



GCSE Information and Communication Technology

45203/TN

Unit 3 Practical Problem Solving in ICT

Confidential¹

Teachers' Notes for the Specimen Problem

Valid for candidates entered for examination in 2014, 2015 and 2016

To be given immediately to the teacher(s) responsible for GCSE ICT

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protected.**

THIS DOCUMENT MUST NOT BE SEEN BY CANDIDATES

Code 45203/TN

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¹ For the purposes of this document, the confidential pages of the Teachers' Notes have been identified. All except the marking criteria in Section 11 are confidential.

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1. Introduction

These Teachers' Notes (hereafter to be called Notes) are for the instruction and guidance of teachers conducting and marking Unit 3 Practical Problem Solving in ICT. Information about the standardisation of teachers, moderation and other matters relating to Unit 3 can be found in the specification.

There is a considerable amount of material for Unit 3 Practical Problem Solving in ICT (hereafter known as Unit 3) and it is important that you are familiar with it. If you have any problems that are not resolved by these Notes you are encouraged to contact us for further clarification using Ask AQA on the AQA website (www.aqa.org.uk/askaqa.php). Each centre will also be assigned a Controlled Assessment Adviser who will be available to help you with any centre-specific matters relating to Unit 3. Details of how to contact your Controlled Assessment Adviser will be provided when you tell AQA that your centre is taking the specification.

The following should be referred to when using these Notes:

- the current specification as on the AQA website
- Unit 3 Specimen Candidate Booklet
- Unit 3 Mark Grid Tool (as on e-AQA)
The Mark Tool restricts marks to only those allowed for a section. It totals sections and calculates the final mark awarded
- Guidance on Controlled Assessment.

Pages with the watermark 'Confidential' must not be issued to candidates. Pages containing the marking criteria, without the watermark, may be photocopied and issued to candidates when you think it appropriate.

2. What Unit 3 is about

- 2.1 Practical Problem Solving is about learning the basics of problem solving methodology. The unit requires candidates to organise their thoughts logically, to think creatively to produce an ICT solution and a report on a realistic problem provided by AQA. Candidates are required to model the solution to the problem, but are not required to use 'real' data. The problem solving methodology is based around a project management approach.
- 2.2 All work produced by candidates must be kept in a Portfolio. The purposes of the Portfolio are to:
- contain the information which could be used by another person who is interested in how the solution was produced to help them to do something similar
 - capture all the material which candidates want to submit for marking first by his/her teacher and later for moderation by the Moderator.
- 2.3 We understand that candidates will not always be familiar with the context of the problems that are provided by AQA. In these circumstances either the candidate(s) or their teacher should find a real end-user or someone who is prepared to act in the role of an end-user (although candidates must create or otherwise provide their own data). This person could either be a teaching colleague or another responsible adult from outside the centre. For example, if the problem is to devise an ICT solution to help in the organisation of a school sports day, a teaching colleague in the PE Department may be willing to simulate the role of the organiser. The same 'end-user' can be used by all the

candidates doing the same problem or different end-users for the same problem. Fellow candidates must not be used for this purpose.

3. Advice about the content and management of sections of the portfolio

- 3.1 It is important that candidates are familiar with the concepts in all sections before starting their Unit 3 work. You should work through a problem prior to offering it to a class. You should only use the specimen problem (available on e-AQA) for practice and explanation to classes.

You should provide some background information about the problem which will assist candidates understanding of what they have to do.

A project management approach to problem solving means that candidates must be clear about what milestones (see 3.3) are and what their purpose is in solving the problems set. **Establishing appropriate milestones affects the remainder of the work.**

You should give candidates an idea of when you expect them to complete their Unit 3 work as this may assist them in planning their milestones.

What follows below is further advice about the section on the Candidate Booklet entitled “5. What your teacher will be looking for and how to provide that evidence for your portfolio”

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

Work in this section involves planning and managing the problem. Although the planning will take place early, the management will continue on throughout the problem.

- 3.3 **1a Milestones:** candidates need to start to identify the ‘main’ stages of the problem that the organiser wants solving. The organiser has set out in “2. You must provide an ICT solution ...” the things that need to be produced.

Once these stages have been established, then candidates should break down each stage into manageable, achievable sub-steps. At this point, the order in which the stages need to be produced should be considered, as project management relies on not having to wait whilst a prior element is completed. Using Gantt charts (or a simulation) may help candidates to achieve this. A final aspect to consider is the approximate time that each sub-step may take and the resources that need to be allocated to achieve it. Getting the milestones correct is the basis for good project management and this ‘set of criteria’ will have an impact on what will follow. It is likely that milestones will develop as the project proceeds (**only the final version needs to be presented for assessment**).

Advice: high quality achievement subdividing the milestones into manageable steps supported by time and resource management is needed to reach the 7-9 mark range.

- 3.4 **1b Risk:** in this section candidates need to think ahead and judge what risks might affect the overall solution to the problem. Risks can come from the subject content of the specification or from the actual problem itself but they are about the planning/organisation of the problem not about ‘things that might occur whilst it is happening’. An effective way to tackle this is to consider at least three risks (of which one may be the suggestion from the Candidate Booklet in ‘3. Your portfolio’), to explain in detail what may cause the risks to happen and then to propose strategies to deal with each one. Three risks are sufficient for candidates to think about and explain clearly. Then, explain how you will try to prevent each one from happening and the actions you will take if the

risk occurs (eg a strategy to deal with it). The risk does not need to have happened.

Advice: detailed explanation of the risks with an effective strategy for dealing with them is needed to reach the 5-6 mark range.

- 3.5 **1c Progress:** this important section is about managing how the project is progressing. It is likely to need to be checked on regularly (say weekly) to ensure that everything is on course to be completed by the end of the project. If candidates do this using a diary, a blog, or additional column in their milestones table then they are able to adjust the milestone planning to match any 'unplanned' circumstances. Comments on progress may be about the time issues or the resources needed or the scheduling of milestones or any major changes to their planning or any difficulties they overcame or experienced. Candidates must also comment on the status of a milestone (whether it is complete).

Advice: candidates need to have shown that they have effectively managed their progress throughout the project to reach the 5-6 mark range.

- 3.6 **1d Managing storage:** many candidates will already have some of the skills required for this section but it is important that they **demonstrate** that they have them. It is likely that candidates will show images (for example, screenshots, etc) of their evidence to support their explanations. Skills in managing storage and retrieval are about having an effective folder structure, understanding about using relevant filenames and using different versions of the file as they develop their solutions.

Advice: all three storage and retrieval aspects (folders, filenames and versions) need to be explained, supported by screenshots, to reach the 5-6 mark range. Candidates should ensure their screenshots are readable by a third party.

3.7 **Part 2: Independently using ICT**

In this part candidates are going to build a system to provide solutions to their milestones to satisfy the needs of the organiser.

It is important that candidates include the correct work in each section of the portfolio.

There are certain sections of the portfolio where it might appear that candidates may duplicate their efforts. To reduce this possibility, the advice is that:

- the section on '2d Modelling with data' may be tackled at any time, as long as it fits in with the scheduling of the milestones.
- the development of candidates' solutions to be shown in '2e Develop information' should be tackled at an early stage, as the outcomes from it will be used as evidence in sections 2a, 2b, 2c and 2f. Candidates should work out how to solve the problems here and only when finished cut and paste final solutions into other headings (such as Collect information, Select information, Format information and Produce a Report).

- 3.8 **2a Collect information:** final evidence from 2e should be moved into this section. It needs to consist of the chosen method of data capture (with one version filled in), the database table(s) (populated with data) and input form(s), with a display of the data entered. For certain problems, depending on the way in which it is tackled, it may be advantageous to remove redundant data by linking two or more tables.

This evidence is expected to comprise a method of collecting the data needed

- for example, a collection method (eg paper-based Data Capture Form) and a way of entering it in the database.

- for example, database table(s) and database input form(s).

It is important that these linked sections of 'Collect information' are related (*for example, the names used on the Data Capture Form should be the same as the fieldnames used in the database table(s) and input form(s) included*).

It is also important for candidates to show that the data has been gathered by displaying the contents of the database tables. This is the key element of 2a, but it needs to be supported by explaining an alternative method (only one other is required) of collecting information that could have been used.

In addition, and before or whilst entering data to the database, candidates need to review the data collected. This review may take the form of a critical look at the data collected using *for example, the Data Capture Form*, or considering how the fields in the database table/form could be set up to prevent such things from happening - *for example, using validation routines such as presence checks or look-up menus*. A combination of these two methods of 'review' is perfectly acceptable.

