

Centre Number						Candidate Number				
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Other Names										
Candidate Signature										



General Certificate of Secondary Education
June 20XX

Information and Communication Technology

45203/CB

Unit 3 Practical Problem Solving in ICT

Specimen Candidate Booklet

Problem 1S: Help to organise a school sports day

Instructions

- It is recommended that you take 25 hours to solve this problem.
- Before starting work on the problem, read the whole of this Candidate Booklet thoroughly. You can ask your teacher to explain anything in this booklet, except ICT- specific terms, that you do not understand.
- There are restrictions on when and where you can work on this problem. Your teacher will explain them to you. For example, you should only do work that you intend to hand in for marking when a teacher is present, so that he or she can confirm that the work is your own. The Candidate Booklet must **not** be taken outside your school/college.
- You may need to use the Internet to research certain parts of the problem. This does not have to be within the 25 hours recommended time.
- You will need to complete and sign a Candidate Record Form which your teacher will provide.

Information

You will also be marked on your use of English. It is important to:

- make sure that all your work is legible
- use correct spelling, punctuation and grammar
- use a style of writing which suits the person you are writing for
- organise your information clearly, so that you make yourself understood
- use ICT terms where they are needed.

45203/CB

Problem 1S: Help to organise a school sports day

Your school plans to organise a sports day for students. You are going to produce a solution to the problem but you can make up the data that you need. Your teacher will have advised you about this before you start.

1. Overview of the problem

You must help the organiser of the event by producing a practical ICT solution which will improve the arrangements.

The solution should be a **system** which is both easy to use and fit for this purpose.

Your Portfolio of this solution will contain several parts (see pages 4-6 'What your teacher will be looking for ...').

Also, in a report to the Headteacher of the school, you must explain what you have produced.

2. You must provide an ICT solution that will help the organiser to:

- **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 overall cost within a certain amount.

- **gather** information about students who will be involved in the sports day.

The organiser will need to know:

 - their personal and contact details
 - what events they are competing in (*for example, 'Year 7 girls 100 m', etc*)
 - which year group they are in
 - which school house they are in (*for example, 'Shakespeare house', etc*) and
 - details about their parents/guardians (*for example, 'address, telephone number', 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 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 event:
 - firstly of students who are competing in a **specific event** at sports day
 - and then of students in a **specific house** and **specific year group** showing the event(s) they are competing in.

Your teacher will provide you with some background information about school sports day. You should attempt to create a system which shows your highest level of skill in producing solutions to each problem that the organiser has.

In addition...

The Headteacher of your school wants you to **produce a report** that provides key facts about how your ICT solution has helped to organise the sports day. Think carefully about what the Headteacher might need to know and how it should be presented. The report should be **formal** and also make it easy to find things. It should be clear and sufficiently detailed to meet the needs of the Headteacher. The report can either be paper based or electronic (for example, an electronic report might be prepared using a presentation program with supporting notes). The report must include the results that you have produced to help the organiser of the event, with an explanation of why they are included.

3. Your Portfolio

Remember that you are looking to provide ICT solutions for the needs of the organiser and a report for the Headteacher.

Plan what you are going to do to help the organiser. Plan when it will need to be completed in order to meet a date provided by your teacher.

- Avoid taking any unnecessary **risks** when working with ICT and provide evidence of what you did to avoid risks.
For example, to avoid the risk that you overlook some data needed for the solution, you must carefully check all the information that the organiser needs for the solution so your collection method includes it.
- **Manage** and keep track of your **progress** by recording what happened, for example, using a 'checklist', in a blog, a diary, or something similar.

Work independently to:

- ensure that you know what information will be needed and how to **collect** it
- ensure that you know how to **select** the information that the organiser requires
- ensure that the ICT solutions you provide are fit for purpose, will meet the **needs** of the **organiser** and do the job intended
- **develop** your solutions to the problems set
- explain how you **formatted** work to be fit for purpose.

