FIELD SCIENCES

Review of *Physics* Level 3 achievement standards

Subfield Science **Domain**	**Id**	**Subject reference**
Physics	90518-90523	Physics 3.1-3.6

The Ministry of Education and the Secondary Education Group Assessment business unit of NZQA have completed a review of the achievement standards listed above that were registered in October 2003.

New Registration date **October 2005**

Date new versions published **October 2005**

Planned review date **March 2008**

Summary of review and consultation process

This review is part of the planned cycle of review that takes place after the first year of use of the achievement standards.

- Initial feedback and comments were collated from teachers, schools, moderators, examiners, markers, material developers, and other stakeholders.
- This information was reviewed by a subject expert panel and recommendations were made in March 2005.
- The recommendations were sent out for full consultation to secondary schools, tertiary institutions, and others in the education sector, in April/May 2005.
- Feedback from this full consultation has informed the changes described below.

Main changes resulting from the review

AS90518, Physics 3.1
This achievement standard has been designated expiring – review category C – and is replaced by AS90774, Physics 3.1.

The word ‘experiment’ has been replaced with ‘investigation’ so as to be more in line with the relevant achievement objective from Level 8 in the curriculum from which this achievement standard is derived. While this has somewhat broadened the scope of the achievement standard, it is not intended to be an open-ended investigation. The words ‘with guidance’ have been added and this is clarified in Explanatory Note 3. It is expected that two to three hours of student investigation would be sufficient to generate the evidence required for this achievement standard.

The two criteria have been merged into a single more generic criterion. This is to facilitate more holistic assessment. The differences between the grades of achievement have been more fully unpacked in the explanatory notes. Explanatory Notes 4, 5, and 6 provide details of the evidence that would be typically expected for grades of achievement.

Skills and knowledge in relation to uncertainties have been included in this achievement standard now that AS90519, Physics 3.2 has been designated as expiring – review category D – and not replaced. It was considered better to include the consideration and processing of uncertainties into the context of a physics investigation.

Five credits have been allocated to AS90774, Physics 3.1 because of the inclusion of skills and knowledge in relation to consideration and processing of uncertainties.

AS90519, Physics 3.2
This achievement standard has been designated as expiring – review category D – and not replaced. The reason is that this achievement standard had a very narrow focus and did not reflect a key achievement objective from the curriculum. Treatment of uncertainties has been built into version 1 of AS90774, Physics 3.1. There was majority support for this in the consultation feedback.

AS90520-AS90523, Physics 3.3-3.6
The following changes have been made to the above achievement standards.

'Concise' has been removed from the achievement with excellence criterion because it was considered that this did not clearly describe the key difference between achievement with merit and achievement with excellence.

The relationships listed in Explanatory Note 2 are now restricted to new relationships introduced at Level 3.

AS90523, Physics 3.6
The credits allocated to this achievement standard have been increased from 5 to 6. The extra credit has been allocated because this achievement standard was considered to include greater skill and knowledge coverage than the other externally assessed achievement standards, requiring longer learning and assessment time.

Internally assessed achievement standards, 90518 and 90519, categorised as category C or D expire at the end of December 2006.

Impact on Accreditation and Moderation Action Plan (AMAP)

None.

Impact on existing qualifications

None.

Impact of changes on NCEA Exclusions List

The following exclusion relationships have been added to the List.

Level 3 Achievement Standard	Achievement or Unit Standard
90520	6391
90521	6397
90522	6396

Summary of main changes to achievement standards' Ids, classification, titles, levels, and credits

The following summary shows the changes made to the achievement standards as a result of the review. All changes are in **bold**.

Key to review category

A Dates changed, but no other changes are made - the new version of the standard carries the same Id and a new version number

B Changes made, but the overall outcome remains the same - the new version of the standard carries the same Id and a new version number

C Major changes that necessitate the registration of a replacement achievement standard with a new Id

D Achievement standard will expire and not be replaced

Subfield Science
Domain Physics

Id	Title	Level	Credit	Review Category
90518	Carry out a practical physics experiment that leads to a mathematical relationship	3	4	C
90774	**Carry out a practical physics investigation with guidance, that leads to a mathematical relationship**	**3**	**5**	
90519	Process uncertainties in data and graphs	3	2	D
90520	Demonstrate understanding of wave systems	3	4	B
90521	Demonstrate understanding of mechanical systems	3	6	B
90522	Demonstrate understanding of atoms, photons and nuclei	3	3	B
90523	Demonstrate understanding of electrical systems	3	5 **6**	B