GCSE EXAMINERS' REPORTS

INFORMATION AND COMMUNICATION TECHNOLOGY

SUMMER 2012

Statistical Information

The Examiner's Report may refer in general terms to statistical outcomes. Statistical information on candidates' performances in all examination components (whether internally or externally assessed) is provided when results are issued.

Annual Statistical Report

The annual Statistical Report (issued in the second half of the Autumn Term) gives overall outcomes of all examinations administered by WJEC.

INFORMATION & COMMUNICATION TECHNOLOGY

General Certificate of Secondary Education

Summer 2012

Chair of Examiners: Dr. Gwynne Jones

Chief Examiner: Mr. Warren Davies

Principal Moderator: Mrs. Noreen Kay

Unit Statistics

The following statistics include all candidates entered for the unit, whether or not they *cashed in* for an award. The attention of centres is drawn to the fact that the statistics listed should be viewed strictly within the context of this unit and that differences will undoubtedly occur between one year and the next and also between subjects in the same year.

GCSE											
				Grade Boundary							
Unit	Entry	Max Mark	Mean Mark	A*	A	B	C	D	E	F	G
Unit 1	**11572**	**80**	**49.0**	**68**	**65**	**59**	**53**	**45**	**37**	**30**	**23**
Unit 2	**12388**	**80**	**58.7**	**72**	**67**	**59**	**51**	**43**	**35**	**28**	**21**
Unit 3	**6767**	**80**	**44.8**	**59**	**55**	**48**	**41**	**37**	**33**	**30**	**27**
Unit 4	**6906**	**80**	**57.3**	**72**	**65**	**53**	**42**	**39**	**36**	**33**	**30**

N.B. The marks given above are raw marks and not uniform marks.

UNIT 1 - Understanding ICT

Examination

General Comment

Although there was only one tier the majority of candidates attempted most of the questions. The paper was deemed to be more accessible than the Summer 2011 examination paper.

Q.1   (a)   Well answered by all candidates.

      (b)   Most candidates knew that a spell checker was a feature used to detect a spelling mistake.

Q.2   Very well answered.

Q.3   (a)   Very well answered. Most candidates were aware of the features of email.

      (b)   Poorly answered. A number of candidates confused bcc with cc.

      (c)   Computer viruses, spam, phishing and hacking were common problems associated with email.

Q.4   Although this type of question has caused problems to candidates in the past. It was encouraging that many candidates answered all sections correctly.

Q.5   (a)   Very well answered.

      (b)   (ii)   To make each record unique was a common answer.

      (c)   A number of candidates gained full marks by indicating that typing one letter rather than typing the whole word gives less likelihood of making a mistake.

      (d)   Quite well answered.

      (e)   Very well answered.

      (f)   Faster to update and faster to search were typical answers which gained marks.

Q.6   Quite well answered.

Q.7   (a)   Poorly answered. Most of the answers seen were not realistic in a school environment.

      (b)   Quite well answered.

Q.8   (a)   Well answered.

      (b)   Quite well answered.

      (c)   Most candidates gave B4-F4

      (d)   Well answered

Q.8   (e)   Not many candidates mentioned accurate calculations or automatic recalculations which would have gained them marks.

Q.9   (a)   Poorly answered.

       (b)   Braille keyboard and microphone were common answers.

Q.10   (a)   Poorly answered.

       (b)   Again candidates lost marks by giving vague answers.

Q.11   Some excellent answers given and many candidates managed to achieve at least half marks.

Controlled Task

General Comments

Centres submitted candidates work electronically or on paper. Most centres evidenced a good understanding of the requirements of the controlled test and most assessed fairly accurately.

Many centres completed the official banded mark form from the WJEC but this gave no indication of where the Centre had actually awarded the marks. Centres are requested to indicate where marks have been awarded using the one sheet marking grid provided by the WJEC or the Centre's own version of it. Comments or annotation to indicate which features have been credited would aid the moderation process.

Screenshots, where used, should be printed at a scale which is readable and not reduced to a very small size. Candidate submissions must provide evidence for all marks awarded by assessors. Witness statements saying they did it are not sufficient and can not be accepted as evidence.

The following comments may help with future submissions.