Advice: the preferred order is:

- (1) an explanation of alternative methods (at least two),
- (2) the final version of data capture method (plus one filled in)
- (3) the database table(s) and input form(s) (from 2e)
- (4) a review of the information collected.

Once a candidate has set up their collection method and database table structure, the centre may provide additional data (such as names and addresses). An acceptable number of records for any problem will be between 10 and 20. It is then the candidate's responsibility to ensure there is sufficient variety of other data to enable them to make the selections that the organiser requires.

- 3.9 **2b Select information:** final evidence from 2e should be moved into this section. The fitness for purpose and ease of use of the selection system may suggest that a front end (*for example, a switchboard*) could assist the management of this section. The essential aspect in this section is that the correct information needed by the organiser is selected, however the assessment criteria also require an alternative method of selection to be shown and the outputs to be fit for purpose.

The selections shown should cover all that the organiser required to solve the problem. In some instances selecting the information means considering what is needed to inform parents (*for example, the event which is about to happen*).

In other situations, it means selecting the information for the chosen search or sort, which may be linked to a database report (*for example, to make fit for purpose*). Yet other requirements of the organiser mean that a mail merge letter, including specific pieces of information should be sent to parents (*again fitness for purpose may mean it looks like an official school letter*).

There needs to be a consideration of an alternative method of selecting the information to be shown. At a basic level this could be by a candidate choosing a different method of selection to produce another list that the organiser requires. However at the highest level it is expected that candidates will explain an alternative selection method to the one chosen, giving the reason why their choice is preferable.

The requirement for fitness of purpose of outputs allows candidates to produce

professional documents/lists for the organiser's needs (*for example, letters written in the school style and using school letter heads/logos*).

Advice: the preferred order is - an explanation of alternative methods, the final versions of selections made with fit for purpose outputs (from 2e).

- 3.10 **2c Format information:** final evidence from 2e should be moved into this section. There are six formatting techniques that candidates need to show (page layout, text and tables, images, numbers and records/cells). All or almost all should be explained to achieve a mark of 6. Supporting explanations with screenshots of the technique being used are advisable.

Advice: all six techniques may be shown from aspects of the work being developed (for example, the database report of a list needed by the organiser).

- 3.11 **2d Modelling with data:** this is largely a self-standing section of work (although development of it may be used in 2c Format information). It is expected that candidates will select and analyse the data needed to solve the model, then create the formulae/functions needed for the model to operate. Finally candidates should try out relevant 'what if' questions (approximately three are needed) and interpret the results obtained. Interpreting the results will be by commenting on the suitability of the result obtained and considering how it changed as a result of a 'what if' question.

Advice: all areas should be covered for the award of 5-6 marks.

The centre may provide a data sheet (eg the specimen one) to assist the candidate to select and analyse the data needed for modelling.

- 3.12 **2e Develop information:** it is advisable that candidates show the development of work produced to solve the problems set by the organiser. This section is about showing and explaining the skill a candidate has used in developing their solution.

The development work may either be of

the system created to solve the problem

OR

the functional aspects use in creating the system

Showing development of the system: candidates should show an early version of a part of the system with an explanation of how it was produced supported by a later version - the final version will have been moved to 'Select information' (say). The system development could include the data capture method chosen, the database table with field types or validation routines, the databases input form with any buttons added, the searches used, reports created from them, mail merge documents and a front end to the system to make it easy to manage.

OR

Showing the functional development of the system: candidates should show appropriate choice of content, formats and layouts which include 'all or almost all' of the following: header and footer, tables, line spacing, text boxes, bullet points, numbering, alignment, font styles and sizes.

Advice: there should be evidence which includes all or almost all stages of the development of the system. There are reasons to explain choices, to explain what developments or amendments were made and why they were made, which show the level of skill being used.

- 3.13 **2f Produce a report:** which brings together a range of forms of information to suit content and purpose. It should be effectively presented and sufficiently detailed to meet its target audience. The report is written for the Headteacher of the school and may be produced using 'word processing/publishing' or 'presentation' software. Considering what to include and what to leave out is an important aspect of presenting a formal report on the project management solution undertaken.

The report should be separate and comprise a contents page (or navigation method), the receiver, sender and date written. Its purpose should be clear. The sections of the report (which will include a range of information brought together from solutions produced) should meet the requirements that the organiser of the event has set. Each one should be explained so that the reason for its inclusion is clear. Finally the report should incorporate a conclusion and recommendations for the future organisation of such an event.

Advice: the report produced should be fit for the purpose it is intended, which is an account for the Headteacher of how the ICT input has helped the organisation of the 'event'.

- 3.14 **2g Evaluate:** candidates should use their milestones (from section 1a) to evaluate how successfully they have been achieved. To reach discussion criteria, candidates must have described how effectively they have produced their solution to a milestone and compare this with a description of an alternative effective method of solution. This must be achieved in three cases, with an evaluation which makes complete reference to the other milestones.

Advice: the evaluation should be about success with the milestones established at the start of the project – statements of how these were produced achieve 5-6 marks, three descriptions of how effectively these were produced with reasonable reference to the other milestones achieve 7-8 marks and a discussion of them with complete reference to the other milestones achieves 9-10 marks.

- 3.15 **2g Evaluate others' use of ICT:** permits candidates to reflect on how collaboration would have improved the overall solutions achieved in three sections. These Notes indicate that candidates can collaborate on the thinking behind sections of the portfolio (Milestones, Risk and Collect information).

Whether they have collaborated or not this evaluation is about the effects that collaboration can/did have on the solution.

Candidates can verbally discuss ways in which working with others could have made an impact on the solution produced. These ways may include a solution that was more effective; better ordered; quicker to finish; used a larger data set; considered a wider range of risks or strategies to handle them; breaks down milestones into sub-steps or checks on the data needed for '2a Collect information'.

Advice: this evaluation of how collaboration could have made an impact on the solution needs discussion techniques to achieve the highest range of marks (7-9).

4. How and when the problems will be made available by AQA

For each year, AQA will publish electronically (on e-AQA) six problems in the form of Candidate Booklets (45203/CB1 to 45203/CB6). Each candidate must provide an ICT solution to **one** of them. This generic booklet of Teachers' Notes (45203/TN) will also be provided electronically.

You will need to provide each candidate with a copy of the Candidate Booklet². **Hard copy or electronic versions of the Candidate Booklet must not be removed from the school/college premises.**

The problems provided in 20XX are for candidates entering Unit 3 in the following examination series:

- **June 20XX**
- **June 20XX**
- **June 20XX.**

Each problem is provided in a Candidate Booklet in PDF format through the e-AQA³ secure server. Candidate Booklets for subsequent years of the examination will also be made available through the e-AQA secure server, which teachers can gain access to through their Examinations Officer.

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² The Candidate Booklet is available from e-AQA, and hard copies may also be ordered using the order form available on e-AQA or in the Publications section of the AQA website.

³ e-AQA is the secure area of the AQA website. You will need to obtain a login ID and password by either submitting the online form or by asking your Examinations Officer to provide you with one.

5. Levels of Controlled Assessment in Unit 3

Controlled Assessment is a form of internal assessment where the control levels for each stage of the assessment process (Task Setting, Task Taking and Task Marking) have been defined by QCDA and must be met by all Awarding Bodies. The control levels which must be applied to GCSE ICT are:

- **Task Setting: High**
- **Task Taking: Medium**
- **Task Marking: Medium**

For the purposes of this unit, the word 'Task' has been replaced by the word 'Problem'.

What these levels of control mean for both you and your candidates is explained later in these Teachers' Notes under the titles Controlled Assessment Problem Setting, Problem Taking and Marking in Sections 6a, 9 and 10, respectively

6. Controlled Assessment Adviser service available from AQA

Every year each centre will be assigned a Controlled Assessment Adviser who will be available to assist teachers with any centre-specific matters relating to Unit 3. Contact details of your Adviser will be provided when you inform us that you will be teaching the specification.

7. Controlled Assessment for Unit 3

The advice and instruction given includes reference to the Controlled Assessment criteria:

7a Controlled Assessment – problem setting

Each candidate must complete a Portfolio of evidence for Unit 3 based upon his/her chosen problem for the year in which the candidate is to be entered for the examination. Each problem will establish a situation in which ICT must be used to provide a solution. The problems will be similar to those which candidates may meet in education, the community or in the work place.

