



**General Certificate of Secondary Education  
June 2011**

**ICT**

**45203**

**(Specification 4520)**

**Unit 3: Practical Problem Solving in ICT**

***Report on the Examination***

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### **Unit 3: Practical Problem Solving in ICT**

In 2011, unit 3 offered 6 problems of which 3 in particular were frequently attempted by candidates. The overall entry in this first year was, as expected, very low. The work presented showed variable standards of attainment, with candidates attempting to indicate their understanding of the requirements of the problem. The project management approach needed was not well understood by all candidates. Although it is expected that centres and candidates will have their own routes for working through a unit 3 problem, it essential that all evidence is presented in an identifiable form according to the Candidate Booklet.

In Candidate Booklets the 6 problems that candidates could choose from are:

- Help to organise a school visit to a local attraction
- Help to organise a school prom
- Help to organise an event to raise funds for a charity
- Help to organise an event in school for senior citizens or mothers and toddlers
- Help to organise work placement arrangements
- Help to organise a school sports team.

#### **Part 1: Planning and managing the problem:**

##### **1a Milestones**

Work presented by some candidates showed they had read and understood the requirements of the problem and were able to list the appropriate steps (eg creating a model of the 'costs', collecting the data, selecting the necessary lists, etc) to produce the planning stages. However there were other candidates who did not attempt it. Candidates who used the Candidate Booklet to identify steps needed to solve the problem set, particularly in sections 2 and 6, generally did well in this section. Those who only thought about the sections needed in the Portfolio (eg Risk, Progress, Managing storage, etc) did not achieve well here.

Once the milestones had been introduced then candidates need to break them down into manageable sub-steps. Getting the sequence correct and determining the duration that each milestone might take was next. The final part was to consider the resources needed to produce them. Milestones are essential to be able to undertake sections 1c and 2g effectively.

##### **1b Risk**

All candidates may use the risk outlined in the Candidate Booklet. They should explain the issues involved with it and suggest how it could be avoided and what precautions they would take. This section was generally done well by those who attempted it. It was expected that candidates would select appropriate risks from the topics they had studied in the specification subject content or which directly related to the problem they had chosen. This was usually the case.

##### **1c Progress**

Candidates who had not attempted the milestones were not able to achieve marks in this section. Where an attempt at milestones had been made candidates were able to indicate the status of the outcome and confirm whether it had been completed or not. Candidates' work in this section was variable. Managing progress was sometimes ineffective, as candidates are expected to review how they have achieved each milestone by commenting on its status and clearly confirming that it has been completed or what issues were encountered.

## **1d Managing storage**

This section was generally tackled appropriately. Candidates included effective diagrams (screenshots) of their folder structures, which were almost always appropriate and well done. Filenames were usually sensible but not always explained. The area of managing storage which many candidates need to develop was in the use of versions of their files (where they were needed).

Candidates from many centres produced work for sections 2a, 2b and 2c but not always in other identifiable sections of work. This was disappointing as there were many marks available.

## **Part 2: Independently using ICT to:**

### **2a Collect information**

Most centres seemed to mark this section correctly, with many candidates considering the data needed to solve the problem first. Candidates who did this well went on to consider alternative ways of collecting the data (eg online forms, e-mail capture, etc). They then produced their own collection method, showing the final version here. A 'form' was filled in (there only needs to be one 'form' included in the Portfolio). Other data was collected and a database structure was set up with a database entry form used to enter the data. Additional data to that collected initially was entered at this stage. Candidates who understood the requirements of this section also reviewed the data collected and used. Able candidates may have separated the data collected into related tables, used validation rules to prevent unsuitable data from being entered and created a database entry form which contained a sub-form.

Moderators gave a higher weighting to candidates' work on collecting and gathering information than to their consideration of alternative ways of collecting information or reviewing the information collected.

### **2b Select information**

The selection of information was different for each problem but the level of demand was comparable. More able candidates considered what information was necessary to be initially sent to parents. The next stage for each 'selection requirement' was to consider alternative ways of selecting what was needed (eg 'hard-wired' search, sort, 'parameter' search, 'wild card' search, etc). Many candidates had obviously created the selection method and showed the final version here. More able candidates made it fit for purpose by linking the selection method to a report or mail merged document – there were some excellent examples of work shown for this aspect. Again only the final version is required for this section. It was especially noticeable that the most able candidates completed all aspects of selecting information correctly and in an appropriate way.

Moderators gave a higher weighting to candidates' selection of information than to their consideration of alternative ways of selecting or using information which is relevant and fit for purpose.

### **2c Format information**

This should have been an easy section in which to score marks but several candidates limited themselves almost exclusively to explaining the formatting of text. There are six elements which candidates are required to show formatting techniques for: page layout, text, tables, images, numbers and records/cells. The purpose of the formatting is to make the 'end product' fit for purpose as appearance is very important. More able candidates did explain/describe the use of page layouts in their Report (or Portfolio), tables in their Portfolio

(or in their database) and images (eg screenshots) used in their Report (or Portfolio). However the formatting of number (which could have been used in a database or model) and records/cells (which could have been used in a database or spreadsheet) were less commonly included.

This was not always a discrete section and moderators sometimes had to make decisions about what was allowable elsewhere in a candidate's work. This may have accounted for some of the differences between centre and moderator marks.

### **2d Modelling with data**

Most centres appeared to mark this section correctly. Many candidates were provided with a data sheet to assist them to analyse the data needed but others had used Internet sites to gather the data themselves.