File Handling
Organisation and presentation of the folder and subfolder structure was much improved but there are still some candidates who mix folders and files up so they should not be given the organisation marks. Most provided good evidence but candidates should show the process of backing up onto an external device.

Research and Data Collection
Evidence here could be improved.
For full marks in searching the Internet, a minimum of three screenshots of searches and their results are required:
- one keyword search using a search engine
- a second keyword search for a different purpose using a search engine
- one url search showing the keyword search box empty and typing the url address directly into the address bar.

Candidates tended not to show the whole process but only the end result and hence marks could not be supported.

Email
Some of the screenshots were barely decipherable. Candidates must produce evidence of emailing as witness statements saying they completed this task are unacceptable. The mark for using a contacts list is not for selecting a contact - it is for using a contacts list to add AND amend AND delete entries. All three must be evidenced.

Communicating Information

Most candidates produced drafts and final documents although sometimes it was difficult to know which was which as there seemed to be very little difference between them. Unconstructive and general comments for improvements should not be credited as they did nothing to improve and add value to the documents.

Some documents contained a number of spelling and grammar errors whilst others included information and pictures which were not fit for the controlled test purpose and yet marks were awarded freely for accuracy, plausibility and fitness for purpose.

As last year most of the basic features could be seen in candidate work but only features used in the final documents should be credited. Where marks are awarded for Inserting, cropping or resizing and positioning an image fit for purpose a before and after screenshot is needed to support it. If work is submitted on paper, evidence for the sequence of a set of events on a web page or in a presentation needs a screenshot showing the selected custom animation.

Evidence for use of advanced features was generally clear but it is still worth noting a few points:
- some centres claimed original animations or sound as use of a second different source of data but did not provide supporting evidence
- if headers or footers are used they must appear on the final document
- if page numbering on more than one page or slide is awarded this must seen on the final document

Assessment of the review task (Task 6), needs to be improved in many centres. Candidate comments about how to improve their work were again very weak and general rather than specific. Comments such as, "add more writing", "put in more pictures", "add colour" and "add bullet points" were typical. Some centres seemed to adopt a system where if candidates wrote anything, no matter how brief and unconstructive, marks were awarded. Non specific comments should **not** be credited. This is an area which needs to be improved with more in depth comments and 'real' suggestions for improvements. The marks for this formative evaluation are key discriminators and should not be awarded lightly.

Modelling

The 2012 topic allowed for more variations in the design of the spreadsheet and this was generally well done. However, when submitting on paper, candidates MUST screenshot or print out their spreadsheets in formula view to provide evidence so that any formula marks or relative referencing marks can be awarded. Candidates should explain how their formulas produce the required totals and these statements must relate to their own model and not be generic. For example, "I used a sum formula which adds up a range a numbers", should not be given any credit. A fuller explanation is required, such as, "I used =SUM(D2:F2) which added up all of the points gained for attendance, correct equipment, and scoring goals in order to give me the total points each player has gained."

This 'what if' task is not an editing exercise, it is a set of investigations. What if investigations should be carried out for a specific, useful purpose and candidates need **to have a reason** for undertaking them **plus a conclusion as to their effect**. It is not acceptable to write, "I am going to change the price", without a reason and a discussion about the knock on effect. If candidates do not understand why they are investigating the change of data or formula they obviously cannot come to any conclusion about the results of their investigations.

It was often left to moderators to detect use of advanced features. Candidates or centres should annotate their work or provide evidence to show what they have done.

Data Handling

This was generally well done. Basic features were generally accurately marked but some centres submitting electronically submitted portfolios gave the deletion mark when the record was still shown in the database.

The controlled assignment set by WJEC contains specific tasks and candidates must do the sorts and searches as stated in the assignment. Some candidates did their own versions and were awarded marks by assessors. Candidates can **not** be awarded marks for work which is not required by the set tasks.

When evidencing use of advanced features candidates need to provide a specific, useful purpose for:
- use logical operators and at least one wild card/parameter search
- sorting on multiple fields.

To gain the mark they should give reasons why the data produced as a result of these operations is needed. If there is no valid purpose for the search or sort then no marks should be given. Please note that to count as an advanced feature the sort on multiple fields must not be a single sort on a single field.