7b Contextualisation of the AQA problems

A high level of control for problem setting is required by the Ofqual Controlled Assessment criteria. This means that AQA must set the problems for Unit 3. However, centres are permitted to contextualise one or more problems if an element of it needs to be changed to meet the availability of and access to an individual centre's resources.

If an amendment is needed, centres must first contact their Controlled Assessment Adviser **before** candidates start work **as their work may not be acceptable unless the amendment is accepted by AQA**. Centres must provide details as to why it is felt the problem needs to be contextualised. Advice on this matter from the Controlled Assessment Adviser must be obtained in writing and must be submitted together with Unit 3 work when requested for moderation. We reserve the right to reject any proposals which would significantly change the nature of a problem or give undue advantage or disadvantage to a candidate.

8. Making use of the Candidate Booklets

Within a centre, each candidate must choose **one** problem. Teachers may limit the choice of problems made available, but each candidate must have a choice from at least two.

The problems are intended to explore a realistic situation. Candidates are required to 'model' the solution to the problem but are not required to use 'real' data. Each problem should be explored by candidates to 'generate' a solution.

9. Submitting work

Submission of a centre's work may be:

- By traditional paper based methods (see section 9a for details on how to organise it), or
- On CD/DVD (see section 9b for details on how to organise it)

9a Paper-based submission (hard copy)

- Candidates must keep all the work produced for the organiser and the Headteacher in hard copy in a portfolio. It is important that candidates use the headings in section 12 (Milestones, Risk, Progress, etc.) for any work that they want to be marked.
- The hard copy printouts in the portfolio, in the order given in section 12, must have page numbers and be fastened together. Each page should have the candidate's name, number and centre number clearly shown on it.
- Candidates must complete and sign a Candidate Record Form which must be attached to their work.
- The Unit 3 Mark Grid (or printout of the Mark Grid Tool) must be attached to candidates' work.
- Plastic sleeves including several sheets and bulky folders are not acceptable.

9b Electronic submission

Electronic submission

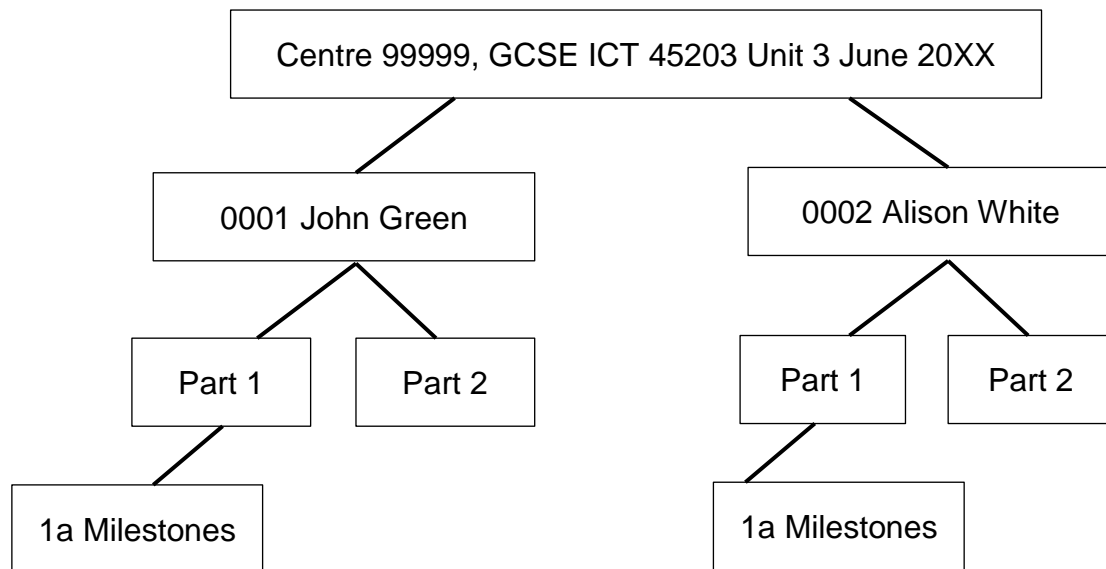
This document outlines the requirements for the electronic submission of candidates' Controlled Assessment work for the new GCSE ICT Specification, for units 45202 and 45203. Centres are not permitted to submit a mixture of electronic and paper based portfolios. Only one form of submission will be accepted across a centre. Likewise, candidates must submit all their work either electronically or by printed submission; a mixed submission will not be accepted.

Centres should note the following important points.

1. CD and DVD Recordable discs will be the **only** acceptable forms of media. Rewriteable discs and memory sticks must not be used.
2. Password protection should not be used.
3. Work should be submitted in .doc or pdf format only. Any images should be inserted into a .doc file. This will allow for ease of review by the moderator, irrespective of the software they have.

4. Signed Candidate Record Forms will be required for all candidates. Centres can choose whether to submit:
 - a. paper copies
 - b. electronic read-only copies
 - c. PDF versions.
5. A signed Centre Declaration Sheet will be required for each centre, in the format of a, b or c above.
6. An electronic version of the mark grid, either in Word or Excel format is recommended for each candidate.
7. Each CD should contain a series of folders, clearly identifiable with the candidate's details. It may contain the work of several candidates.
8. Within each folder, the work provided should be clearly identifiable to the moderator for each candidate and should consist of:
 - a. Unit 2: 1 file for each section – Analysis Task 1, Design Task 1 etc
 - b. Unit 3: clearly named sub-folders – 1a Milestones etc.

The diagram below is an illustration of an expected folder structure for a centre's Unit 2 submission.



9. Each CD should be clearly labelled, with indelible ink/marker pen, with:
 - a. Centre name
 - b. Centre number
 - c. Component code
 - d. Subject level and name.

If it is a CD for an individual candidate then it should also be labelled with:

- e. Candidate name
 - f. Candidate number.
10. The CD should be sent, by 1st class post, to the moderator in a hard plastic case and padded envelope. It is not acceptable for the work to be e-mailed to the moderator.

11. Hyperlinks must not be included in the work.
12. Animation/sound/movie files must not be included in the work.
13. Centres may submit teacher annotation of students work electronically.
14. 2 copies of the CD should be burnt – the master copy should be retained at the centre until the deadline for Enquiries about Results (EAR) has expired. The CD sent to the moderator will not be returned to centres. It is treated as a copy of the original CD, which remains in the possession of the centre.
15. Prior to sending a CD to the moderator, it should be tested to ensure it functions as expected.
16. Centres should check for viruses/malware before sending it to the moderator. The centre will be liable for any failure to do so which leads to any form of virus or malware infecting a moderator's computer.
17. Special note about Analysis for Unit 2: when the analysis has been completed, each candidate's completed analysis must be removed from their individual work area, and stored in a teacher's area, clearly identifiable. This must be done before the standard analysis is issued. Before submission to the moderator, it should be moved to be stored alongside the candidate's other work.

Should you require any further guidance please contact the Subject Team via e-mail at ict-subjects@aqa.org.uk

Further details on the administrative procedures for submission can be found at http://web.aqa.org.uk/admin/p_course.php

9c Centre Declaration Sheet

A fully completed Centre Declaration Sheet must accompany the centre's sample sent to the Moderator.

10. Controlled Assessment – Problem Taking

Controls in relation to taking a problem can be specified in a number of areas as follows.

10a Authentication

- 10.1 It is essential that teachers are able to confirm that the work submitted by each candidate is the candidate's own unaided work. To ensure that this can be done, all work, with the exception of research, must be completed under informal supervision.

Informal supervision means that teachers must ensure that:

- in cases of collaborative work, the contributions of individual candidates are recorded accurately
- plagiarism does not take place
- work can be authenticated as the candidate's own, and
- sources used by candidates are clearly recorded and acknowledged.

