

New Zealand Qualifications Framework Levels 1 – 3, 2011

Physics

National Moderator's Report

National Moderator's Report for Physics

General Guidance for Assessors

The purpose of external moderation is to provide reassurance that teacher judgements are at the national standard and are made on the basis of assessment materials that are fair and valid. All assessment materials are expected to:

- give the student the opportunity to meet the requirements of the standard
- include an assessment schedule that gives evidence of appropriate student responses and clear judgements at all levels.

To help to ensure best assessment practice teachers need to access the Subject Specific Resources for Physics on the NZQA website: www.nzqa.govt.nz/physics

The resources on this webpage include:

1. annotated student exemplars
2. clarification of issues with the standards
3. newsletters - current and archived editions
4. previous national moderator reports
5. a link to the TKI resources

Moderation in 2011

Achievement Standard

90774

The student must state the mathematical relationship using the variables that are relevant to the experiment. The use of computer programmes to generate graphs leads to equations stated with x and y as the variables and students need to be aware that the equation in this form is not acceptable.

The evaluation of the quality of the results can be shown mathematically, however, if a discussion on the quality of the results is given it must go beyond a simple discussion on the experimental limitations and give reasons why the results are reliable.

Making judgements about what constitutes critical thinking can be challenging. The discussion must go beyond general statements and give specific comment on the experimental data. Students have to make an attempt to give the reasons for the differences between the physics theory and the experimental results or suggest what effect on the experimental results certain aspects of the experiment would have had.

90252

When assessing this standard the students must have the opportunity to demonstrate the measurement of at least three different physical quantities. If a small number of portfolio style experiments are being used to assess the standard it must be ensured that these requirements are still being fulfilled.

The justifications of the accuracy improving techniques must be specific to the measurement being made rather than a generic statement. The statement should include why the technique is necessary for that particular measurement and describe why the accuracy technique reduces the inaccuracy.

90935

Students should not be expected to give an extremely detailed method to achieve the standard or give a higher quality of method for Merit to be awarded.

The graph line does not have to be a straight line for students to be awarded Achieved, however the graph line must be a straight line for the student to be awarded Merit.

The gradient calculation must be related to the data the student has plotted. Student can use points that have appeared in the data table as long as they lie on the graph line. Where the student has given only one point in the gradient calculation and has therefore assumed the line goes through the origin, it must be checked that the line passes through (0,0).

The equation of the relationship must include the variables which have been recorded and plotted. The equation should not be stated in terms of x and y unless it has been clearly defined how the x and y symbols are representing the plotted variables.

The conclusion should link the processed data to the identified trend on the graph. Usually students will give a general comment which is acceptable. If specific conclusions are given they must reflect and be supported by the actual values recorded in the data.

90936

The standard does not require the student's research to be assessed but the application being researched by the students should be appropriate to Level 6 of the curriculum. The student should give an account of the application which includes the physics relevant to the functioning of the application.

The National Moderator reports will be replaced by newsletters and clarifications documents from 2012.