Evaluate the success of your ICT solutions against your milestones and evaluate the way in which other people have (or could have) contributed to parts of your Portfolio.

4. Software tools and techniques are needed for:

- planning, recording, keeping track of and evaluating your work
- creating a method to collect information
- storing and managing the information collected
- producing any necessary lists and documents
- modelling with data
- making the report for the Headteacher
- selecting and combining the information in the report.

You are free to use whatever software tools and techniques are available to you.

5. What your teacher will be looking for and how to provide that evidence for your Portfolio

Your work, including screenshots, in every section of the Portfolio should be clearly readable. In preparing you for this unit of work, your teacher will have provided you with more information about the section headings below.

Part 1

Part 1: Planning and managing the problem

SECTION HEADINGS	WHAT YOU MUST DO
1a Milestones - (maximum 9 marks)	<ul style="list-style-type: none"> Establish the milestones which are needed to solve the problem set by the organiser. The milestones are a plan of what you think is needed to solve this problem. Your plan should show the stages required by the organiser. Show and explain how you will break down each milestone into manageable steps. Include an estimate of the time they might take to complete, the resources needed to produce them and show the order in which each will need to be undertaken. Milestones are not the headings in your Portfolio.
1b Risk - (maximum 6 marks)	<ul style="list-style-type: none"> Show clear anticipation by explaining some of the risks (at least three are required) you think may occur while producing or using your solution. Manage each risk by explaining clearly how you will try to prevent it and the actions you will take if it occurs. The risk does not need to have happened. You may use the risk outlined on page 3 'Your Portfolio' as one of your risks.
1c Progress - (maximum 6 marks)	<ul style="list-style-type: none"> Show clearly how you manage to effectively keep track of your progress as you move towards finding a solution. You will need to use your milestones to do this by confirming their completion and explaining any difficulties you overcame or experienced. You may use a copy of your milestones on which to base your progress check. This section and '1a Milestones' should be two separate documents.
1d Managing storage - (maximum 6 marks)	<ul style="list-style-type: none"> Show how you effectively manage the storage and retrieval of information in all sections, including the ones in Part 2 below. Show and explain how you have created suitable folders to store your files, with appropriate filenames for them and versions of these files where needed for retrieval. It is likely that you will start planning the folders required early in your work but only complete the other explanations toward the end of it. You should use images to support your explanations.

NB aspects of your work in Part 1 will continue as your solution is developed. For example, you will need to keep track of your progress on a regular basis.

Part 2

It is recommended that you show the **creation of your system** (for example, a collection method, a database table, etc) under the heading '2e Develop information' (see the next page). You may use evidence from this heading, by cutting and pasting it, to support your work in other headings (such as '2a Collect information' or '2b Select information', etc).

Where 'alternative ways' are asked for, you should include **at least two** including the one you will use.

Part 2: Independently using ICT	
SECTION HEADINGS	WHAT YOU MUST DO
2a Collect information - (maximum 9 marks)	<ul style="list-style-type: none"> Decide what information about students and parents/guardians the organiser will need in order to manage the team practices. Consider and clearly explain alternative ways in which this information can be collected. Collect and clearly review this information. In this section, you should show you have gathered the information in any database (fully populated with data) that you create to store the data collected with a method of database entry.
2b Select information - (maximum 9 marks)	<p>Consider, where possible, and explain alternative ways of selecting information when carrying out the tasks below. The results produced should be relevant and fit for the purpose intended.</p> <ol style="list-style-type: none"> Decide what information about sports day the organiser will need to tell parents/guardians in advance of the event. Provide parents/guardians with this information in a suitable format. Select students who have not handed in a consent form by the deadline date. Produce a list of these students, with the event(s) they are competing in. Inform individual parents/guardians of these students what event(s) they are competing in and that they need to complete and return the consent form immediately. Produce lists of students who are competing in specific events at sports day (lists of two different events should be shown). Produce a list of students who are in a specific house and specific year group showing the event(s) they are competing in.
2c Format information - (maximum 6 marks)	<ul style="list-style-type: none"> Show how you formatted page layout, text, tables, images, numbers and records/cells. Clearly explain, including images, why the formatting of information that you used for evidence in sections 2a, 2b, 2d and 2f is suitable.
2d Modelling with data - (maximum 6 marks) This may be tackled at any appropriate time in Part 2.	<ul style="list-style-type: none"> Select and analyse the different costs and receipts to the school of running the sports day. Use these costs to produce a model to calculate the overall cost of the sports day. Show the formulae/functions that you have used. Use the model to investigate at least three ways by which the organiser can keep the overall cost within a specific amount. Interpret the results you obtain.