- 10.2 In practice, **what does this mean?** Candidates do not need to be under the direct supervision of teaching staff at all times, but it is expected that the majority of work undertaken by the candidate and which is submitted for assessment will be carried out in the classroom (or read 'computer room' throughout). This is so that the teacher is able to state with confidence that the work being submitted by the candidate has not been plagiarised or downloaded from an Internet site.
- 10.3 It may be the case that the candidate needs to complete some work outside the classroom environment (for example, as part of a homework task). This is acceptable provided that the teacher has supervised the candidate in carrying out a significant proportion of this work in the classroom and is happy that the quality of work subsequently submitted is of an identical standard to that seen in the classroom. In short, it is the responsibility of the teacher to be able to authenticate that the work submitted is solely that of the candidate concerned.
- 10.4 There may be instances where candidates wish to word process parts of their work but resources within the centre do not permit a whole class to do this. Provided that the teacher has supervised the candidate whilst they have drafted their work in class, it would be acceptable for this candidate to word process the work outside the classroom environment. The draft version would need to be submitted together with the word processed version and it would be the responsibility of the teacher to authenticate that the work submitted for assessment (word processed version) is in line with the work carried out in class.
- 10.5 It is expected that the vast majority of the work would be carried out within the classroom. On occasion when work is conducted away from the classroom, this must be clearly documented by the teacher on the Candidate Record Form. There may be occasions when circumstances require that some work cannot be carried out in the classroom. For example, a candidate may run out of time in a lesson and wish to finish off some planning work at home. Provided that the teacher has supervised the majority of the work carried out in the classroom, it is permissible for the candidate to take this work home in order to complete the task. The teacher will then, of course, need to inspect the product to ensure that the quality of work carried out at home is consistent with the quality of work seen in the classroom. It is not permissible for a candidate to carry out a significant part of the work outside the classroom as this would not allow the teacher to authenticate this work.
- 10.6 There may also be occasions when a candidate has not completed all aspects of the work, for example, for medical reasons. Where this is the case or, indeed, in any instance where there has been some third party assistance, this must be clearly documented on the Candidate Record Form and, of course, ***the candidate cannot be credited for work that they themselves have not done*** or been involved in producing.
- 10.7 If a teacher has any doubts about the authenticity of work that has been completed at home they may choose to ask the candidate to complete the same work again in the classroom or question the candidate about the content/nature of the work undertaken.

10b Research

- 10.8 Research, which may also include practical research, may be completed under **limited supervision**. This means that, whilst candidates can carry out research at home (using the Internet, etc) any material collected or produced as a consequence will not contribute directly to assessable outcomes. The candidate could gather the necessary research material related to a particular project and then analyse this research under informal supervision conditions. It is this analysis and selection of suitable research material, **completed under informal supervision**, which will count towards the candidate's assessable outcome. For GCSE ICT we are keen to ensure that candidates avoid the temptation to include significant amounts of unnecessary research material and, instead, seek to encourage them to be more focussed in their selection of relevant research.

10c Guidance on data for modelling

- 10.9 Teachers are instructed to provide a list of data that could be suitable for each problem. There should be more data provided (or less data) than is necessary as candidates are required to select the appropriate data for their solution. An example list of data suitable for the specimen Unit 3 problem is available on e-AQA.

10d Feedback to candidates

- 10.10 Candidates are free to revise and redraft a piece of work before submitting the final piece. Teachers can review draft work and provide **generic advice** to the class to ensure that the work is appropriately focussed but, whilst candidates may be guided as to the approach they may wish to adopt, the outcome must remain their own. The advice can be provided in either written or oral form and can be used to evaluate progress to date and propose suggested **broad** areas for improvement. It is **not** permissible, however, to provide advice on **specific** improvements to meet the criteria, give detailed feedback on errors or omissions, or to indicate how **specific** improvements to presentation or content can be made.
- 10.12 A clear distinction must be drawn between providing feedback to candidates as part of work in progress and reviewing work once it has been submitted by the candidate for final assessment.
- 10.13 Once work is submitted for final assessment it may not be revised. Having reviewed a piece of work that has been submitted for final assessment, therefore, it is not acceptable for teachers to give, either to individual candidates or to groups, detailed advice and suggestions as to how the work may be improved in order to meet the marking criteria.
- 10.14 Any support or feedback given to individual candidates **which has not been provided to the class as a whole** must be clearly recorded on the Candidate Record Forms. If necessary, an appropriate adjustment should be made to the candidate's mark.

10e Working with others: opportunities for collaborative work

10.15 Working with others should be encouraged wherever possible in this unit as it is an important life and work skill. The following activities (numbering is from the marking criteria in Section 11, below) specifically offer candidates an opportunity to work collaboratively:

- Part 1a Milestones
- Part 1b Risk
- Part 2a Collect information
- Part 2h Evaluate others' use of ICT.

10.16 Where the opportunity to work collaboratively is taken up, it is essential that candidates **individually document** the work that they have produced. For example, in Part 1a, candidates could verbally discuss the order in which aspects of the problem could be carried out and how long they may take. Candidates must then individually document this to meet the needs of a section of work in the Portfolio.

It is the responsibility of the teacher to ensure that the work of each individual candidate that may have worked as part of a group is their own unaided work and can be assessed as such.

10f Time limits

10.17 It is recommended that candidates should spend approximately 25 hours on their Controlled Assessment task for Unit 3. It is not expected that this time should be monitored or recorded by teachers but candidates should be encouraged not to exceed this approximate time allocation. It is expected that candidates will be selective in their choice of material to include in their Portfolio and will be mindful of the approximate time allocated to the work and manage this time appropriately.

10g Use of resources

10.18 Candidates are permitted to use resources provided by the centre. If there are any candidates who require the use of any special equipment, the Examinations Officer should contact AQA's Exams Office Support for guidance.

Candidates are free to choose whatever tools/emerging technologies are available to successfully fulfill the criteria for this unit.

11. Controlled Assessment – Problem marking

Section 12 onwards shows tables giving:

- the Marking Criteria for Unit 3 (as in the specification)
- information on the evidence to be provided by the candidate to prove achievement (as given in the specification) and exemplification of appropriate evidence
- amplification of the Marking Criteria and
- a summary of the evidence required.

The exemplification of appropriate evidence, the clarification of the marking criteria and the amplification are additional to the information provided in the specification and are not intended to replace the Marking Criteria themselves, but to support them. Teachers may issue any aspect(s) of the tables in section 12, to assist candidates with their chosen task.

11a The Marking Criteria

The number of marks available in the criteria is related to the quality of the evidence (ie the ICT solution) provided by the candidate. No additional marks are given when candidates meet a criterion many times. An Assessment Tool is available from AQA to assist with the marking of this unit. This is the Unit 3 Mark Grid Tool which will facilitate teachers' marking of this unit and is available via e-AQA.

11b Evidence

This may be in the form of printouts, (legible) screenshots or diagrams, all with annotation. Evidence must be presented as hard copy printout or on CD/DVD. In the tables in section 12, suitable evidence is indicated for each criterion, with exemplification as to the possible nature of this evidence. For some criteria the report itself, Part 2f, will provide the necessary evidence. Each candidate must produce his/her own Portfolio.

11c Amplification

This indicates the minimum standard expected for the award of a particular mark. If a candidate's work does not meet the criterion shown for a given mark, then that mark cannot be awarded. *For example: in Part 1b Risk 'anticipate and manage risks', if a candidate has included all, or almost all, risks, but these are not clearly anticipated and managed, then the candidate must not be awarded a mark in the 5-6 range. It is not the quantity which is significant but the quality of the candidate's response.*

11d Summary of evidence required

This summarises the main features which a candidate is required to present in his/her solution.