The model only needs to be a simple one but it must tackle the essential nature of the 'costs' involved. In general, candidates did show the model had been created (eg printing out formulae/functions used). Selection and analysis of data to be used was brief, if present at all. The use of 'what if' questions was variable but the element which needed most development was in the appropriateness of the interpretation of the results obtained in terms of the situation being modelled.

### **2e Develop information**

This section was variably produced by candidates. In some candidates work, Develop information wasn't present as a separate section. This section can be considered as the 'hub of the solution' for many other sections of Part 2 of the Portfolio (eg 2a, 2b, etc).

It is preferable if candidates show evidence of developing their solution in one section. They could then abstract the final parts produced to use for other sections (such as Collect information). Hence in this section, it was expected that candidates would show stage(s) in producing their data collection 'form'; setting up their database table(s) and database entry form(s); creating a search, database report or mail merge letter. The completeness of this and candidates' commentary (explanation, description or statement) determined the mark awarded. Although there were some excellent examples of the type of work to be included it wasn't a universally well produced section.

### **2f Produce a report**

Many candidates presented a separate report which made use of previous work from their Portfolio. By doing this they achieved an aspect of the report which was to bring together a wide range of different forms of information collected from the Portfolio. The report could be produced using Presentation or a 'Publishing' software. It should include the final versions of 'things' produced for the solution required by the organiser (ie no development work should be included). The report does not need to include sections of the Portfolio which aren't directly involved in the solution required by the organiser (eg no need for Milestones, Risk, Evaluation, etc in the Report).

The report should be formal, which means referring to the receiver, sender and date produced, with a contents section incorporated. The language used should reflect the audience (eg headteacher) for whom it is intended. The quality of the reports seen varied greatly but a significant factor was how well (or not) candidates explained the reasons for including something. A summary section was expected to include a conclusion and recommendations.

### **2g Evaluate**

In Evaluate, candidates need to consider the milestones they established in Part 1. Typically candidates will have about 7 major milestones. This evaluation is not about sections needed in the Portfolio (eg not about Risk, Storage, etc).

In general, this was not well done by some candidates and as it is a section with a high range of marks the following advice is offered:

Candidates should consider **three** of their milestones in depth and reflect on how well they were achieved. If they are able to describe how effectively these three were solved, then an award of 7-8 marks is appropriate. If in addition they are able to compare these effective descriptions with an alternative effective solution, in each case, then they are clearly discussing the milestones for a mark award of 9-10. In both these cases, candidates should make complete/reasonable reference to the other milestones.

For other mark awards from 3 to 6 candidates need to have used their milestones to state they have been produced (3-4 marks) or state how they were produced (5-6 marks). Marks of 1-2 are for candidates who haven't produced original milestones or don't use what they have.

## **2h Evaluate others' use of ICT**

Evaluate others' use of ICT should concentrate on the three sections recommended in the Teacher's Notes (1a Milestones, 1b Risk and 2a Collect information). It should allow a candidate to explain how working in a group could/should have assisted in the solution. It was obvious that, as suggested in the Teachers' Notes, some candidates had opportunities for collaborative work in these sections. This appeared to assist them to make more a considered response as to how working with others had helped them.

Again, in general, this was not well done by some candidates and as it is another section with a high range of marks the following advice is offered:

For high mark awards of 4-6 marks, candidates should focus on the three suggested sections (or other suitable ones). Describe how working with others had an impact on what could/did happen to make the solution more effective (efficiency, wider range of ideas, better sequencing, other ways of tackling a problem, reduced times, etc).

Then to achieve 7-9 marks, candidates should suggest alternative effective ways of working with others in which an even more productive solution could have been achieved.

Many candidates only achieved 1-3 marks for stating a way(s) in which working with others could make an improvement.

## **Administrative matters**

- Internal standardisation has a significant effect on candidates' awards. Centres must standardise their marking across different teachers to ensure consistency.
- Teacher annotation: it is a requirement of the Code of Practice that controlled assessment is annotated by the teacher to indicate how marks are awarded; it is evident that centres which did annotate candidates' work were more likely to have their marking agreed. It is perfectly acceptable for annotation to simply indicate where in the candidates' work a particular criterion has been met.
- A positive aspect was that most centres did submit the mark grid with the candidates' work and this was particularly helpful in being able to confirm the accuracy of centre marking.
- As the majority of centres had used the electronic mark grid, there were very few arithmetical errors on:
  - the Candidate Record Form
  - the transfer between the above and the Centre Mark Form

- All appropriate paperwork needs to be fully completed and signed - including the Candidate Record Form and the Centre Declaration Sheet. There were some assignments without a candidate number and without the necessary Candidate Record Form. Failure to comply with these requirements can cause delays in carrying out the moderation.
- All necessary up-to-date paperwork can be located and downloaded from the AQA website.
- The Centre Mark Form, on which overall candidates' marks were entered for this component, is a three part carbonated form. Centres should ensure that:
  - the marks are clear on all three parts;
  - alterations clearly show the correct final mark;
  - both the second and third copies go to the moderator (or 2 copies of the EDI forms).
- The vast majority of centres are to be congratulated in sending the work of their students for moderation in a well organised fashion that was securely fastened together using treasury tags.
- In addition it would have assisted several candidates if they had been encouraged to present their work in the discrete sections required in their Portfolio and referred to in the Candidate Booklet (eg 1a Milestones, 1b Risk, 1c Progress, 1d Managing storage, etc). It is particularly needed for 2e Developing information and 2c Formatting information.

### **Mark Ranges and Award of Grades**

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](#) section of AQA's website.

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