'Develop information' could be a suitable place to start your Part 2 Portfolio work.

Part 2: Independently using ICT (continued)	
SECTION HEADINGS	WHAT YOU MUST DO
2e Develop information - (maximum 12 marks)	<ul style="list-style-type: none"> • Explain how you developed your system solution to the problem. For example, include earlier versions of your solution, with explanations of how you produced them, to show the level of skill you have used. Include a later version to show what was achieved. • You should attempt to show the highest level of skill that you have used in developing your system solution. • You should use evidence of your final outcomes to support your work in sections 2a, 2b, 2c and 2f.
2f Produce a report - (maximum 12 marks)	<ul style="list-style-type: none"> • Produce an effectively presented and sufficiently detailed report for the Headteacher. • The report should be formal - describing its purpose and containing the receiver's role, sender's name and date produced. • At the end of the report, present a conclusion and recommendations for future sports day organisation. • The report should bring together all the results which are needed by the organiser. Make sure that you explain the reason why you have included each result. • You may use word processing/DTP or presentation software to produce the report. Reports produced with word processing/DTP software should contain a contents page, whereas those produced with presentation software should have an efficient way of navigating through the slides.
2g Evaluate my own work - (maximum 10 marks)	<ul style="list-style-type: none"> • Evaluate how effectively your solutions have met the milestones you set. • Discuss or describe the effectiveness (in at least three cases) of parts of your solution by commenting on how well you actually produced them compared with an effective alternative method of solution. • Make reference to all the milestones you set.
2h Evaluate others' use of ICT - (maximum 9 marks)	<ul style="list-style-type: none"> • Discuss or describe the ways that working with others might have made an impact on your ICT solution. Consider how this might have improved the processes of producing your solutions. • It is recommended that you use these headings from your Portfolio for this purpose: <ul style="list-style-type: none"> – Milestones – Risks – Collect information. • NB if you did any collaborative planning under these headings, this section could be used to comment on how it helped.

6. Organising a Portfolio of work

Your Portfolio is where you keep the evidence that you have produced.

You should imagine that the Portfolio is to be used by another person who is interested in how you produced your solution. It is to help them to do something similar. It is important that you organise work for the Portfolio as shown below.

- You must keep all the work you produce for the organiser and the Headteacher in hard copy in a Portfolio (or save your work electronically in folders which you will later copy onto a CD or DVD). Your teacher will have instructed you what to do.
- For any work that you want to be marked by your teacher, it is important that you use the headings (Milestones, etc) in the tables on pages 4 to 6, 'What your teacher will be looking for ...'
- If you are putting hard copy printouts in your Portfolio, put the work in the order given in the tables on pages 4 to 6 'What your teacher will be looking for ...'. Make sure that you number each page and fasten it all together. Take your work out of any plastic sleeves before you hand it in to your teacher for marking.
- Each page should have your name, centre number and candidate number clearly shown on it.
- When you have completed Unit 3, if you are putting your work on a CD or DVD, put the work for each heading in a separate folder. Each folder must be clearly named (*for example, 'Milestones', 'Risk', etc*). Inside each folder the work must have a filename (*for example, 'Final milestones', 'Risk version 3' etc*) which should be a final version for each heading. The CD or DVD should have your name, centre number and candidate number clearly shown on it. Your teacher will have advised you what to do.