12. The Marking Criteria for Unit 3

Part 1: Planning and managing the problem:			
Skill to be shown	Quality being assessed	Mark range	Evidence required
1a Milestones Identify milestones with success criteria for evaluating progress and outcomes. Establish practical ways forward, include manageable steps, time and resource management (maximum 9 marks)	Explains the measurable milestones to be used in evaluation and uses these to clearly establish the manageable steps to achieve them, including time and resource management. Uses a form and style of writing entirely appropriate to purpose and content. Organises information clearly and coherently. Effective use of specialist vocabulary.	7-9	<i>All the evidence produced will be printed out in the Portfolio or stored on CD.</i> <i>The evidence will be in the form of a table/paragraphs/bullets/numbered points containing the required information.</i>
	Describes the milestones, which are mostly measurable, to be used in evaluation and uses these to indicate most manageable steps to achieve them, including time and resource management. Uses a form and style of writing mostly appropriate to purpose and content. Mostly organises information. Reasonably good use of specialist vocabulary.	4-6	
	States some milestones, which could be partly used in evaluation and uses the milestones to indicate some steps to achieve them, including partial time or resource(s) needed. Uses a form and style of writing which is only partially appropriate to purpose or content. There is little evidence of organisation of information. Little use of specialist vocabulary but not always successful.	1-3	
	Inappropriate/no milestones presented and there are no steps listed.	0	
Amplification	<p>Milestones evidence must be presented in the Portfolio:</p> <p>7-9 marks = explains 'all or almost all' milestones required for the task in a measurable form (precisely explained methods, resources and completion dates), clearly breaks down each one into smaller manageable steps, which refer to the time to be taken and the resource(s) to be managed. The form and style of writing is entirely appropriate, information is clearly organised and specialist language is used effectively.</p> <p>4-6 marks = describes milestones required for the task in a mostly measurable form (describes methods, resources and completion dates), breaks down most of them into smaller manageable steps which refer to the time to be taken and resource(s) to be managed. The form and style of writing is mostly appropriate; information is mostly organised and specialist language is used reasonably.</p> <p>1-3 marks = states some milestones required for the task in a partially measurable form (states some methods, resources or completion dates), a few are broken down into smaller steps which refer to time to be taken or resource(s) needed. The form and style of writing is partially appropriate, there is little organisation of information and the use of specialist language is not always successful.</p> <p>0 mark = there are no milestones presented or they are inappropriate for the task</p>		
<p>Summary of evidence required</p> <p>List 'measurable' milestones with an explanation of 'what is to happen', what methods and resources are to be used, what the deadlines are and what time needs to be taken to complete them.</p> <p>Candidates should make use of Publishing/word processing software/project management/a blog/electronic diary to build up the milestones. For example, using Publishing software, presenting work in a table, using column headings to help (for example, Milestone, Methods, Resources, Time to take and Completion date). Make sure the milestones are measurable. Break them down into smaller steps.</p> <p>Candidates need to show the Quality of Written Communication (QWC): an appropriate form and style of writing, evidence of organising information and use of specialist vocabulary.</p>			

Skill to be shown	Quality being assessed	Mark range	Evidence required
1b Risk anticipate and manage risks (maximum 6 marks)	Shows clear anticipation by explaining the risks and manages them if they occur. Effective use of specialist vocabulary.	5-6	<i>An explanation of potential risks and how to deal with them. The risks should be presented as a table/ paragraphs/bullet points. Stating how they will be managed and what actions may be needed.</i>
	Shows anticipation by describing most risks and manages them if they occur. Reasonably good use of specialist vocabulary.	3-4	
	Shows some anticipation by stating some risks and manages them if they occur. Little use of specialist vocabulary but not always successful.	1-2	
	There is no anticipation or management of risk in evidence.	0	
Amplification	Risk evidence must be presented in the Portfolio: 5-6 marks = there is clear anticipation of 'all or almost all' risks for the task, with explanation about how to manage them, including a clear explanation of any actions which need to be taken if necessary. Specialist language is used effectively. 3-4 marks = there is reasonable anticipation of most risks for the task, with description about how to manage some of them, including some actions which need to be taken if necessary. Specialist language is used reasonably. 1-2 marks = there is limited anticipation of some risks for the task, with reference to how to manage few of them. The use of specialist language is not always successful. 0 mark = there is no evidence of risk management		
Summary of evidence required Anticipate 'all or almost all' risks possible when undertaking the work. From the Candidate Booklet ensure candidates use, for example, "to avoid the risk that your work will become corrupted, you must keep a back up copy of files so you always have a usable version". Risks are both technical 'things;' that may happen whilst working on the portfolio and issues which may occur because of the nature of the task being undertaken. Candidates need to show QWC: appropriate use of specialist vocabulary.			

Skill to be shown	Quality being assessed	Mark range	Evidence required
1c Progress manage progress and outcomes (maximum 6 marks)	Clearly uses an effective 'checklist' or similar to manage the progress and confirm outcomes. Organises information clearly and coherently. Effective use of specialist vocabulary.	5-6	<i>Evidence of creating a suitable 'check list' or similar and using it to manage practical ways forward from the milestones.</i> <i>Evidence and comments to show that that the 'checklist' has been used, for example, in a blog or diary.</i>
	Uses a reasonable 'checklist' or similar to manage most of the progress and outcomes. Mostly organises information. Reasonably good use of specialist vocabulary.	3-4	
	Uses a simple 'checklist' or similar to manage some of the progress and outcomes. There is little evidence of organisation of information. Little use of specialist vocabulary but not always successful.	1-2	
	There is no progress management or outcome checking	0	
Amplification	<p>Progress evidence must be presented in the Portfolio:</p> <p>5-6 marks = there is evidence of creating an effective 'checklist' or similar to manage 'all or almost all' of the progress and outcomes required (including dates and times), and there is clear confirmation of using the 'checklist' or similar to show progress and the status of outcomes required (for example, whether complete). Information is clearly organised and specialist language is used effectively.</p> <p>3-4 marks = there is evidence of creating a reasonable 'checklist' or similar to manage most of the progress and most of the outcomes required (including some dates and times), and there is reasonable confirmation of using the 'checklist' or similar to mostly show progress and the status of required outcomes (for example, whether complete). Information is mostly organised and specialist language is used reasonably.</p> <p>1-2 marks = there is a 'checklist' or similar which states some progress and outcomes required, including dates, times or whether complete. There is little organisation of information and the use of specialist language is not always successful.</p> <p>0 mark = there is no progress management or outcome checking.</p>		
<p>Summary of evidence required</p> <p>The 'Progress' section must follow the milestones set in section 1a. Candidates could use the same software and add to the file created in 1a. Evidence of creating an effective 'checklist' or similar to manage 'all or almost all' of the progress and outcomes required (including dates and times). There must be clear confirmation of using the 'checklist' to show progress and the 'status' of required outcomes (for example, whether complete). It is important that all progress is documented. Information must be clearly organised to show how effectively it was completed (or not).</p> <p>Candidates need to show QWC: appropriate evidence of organising information and use of specialist vocabulary.</p>			

Skill to be shown	Quality being assessed	Mark range	Evidence required
1d Managing storage manage information storage and retrieval (maximum 6 marks)	Effectively manages and clearly understands the storage and retrieval of information. Effective use of specialist vocabulary.	5-6	<i>Screenshots/printouts of folders, filenames and versions used to store electronic information for the task.</i>
	Reasonably manages and understands the storage and retrieval of most information. Reasonably good use of specialist vocabulary.	3-4	
	Simply manages and understands the storage and retrieval of some information. Little use of specialist vocabulary but not always successful.	1-2	
	There is no management of information storage and retrieval	0	
Amplification	Evidence of storage and retrieval must be presented in the Portfolio: 5-6 marks = there must be an explanation, of the clear use of appropriate filenames and versions of files within appropriately named folder(s) for this unit, to show understanding. Specialist language is used effectively. 3-4 marks = there must be a description, of the use of mostly appropriate filenames and some versions of files within named folder(s) for this unit, to show understanding. Specialist language is used reasonably. 1-2 marks = there are statements, of the use of some different filenames or versions of files in a folder for this unit, to show some understanding. The use of specialist language is not always successful. 0 mark = there is no evidence of managing the storage and retrieval of information for this unit.		
	Summary of evidence required Candidates should present a visual 'picture' with suitable explanations (including screenshots would be perfectly acceptable) of their storage management of files for this unit– for example, explain clearly the use/contents of files (with appropriate filenames and versions) within appropriately named folder(s) for this unit. It is likely that this section will be completed towards the end of the Portfolio work when all/most files have been created. Candidates need to show QWC: appropriate use of specialist vocabulary.		
Part 1 sub-total = 27 marks			

