knowledge of most areas of the course content.	shows some knowledge of course content, but significant gaps are common.	shows very limited knowledge of the course content.
	demonstrates a very good understanding of terms, facts and concepts.	demonstrates a good understanding of terms, facts and concepts.	can demonstrate an understanding of terms, facts and concepts.	can demonstrate an understanding of terms, facts and concepts.	
demonstrates skills of logical thinking	a high level of proficiency at all process skills.	shows proficiency in most process skills.	shows proficiency in many process skills.	has difficulty showing proficiency in many of the process skills.	frequently does not show a minimal proficiency in the process skills.
demonstrates the ability to solve problems	can solve problems involving two steps.	can solve problems involving an understanding of a single concept and involving a single formula and single unknown.	can solve most problems which involve an understanding of a single concept and involving a single formula and a single unknown.	can solve elementary problems involving simple relationships.	has limited problem solving ability even with simple problems.
	has little or no difficulty solving problems involving two unknowns.	can solve problems involving two steps but has some difficulty solving problems involving two unknowns.			
uses the language and conventions of Physics to develop skills in communication	communicates understanding of physical situations.	communicates understanding of physical situations.	can recognise physical situations which exemplify the knowledge.		

EDUCATIONAL OBJECTIVES	A	B	C	D	E
The student:	The student:	The student:	The student:	The student:	The student:
uses instruments and procedures with an appropriate level of precision	makes accurate observations and measurements and specifies precision where appropriate.	makes accurate observations and measurements and specifies precision where appropriate.			shows limited knowledge and ability in observing, measuring and recording of experimental data.
	records observations in an appropriate manner.	records observations in an appropriate manner.	shows adequate skills in recording observations in an appropriate manner.	has difficulty with recording observations in an appropriate manner.	
assembles and operates equipment in a safe and organised manner	shows a high level of skills in the use of physics apparatus and laboratory techniques.	shows a high level of skills in the use of physics apparatus and laboratory technique.	can manipulate and accurately use the apparatus involved in most experiments.	can manipulate and accurately use the apparatus involved in most experiments.	has difficulty in manipulating and accurately using physics apparatus.
performs experiments to obtain data so that physical relationships can be formulated and tested	shows a confident, competent approach to physics experimental procedures.	shows a confident, competent approach to physics experimental procedures.	can perform a procedure using equipment given instructions.	can perform a procedure using equipment given instructions.	has difficulty following experimental procedures.
presents and interprets experimental data in graphical and tabular form	extrapolates and interprets graphical information; recognises anomalous data and takes appropriate action	extrapolates and interprets graphical information.	can draw accurate schematic diagrams and graphs, and can interpret simple graphs.	can draw accurate schematic diagrams and graphs.	uses simple graphs to obtain information.
formulates hypotheses, inferences and relationships from available data	shows a high level of critical analysis and interpretation of experimental results.	critically analyses and interprets experimental results.	has limited success with analysis and interpretation of results.	has difficulty with analysis and interpretation of results.	cannot analyse and interpret results.