



General Certificate of Education

Applied Science

8771/8773/8776/8779

SC10 Physics of Performance Effects

Report on the Examination

2009 examination - June series

Further copies of this Report are available to download from the AQA Website: www.aqa.org.uk

Copyright © 2009 AQA and its licensors. All rights reserved.

COPYRIGHT

AQA retains the copyright on all its publications. However, registered centres for AQA are permitted to copy material from this booklet for their own internal use, with the following important exception: AQA cannot give permission to centres to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Set and published by the Assessment and Qualifications Alliance.

General Comments

The number of candidates entered for the portfolio units has again increased this year and many centres have continued to guide their candidates to achieve well. These units have generated much high quality work from centres. Credit should be given to both teachers and candidates in making considerable effort to meet the expected standards.

The random sampling of accredited centres confirmed the value of the accreditation process - with centre marking being confirmed as being in line with AQA standards in most cases, but with a small number showing some "slippage" leading to loss of accreditation.

(The accreditation scheme is used where centres have demonstrated that they are able to mark to the required AQA standards. Under the scheme AQA will accept centre marks without the need to complete the moderation process.)

Portfolio issues

Portfolio construction remains a concern with some candidates, and it is evident that further centre guidance is needed. However, it is very important that centres continue to provide the opportunity for candidates to demonstrate flair and individuality. It is easier for moderation if portfolio structure matches the structure of the unit. Centres are also advised to monitor portfolios during their production as some candidates continue to produce unreasonably large portfolios.

For some units, it appears that the level of expectation of the quality of portfolio content and/or the outcomes that candidates are able to produce are set too low. A number of centres are still judged to have marked candidates work too generously and where this was the case, centres marks were deemed out of tolerance by the moderator and had to be reduced.

Some of the causes of overgenerous marking included:

- Misinterpretation of the requirements of unit
- Too much work on non-essential areas and/or too little on required aspects
- failure to fully complete aspects of the unit as required in the "Banner", in such cases work should be assessed in line with the guidance given in section 9.2 of the teachers' guide
- Over-lenient interpretation of the assessment grids
- Lack of rigour in marking/assessment of work – incorrect science accepted, incorrect calculations marked as correct, incorrect statements accepted, praise for work which is of poor quality, marks allocated for work for which there is no evidence – or no supporting teacher comment (# in the assessment grids)
- Poor candidate skills in practical activities leading to a lack of precision and unreliability in results
- A lack of description by the centre assessor of candidate's level of practical skills, their awareness of safety procedures and degree of autonomy (marked # in the assessment grids) and resulting inconsistencies between the marks awarded by the assessor and the portfolio evidence
- The inclusion of materials downloaded from the internet either passed as the candidates own work or not referenced in the portfolio

As stressed at AQA standardising meetings held in autumn 2008, in communications sent to centres and in last year's Principal Moderators report, it is imperative that centres make it very clear to candidates that the incorporation of text downloaded from the Internet into portfolios is plagiarism and must not be tolerated.

Centres are reminded that many issues and points of guidance made in the 2008 Principal Moderators exam report are still valid and this remains a valuable source of information for centres seeking to improve their portfolios.

Unit 10 – Physics of Performance Effects

The quality of portfolios produced for this unit ranged from outstanding to very poor. The range of contexts used by centres for this unit is wide: different venues and performances can be used for the lighting and sound system designs, and the performance attended for the evaluation task can be of many types. What is important is that the venue and the performance or event used for the designs, and the performance attended, must all give candidates the opportunity to access all the assessment criteria. If a candidate chooses a performance or event and the sound and lighting arrangements and equipment are simplistic, then it is unlikely that high marks will result. Similarly, if candidates are unable to access details of the lighting and sound designs for the performance attended, they cannot relate this at a scientific level to the effects produced and described in their evaluation.

Excellent choices of venue and event are evident, and some of these involved active participation in the technical side of productions with candidates taking responsibility for the sound and lighting for a particular scene. It is important that candidates produce their own designs, however, and do not rely on input from others.

Good portfolios had the following features:

- A good structure, logically based on the required components of study for the unit
- Scientific description of the venue characteristics: its size, shape, materials/structure, schematic plans, performance area, audience layout, etc (Candidates frequently left this until after the experimental work, but experiments should be carried out with the venue characteristics in mind and methods adjusted accordingly where appropriate)
- Demonstration of a good understanding of sound waves and light waves
- Full reports of experiments into light and sound, analysis of results and appropriate calculations based firmly on the requirements of the specification
- A consideration of different sound and light system components including control systems
- A design for the sound system for the event or performance chosen, applying the scientific knowledge and understanding gained from the experiments and research to explain the scientific basis of the design and systems chosen
- A design for the lighting system showing a similar level of knowledge and appreciation of relevant factors and equipment
- A detailed description of the sound and lighting systems used in the performance attended and how these are used within the performance to create the desired effects
- Substantial use of accurate quantitative relationships in the experimental work
- Sensible costing for the performance attended

Where portfolios showed weaknesses the following were identified:

- Too much reliance on insufficiently altered source materials
- Inadequately explained, executed and concluded experimental work on sound and light

- Insufficient links made between the science behind – and the findings from – experimental work and the designs for sound and lighting systems and the evaluation of a performance
- A failure to appreciate the expected range for the calculated value of the costing of a performance – some are far too high and some are very low

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results statistics](#) page of the AQA Website.