Part 2: Independently using ICT to:			
Skill to be shown	Quality being assessed	Mark range	Evidence required
2a Collect Information consider alternative ways of collecting information, chooses and gathers information and reviews the information collected (maximum 9 marks)	Clearly explains alternative ways of collecting information and effectively chooses and gathers the information required. Clearly reviews the information collected. Effective use of specialist vocabulary.	7-9	<i>Evidence, for example, of a questionnaire/data capture form created, with reasons for choice of "categories" (questions or data required). Evidence of the collection 'form' filled in and checked (only one 'completed' example is required). Evidence of entering the data to a database (eg input form and populated table).</i> <i>A comment on the suitability of the 'completed' questionnaire/data capture form, with any inappropriate ones either rejected or replaced by another with explanation.</i>
	Describes alternative ways of collecting information and reasonably chooses and gathers most of the information required. Reviews the information collected. Reasonably good use of specialist vocabulary.	4-6	
	States alternative ways of collecting information and simply chooses and gathers some of the information required. Reviews some information collected. Little use of specialist vocabulary but not always successful.	1-3	
	No evidence is presented about choosing, gathering and reviewing information required	0	
Amplification	<p>In all cases evidence of information collected must be presented in the Portfolio:</p> <p>7-9 marks = clearly explains alternative ways of collecting information; chooses all or almost all the information needed (with an explanation of why needed), gathers information identified (using appropriate collection method(s) - only one 'completed' example of each type is needed) and reviews, with explanation, its usefulness and accuracy. Specialist language is used effectively.</p> <p>4-6 marks = describes alternative ways of collecting information; chooses most of the information needed (with a description of why needed), gathers most information identified (using reasonable collection method(s) - only one 'completed' example of each type is needed) and reviews, with description, most of its usefulness and accuracy. Specialist language is used reasonably.</p> <p>1-3 marks = states alternative ways of collecting information; chooses some of the information needed (with a statement of why needed), gathers some information (using a collection method - only one 'completed' example is needed) and states its usefulness or accuracy in very few cases. The use of specialist language is not always successful.</p> <p>0 mark = there is no evidence of ways of collecting information, choosing and gathering information, or reviewing information collected.</p>		
<p>Summary of evidence required</p> <p>Candidates should clearly explain alternative (at least 2) ways of collecting information. They should choose 'all or almost all' information needed (with explanation of why it was needed). Candidates should gather identified information using appropriate collection method(s) – data capture form/questionnaire/etc. Candidates only need to include one 'completed' example of each type. Candidates should review, with explanation, the usefulness and accuracy of the information collected.</p> <p>Candidates need to show QWC: appropriate use of specialist vocabulary.</p>			

Skill to be shown	Quality being assessed	Mark range	Evidence required
<p>2b Select information consider alternative ways of selecting information, access, search for, select and use ICT-based information and assess its relevance and fitness for purpose (maximum 9 marks)</p>	<p>Clearly explains alternative ways of selecting information and effectively accesses and searches for ICT-based information needed with a clear explanation of the selection and use of information which is relevant and fit for purpose.</p> <p>Uses a form and style of writing entirely appropriate to purpose and content. Effective use of specialist vocabulary.</p>	7-9	<p><i>Evidence will include: for example, printouts of screenshots to show searches or sorts used (displaying the criteria used) and refining either. Printouts of the results of searches/sorts from a database/spreadsheet.</i></p>
	<p>Describes alternative ways of selecting information and accesses and searches for ICT-based information needed with a description of most of the selection and use of information, which is mostly relevant and fit for purpose.</p> <p>Uses a form and style of writing mostly appropriate to purpose and content. Reasonably good use of specialist vocabulary.</p>	4-6	
	<p>States alternative ways of selecting information and accesses and searches for ICT-based information needed with statements of some selection and use of information, which is partially relevant and fit for purpose.</p> <p>Uses a form and style of writing which is only partially appropriate to purpose or content. Little use of specialist vocabulary but not always successful.</p>	1-3	
	<p>There is no evidence of accessing and searching for information and no statement about why information was selected and used</p>	0	
<p>Amplification</p>	<p>In all cases evidence of information selected must be presented in the Portfolio:</p> <p>7-9 marks = clearly explains alternative ways of selecting information; there is evidence of the data used, printouts of searching/sorting 'all or almost all' ICT-based information needed for the solution, with a clear explanation of why and how it was selected and used to make it relevant and fit for purpose. The form and style of writing is entirely appropriate and specialist language is used effectively.</p> <p>4-6 marks = describes alternative ways of selecting information; there is evidence of all the data used, printouts of searching/sorting most of the ICT-based information needed for the solution, with a description of why and how it was selected and used to make it mostly relevant and fit for purpose. The form and style of writing is mostly appropriate and specialist language is used reasonably.</p> <p>1-3 marks = states alternative ways of selecting information; there is evidence of data used, at least one printout of searching/sorting some ICT-based information needed for the solution, with a statement of why or how it was selected and used to make some of it relevant or fit for purpose. The form and style of writing is partially appropriate and the use of specialist language is not always successful.</p> <p>0 mark = there is no evidence of accessing or searching/sorting ICT-based information or statement about selection and use.</p>		
	<p>Summary of evidence required</p> <p>Candidates should clearly explain alternative ways of selecting information, with evidence of the data used to select it. They should include printouts of searching/sorting 'all or almost all' ICT-based information needed for the solution, with a clear explanation of why and how it was selected and used to make it relevant and fit for purpose.</p> <p>Candidates need to show QWC: an appropriate form and style of writing and use of specialist vocabulary.</p>		

Skill to be shown	Quality being assessed	Mark range	Evidence required
2c Format information enter and format information (including page layout, text and tables, images, numbers and records/cells) to suit its meaning and purpose (maximum 6 marks)	Enters and clearly explains formatting information which suits all or almost all its meaning and purpose. Effective use of specialist vocabulary.	5-6	<i>Evidence will include printouts (for example, screenshots) which show and explain formatting of the documents produced in completing the task.</i>
	Enters and describes formatting information which suits most of its meaning and purpose. Reasonably good use of specialist vocabulary.	3-4	
	Enters and states formatting information which suits some of its meaning and purpose. Little use of specialist vocabulary but not always successful.	1-2	
	Information is formatted inconsistent with its meaning and purpose	0	
Amplification	<p>Evidence of formatting must be presented in the Portfolio. The evidence must include: page layout, text, tables, images, numbers and records/cells to suit its meaning and purpose:</p> <p>5-6 marks = there is explained evidence of the entry and clear formatting of all information (includes all or almost all of the elements listed above) to suit its meaning and purpose. Specialist language is used effectively.</p> <p>3-4 marks = there is described evidence of most of the entry and formatting of information (includes the most of the elements listed above) to suit its meaning and purpose. Specialist language is used reasonably.</p> <p>1-2 marks = there is stated evidence of some of the entry and formatting of information (includes some of the elements listed above) to suit its meaning and purpose. The use of specialist language is not always successful.</p> <p>0 mark = there is no evidence of information being entered and formatted to suit its meaning and purpose.</p>		
<p>Summary of evidence required</p> <p>The evidence presented should be the formatting skills used in the preparation of parts of the Portfolio and Project. Candidates should include evidence of page layout, text, tables, images, numbers and records/cells to suit its meaning and purpose. This should be collected from work produced and explained to show the formatting technique used.</p> <p>Candidates need to show QWC: appropriate use of specialist vocabulary.</p>			

Skill to be shown	Quality being assessed	Mark range	Evidence required
2d Modelling with data Select and analyse data; model different scenarios, try alternatives and explore ideas, ask 'what if' questions to identify patterns or test hypotheses and interpret results (maximum 6 marks)	Appropriately selects and analyses data, effectively models different scenarios and explores alternative ideas. Asks suitable 'what if' questions to identify patterns or test hypotheses and interpret results	5-6	<i>Evidence will include printouts which show and explain modelling with data in a system.</i>
	Selects and analyses most data needed, models different scenarios and explores an alternative idea, asking 'what if' questions to attempt to identify patterns or test a hypothesis and understand results	3-4	
	Selects some data, models at least one different scenario or tries an alternative idea, asking simple 'what if' questions in an attempt to produce results	1-2	
	There is no selection and analysis of data; no modelling of different scenarios or trying alternatives and exploring ideas, no asking 'what if' questions to identify patterns or test hypotheses and no interpreting results	0	
Amplification	<p>Evidence of creating and using a computer model must be present in the Portfolio:</p> <p>5-6 marks = there is clear evidence of creating a computer model. The evidence must include: the selection and analysis of appropriate data to model different scenarios and explore alternative ideas, there must be evidence of asking 'what if' questions in order to identify patterns or test hypotheses and results must be interpreted.</p> <p>3-4 marks = there is evidence of creating a computer model. The evidence must include: the selection and analysis of most data needed to model different scenarios and explore an alternative idea, there must be evidence of asking 'what if' questions in order to attempt to identify patterns or test hypotheses and to understand results.</p> <p>1-2 marks = there is some evidence of creating a computer model. The evidence must include: the selection of some data, there is a model of at least one different scenario or a trial of an alternative idea, there must be evidence of asking a simple 'what if' question in an attempt to produce results.</p> <p>0 mark = there is no modelling with data or trying alternative ideas/scenarios or asking any 'what if' questions to test hypotheses or interpret results.</p>		
	<p>Summary of evidence required</p> <p>Candidates should show clear evidence of creating a computer model using appropriate software, such as a spreadsheet. The evidence must also include:</p> <ul style="list-style-type: none"> • selection and analysis of appropriate data to model different scenarios and explore alternative ideas; • asking relevant 'what if' questions in order to identify patterns or test hypotheses; • interpretation of results. 		

Skill to be shown	Quality being assessed	Mark range	Evidence required
<p>2e Develop information develops, presents and communicates information required for the solution in ways which are fit for purpose (maximum 12 marks)</p>	<p>Clearly develops, presents and communicates, by explaining evidence of the proposed solution(s) in ways which are fit for purpose and clearly show a high level of skill used.</p> <p>Uses a form and style of writing entirely appropriate to purpose and content. Organises information clearly and coherently. Response conveyed in wholly appropriate form and style of writing. Effective use of specialist vocabulary.</p>	11-12	<p><i>The evidence must show a final version and include amendments to previous versions, with reasons/comments to show the level of skill used.</i></p>
	<p>Develops, presents and communicates, by effectively describing most evidence of the proposed solution(s) in ways which are mostly fit for purpose and show a good level of skill used.</p> <p>Uses a form and style of writing almost entirely appropriate to purpose and content. Organises information reasonably. Reasonably good use of specialist vocabulary.</p>	9-10	
	<p>Develops, presents and communicates, by describing some evidence of the proposed solution(s) in ways which are sometimes fit for purpose and show some of the level of skill used.</p> <p>Uses a form and style of writing mostly appropriate to purpose and content. Mostly organises information. Reasonably good use of specialist vocabulary.</p>	6-8	
	<p>Develops, presents and communicates, by stating, limited evidence of the proposed solution(s) in ways which are occasionally fit for purpose and shows a limited level of skill used.</p> <p>Uses a form and style of writing sometimes appropriate to purpose and content. There is some evidence of organisation of information. Limited use of specialist vocabulary when present.</p>	3-5	
	<p>Develops, presents and communicates very limited evidence of the proposed solution(s) in ways which are not fit for purpose and shows a very limited level of skill used.</p> <p>Uses a form and style of writing which is only partially appropriate to purpose or content. There is little evidence of organisation of information. Little use of specialist vocabulary but not always successful.</p>	1-2	
	<p>No development, presentation and communication of solution(s) present</p>	0	

Amplification	(2e Cont.)
	<p>In all cases development evidence must be presented in the Portfolio:</p> <p>11-12 marks = there are all or almost all stages showing amendments to a previous version. There is evidence of appropriate choice of content, formats and layouts which include the following: headers and footers, tables, line spacing, text boxes, bullet points, numbering, alignment, font styles and sizes. There are reasons to explain choices, to explain what amendments were made and why they were made, which show the level of skill being used. The form and style of writing is entirely appropriate, information is clearly organised and specialist language is used effectively.</p> <p>9-10 marks = there are most stages showing amendments to a previous version. There is most evidence of choice of content, formats and layouts which include most of the following: headers and footers, tables, line spacing, text boxes, bullet points, numbering, alignment, font styles and sizes. There are reasons to describe choices, to describe what amendments were made and why they were made, which mostly show the level of skill used. The form and style of writing is almost entirely appropriate, information is reasonably organised and specialist language is mostly used effectively.</p> <p>6-8 marks = there are some stages showing amendments to a previous version. There is some evidence of choice of content, formats and layouts which include some of the following: headers and footers, tables, line spacing, text boxes, bullet points, numbering, alignment, font styles and sizes. There are statements about choices, what amendments were made and why they were made, which sometimes show the level of skill used. The form and style of writing is mostly appropriate, information is mostly organised and specialist language is used reasonably.</p> <p>3-5marks = there are few stages showing amendments to a previous version. There is little evidence of content, formats and layouts which include few of the following: headers and footers, tables, line spacing, text boxes, bullet points, numbering, alignment, font styles and sizes. There are few statements about choices, amendments made or why they were made, which show little of the level of skill used. The form and style of writing is sometimes appropriate, there is some organisation of information and specialist language is sometimes used reasonably.</p> <p>1-2 marks = there are very few stages showing amendments to a previous version. There is very little evidence of content, formats and layouts which include very few of the following: headers and footers, tables, line spacing, text boxes, bullet points, numbering, alignment, font styles and sizes. There are very few statements about choices, what amendments were made or why they were made which show very little of the level of skill used. The form and style of writing is only partially appropriate, there is little organisation of information and the use of specialist language is not always successful.</p> <p>0 mark = there are no earlier stages shown, there is no evidence of any choice of content, formats and layouts shown. There are no statements about amendments.</p>
<p>Summary of evidence required</p> <p>Candidates should show 'all or almost all' stages of their solutions, with amendments to (or developments of) a previous version. This section is about showing and explaining the skill a candidate has used in developing their solution, which should come from earlier versions of sections needed in the Portfolio.</p> <p>Candidates should show appropriate choice of content, formats and layouts which include 'all or almost all' of the following: header and footer, tables, line spacing, text boxes, bullet points, numbering, alignment, font styles and sizes.</p> <p>Candidates should include reasons to explain choices, amendments/developments that were made and why, to show the level of skill being used.</p> <p>Candidates need to show QWC: an appropriate form and style of writing, evidence of organising information and use of specialist vocabulary.</p>	

Skill to be shown	Quality being assessed	Mark range	Evidence required
<p>2f Produce a report produce a report which brings together a range of forms of information to suit content and purpose (maximum 12 marks)</p>	<p>Effectively presents a detailed report required, which appropriately brings together a wide range of different forms of information.</p> <p>Uses text in which accurate spelling, punctuation and grammar make the meaning clear. Uses a form and style of writing entirely appropriate to purpose and content. Effective use of specialist vocabulary.</p>	11-12	<p><i>The report itself may be paper based or interactive (with evidence). The evidence is the printout of a separate report, containing the necessary evidence of the solution to the problem.</i></p>
	<p>Presents a clear report on aspects required, which brings together many different forms of information.</p> <p>Uses text in which almost entirely accurate spelling, punctuation and grammar make the meaning clear. Uses a form and style of writing which is almost entirely appropriate to purpose and content. Reasonably good use of specialist vocabulary.</p>	9-10	
	<p>Presents a reasonable report on aspects required, which brings together some forms of information.</p> <p>Uses text in which mostly accurate spelling, punctuation and grammar make the meaning clear. Uses a form and style of writing mostly appropriate to purpose and content. Few errors in spelling, punctuation and grammar. Reasonably good use of specialist vocabulary.</p>	6-8	
	<p>Presents a limited report on aspects required, which brings together few forms of information.</p> <p>Uses text in which limited spelling, punctuation and grammar make some of the meaning clear. Uses a form and style of writing sometimes appropriate to purpose and content. Limited use of specialist vocabulary when present.</p>	3-5	
	<p>Presents a very limited report on aspects required, which brings together very few forms of information.</p> <p>Uses basic spelling, punctuation and grammar. Uses a form and style of writing which is only partially appropriate to purpose or content. Little use of specialist vocabulary but not always successful.</p>	1-2	
	<p>No report is produced</p>	0	

Amplification

The **Report** must be presented as a separate document in the Portfolio. The report may be prepared using a combination of interactive presentation, publishing software, spreadsheet or database:

11-12 marks = there is an effectively presented and detailed report required, which includes reasons for and explanations of the solution, with conclusions and recommendations. The report brings together a wide range of different forms of information. All the report is accurately spelt, punctuated and grammatically correct to make the meaning clear. The form and style of writing is appropriate and specialist language is used effectively.

9-10 marks = there is a clear report on aspects required, which includes most of the reasons for and most of the descriptions of the solution with some conclusions and recommendations. The report brings together many different forms of information. Almost all the report is accurately spelt, punctuated and grammatically correct to make the meaning clear. The form and style of writing is almost entirely appropriate and specialist language is mostly used effectively.

(2f Cont.)	
Amplification	<p>6-8 marks = there is a reasonable report on aspects required, which includes some of the reasons for and some of the descriptions of the solution with few conclusions or recommendations. The report brings together some forms of information. Most of the report is accurately spelt, punctuated and grammatically correct to make most of the meaning clear. The form and style of writing is mostly appropriate and specialist language is used reasonably.</p> <p>3-5 marks = there is a limited report on aspects required, which includes few reasons for or statements of the solution. The report brings together few forms of information. There is limited use in the report of accurate spelling, punctuation and grammar to make some of the meaning clear. The form and style of writing is sometimes appropriate and specialist language is sometimes used reasonably.</p> <p>1-2 marks = there is a very limited report on very few aspects required, which includes very few reasons for or statements of the solution. The report brings together very few forms of information. There is only basic use of spelling, punctuation and grammar. The form and style of writing is only partially appropriate and the use of specialist language is not always successful.</p> <p>0 mark = there is no report produced</p>
<p>Summary of evidence required</p> <p>The Report must be presented as a separate document in the Portfolio. It may be either paper-based or electronic. The report may be prepared using a combination of interactive presentation, publishing software, spreadsheet or database.</p> <p>Candidates should present an effective and detailed report. The report should include reasons for and explanations of the solution with conclusions and recommendations.</p> <p>The report should bring together a wide range of different forms of information collected from the Portfolio.</p> <p>Candidates need to show QWC: accurate use of spelling, punctuation and grammar, an appropriate form and style of writing and use of specialist vocabulary.</p>	

Skill to be shown	Quality being assessed	Mark range	Evidence required
<p>2g Evaluate evaluate the solution against the milestones set (maximum 10 marks)</p>	<p>Evaluates by clearly discussing the effectiveness of the solution and makes complete reference to the milestones set.</p> <p>Uses text in which accurate spelling, punctuation and grammar make the meaning clear. Uses a form and style of writing entirely appropriate to purpose and content. Effective use of specialist vocabulary.</p>	9-10	<p><i>The evidence is a printed evaluation (using the milestones to evaluate) to show how effectively the solution has met the milestones set.</i></p>
	<p>Evaluates by describing the effectiveness of the solution and makes reasonable reference to the milestones set.</p> <p>Uses text in which almost entirely accurate spelling, punctuation and grammar make the meaning clear. Uses a form and style of writing which is almost entirely appropriate to purpose and content. For the most part specialist vocabulary is used effectively.</p>	7-8	
	<p>Evaluates by making some reference to the milestones set in stating how the solution was produced.</p> <p>Uses text in which mostly accurate spelling, punctuation and grammar make most of the meaning clear. Uses a form and style of writing mostly appropriate to purpose and content. Reasonably good use of specialist vocabulary.</p>	5-6	
	<p>Evaluates in a limited way by making limited reference to the milestones set in stating that a solution has been produced.</p> <p>Uses text in which limited spelling, punctuation and grammar make some of the meaning clear. Uses a form and style of writing sometimes appropriate to purpose and content. Limited use of specialist vocabulary when present.</p>	3-4	
	<p>Lists the methods used.</p> <p>Uses basic spelling, punctuation and grammar. Uses a form and style of writing which is only partially appropriate to purpose or content. Little use of specialist vocabulary but not always successful.</p>	1-2	
	<p>There is no statement of how the solution meets the milestones set</p>	0	

Amplification	<p>Evaluation must be presented in the Portfolio:</p> <p>9-10 marks = discusses in some cases how effectively the solution has been produced against the milestones set, by comparing with an alternative method, and makes complete reference to the milestones. The evaluation is accurately spelt, punctuated and grammatically correct to make the meaning clear. The form and style of writing is entirely appropriate and specialist language is used effectively.</p> <p>7-8 marks = describes in some cases how effectively the solution has been produced against the milestones set and makes reasonable reference to the milestones. Almost all the evaluation is accurately spelt, punctuated, and grammatically correct to make the meaning clear. The form and style of writing is almost entirely appropriate and specialist language is mostly used effectively.</p> <p>5-6 marks = makes some reference to the milestones set by stating how most of the solution has been produced. Most of the evaluation is accurately spelt, punctuated and grammatically correct to make most of the meaning clear. The form and style of writing is mostly appropriate and specialist language is used reasonably.</p> <p>3-4 marks = makes limited reference to the milestones set by stating that some of a solution has been produced. There is limited use in the evaluation of accurate spelling, punctuation and grammar to make some of the meaning clear. The form and style of writing is sometimes appropriate and specialist language is sometimes used reasonably.</p> <p>1-2 marks = there are few statements about the methods used. There is only basic use of spelling, punctuation and grammar. The form and style of writing is only partially appropriate and the use of specialist language is not always successful.</p> <p>0 mark = there is no statement about the solution meeting the milestones set</p>
<p>Summary of evidence required</p> <p>Candidates use their own milestones.</p> <p>They discuss, in some cases, how effectively the solution has been produced against the milestones set, by comparing with an alternative method, and make reference to all the milestones.</p> <p>Candidates need to show QWC: accurate use of spelling, punctuation and grammar, an appropriate form and style of writing and use of specialist vocabulary.</p>	

Skill to be shown	Quality being assessed	Mark range	Evidence required
<p>2h Evaluate others' use of ICT</p> <p>evaluate ways to improve the solution by working with others</p> <p>(maximum 9 marks)</p>	<p>Discusses ways to effectively improve the solution by working with others.</p> <p>Uses text in which accurate Spelling, Punctuation and Grammar make the meaning clear. Effective use of specialist vocabulary.</p>	7-9	<p><i>Candidates must print out an explanation of how working with others could have been used (or was used, in cases where candidates have collaborated) to produce an even more effective solution.</i></p>
	<p>Describes ways to reasonably improve the solution by working with others.</p> <p>Uses text in which mostly accurate Spelling, Punctuation and Grammar make most of the meaning clear. Reasonably good use of specialist vocabulary.</p>	4-6	
	<p>States way(s) to improve the solution by working with others.</p> <p>Uses basic Spelling, Punctuation and Grammar. Little use of specialist vocabulary but not always successful.</p>	1-3	
	<p>Fails to identify a way to improve the solution by working with others</p>	0	
Amplification	<p>Evaluate others' use of ICT must be presented in the Portfolio as a separate section:</p>		
	<p>7-9 marks = there are discussions of ways in which working with others could have made an impact on the solution produced. The evaluation is accurately spelt, punctuated and grammatically correct to make the meaning clear. Specialist language is used effectively.</p>		
	<p>4-6 marks = there are descriptions of ways in which working with others could have reasonably improved the solution produced. Most of the evaluation is accurately spelt, punctuated and grammatically correct to make most of the meaning clear. Specialist language is used reasonably.</p>		
	<p>1-3 marks = there are statement(s) about how working with others could have affected the solution produced. There is only basic use of spelling, punctuation and grammar. Specialist language is not always successfully used</p>		
<p>0 mark = there is no identification of ways working with others could improve the solution produced</p>			
<p>Summary of evidence required</p> <p>Candidates discuss ways in which working with others could have made an impact on the solution produced. The ways may include a solution that was more effective, quicker to finish, used a larger data set, considered a wider range of risks or milestones.</p> <p>Candidates need to show QWC: accurate use of spelling, punctuation and grammar and appropriate use of specialist vocabulary.</p>			
<p>Part 2 sub-total = 73 marks</p>			
<p>Total = 100 marks</p>			

13. Appendix

This section includes the key aspects of a problem from section 2 of the Specimen Candidate Booklet

Problem 1: Help to organise a school sports day

- **model** the cost of running the sports day.
 You will need to gather information in order to do this (*for example, 'the cost of hiring seating for the event', 'the price of admission for adults', etc*).
 You will need to create the model and use it to try out various scenarios to keep the costs within a certain amount
- **gather** information about students who are planning to go on the visit.
 The organiser will need to know:
 - their personal and contact details
 - what events they are competing in (*for example, 'Year 7 girls 100m', etc*)
 - which year group they are in
 - which school house they are in (*for example, 'Shakespeare', etc*) and
 - details about their parents/guardians (*for example, 'address', etc*).
 You will have to find a way of **collecting, inputting** and **storing** this information
- **contact** parents/guardians to inform them of **specific details** about the sports day (*for example, 'when it will take place'*), so that they are aware of what is going to happen
- **record** which students have **handed in a consent form** for sports day by the deadline date.
 Produce a list of students who have **not handed in a consent form**, with the event(s) they are competing in, by the deadline date.
 If any student has not handed in a consent form by this date, the organiser must be able to remind their parent/guardian individually of the **event(s) they competing in** and that the form has to be handed in immediately
- **generate lists** to use both before and during the visit:
 - firstly of students who are competing in a **specific event** at sports day (no more than 2 lists are required).
 - and then a list of students in a **specific house** and **specific year group** showing the event(s) they are competing in