Evaluation

Some centres seemed confused by the split between formative evaluation in the review task and the final summative review. Eight marks for the former should be added to the seven for the latter on the evaluation section of the banded Unit 2 mark sheet.

Many candidates do not seem to understand that an evaluation is not a narrative description of what they included in their work. Evaluation is a critical consideration of what has added value to their solution, what detracts or is poor about what they produced and includes concrete suggestions for improving their work. In their summative evaluation candidates are expected to write a critical evaluation on each of the following:
- **analysis** of data and information used in modelling (Data, formulas, graphs)
- **analysis** of data and information used in data handling (Keyfield, extra fields, data validation)
- Concrete suggestions for improvements (modelling and data handling)
- evaluation of other tools and techniques (all tasks: Final choice of DTP features, investigations, sorts, searches, etc)
- **review** of feedback (a statement responding to feedback received)
- **analysis** of research methods, data collected, data used (Internet, paper sources, email)
- **evaluation** of working practice (data protection, security, health and safety).

This was assessed very generously by a large number of centres. Candidates were often credited where they had just made one brief comment on each.

UNIT 3 – ICT in Organisations

Examination

General Comment

Many of the candidates found the paper accessible. Candidates' responses were noticeably better for the more traditional topics associated to the legacy specification and were less confident answering questions on the new content in this specification; in particular *animation techniques* and *website terms*.

Comments on individual questions

Q.1 (a) This question was well answered with most candidates being able to differentiate between input and output devices.

(b) This question was generally well answered. Most candidates were able to define what is meant by the term Multimedia, giving suitable example combinations such as Sound & Video etc.

(c) This question was very well answered and candidates had a good understanding of the MP3 sound file format.

(d) Many candidates had difficulties with this question with many unfamiliar with a MIDI Interface.

Q.2 (a) Well answered.

(b) Well answered with many candidates naming "Ring" and "Bus" topologies. There were a large number of candidates that answered "Line" topology which is not accepted.

(c) This question was generally well answered although many candidates incorrectly thought that extranets cannot be accessed by customers.

Q.3 (a) Most candidates were able to name the type of HCI shown.

(b) This question was well answered with most candidates able to identify suitable uses for different types of HCI.

(c) Quite well answered. Some candidates indicated that an advantage of voice recognition is that it is "quicker than writing"; writing is not an accepted method of input. Candidates choosing to give Security as advantage of voice recognition must qualify their answer. A typical unqualified answer given was that voice recognition "only recognises your voice".

(d) This question was well answered with most candidates referring to users having difficulties due to strong accents or having a cold. Some candidates failed to qualify their answers by just giving a disadvantage similar to "it might not understand your voice".

(e) Well answered.

Q.4　(a)　Most candidates were able to give two reasons why data is encoded. Popular answers included faster input and fewer mistakes.

　　　(b)　Most candidates were able to give suitable alternative solutions to the problem of encoding colours using one character.

　　　(c)　This question was poorly answered. Many candidates were able to give one advantage and one disadvantage of using ICT systems to store and process data, but struggled to give a second.

Q.5　(a)　(i)　Well answered.

　　　　　(ii)　Well answered.

　　　　　(iii)　This question was poorly answered. Many candidates stated the obvious by writing that a decreased frame rate would slow down the animation as opposed to giving an actual effect.

　　　(b)　This question was well answered with some candidates giving an in-depth description of Persistence of Vision.

　　　(c)　Poorly answered. Many candidates were unfamiliar with the term Rotoscoping.

　　　(d)　Poorly answered. Many candidates were unfamiliar with the term Stop motion.

Q.6　(a)　Well answered.

　　　(b)　Well answered.

　　　(c)　This question was answered quite well although some candidates incorrectly listed services available at an ATM as an advantage.

　　　(d)　Generally well answered.

Q.7　(a)　(i)　Well answered.

　　　　　(ii)　Well answered.

　　　　　(iii)　Well answered, although some candidates incorrectly wrote that websites need to be Searched on a Web Server in order to be viewed over the internet instead of Hosted on a Web Server.

　　　(b)　(i)　Generally well answered.

　　　　　(ii)　Well answered.

　　　　　(iii)　Well answered.

　　　　　(iv)　Very poorly answered. Candidates responses suggested that they were unfamiliar with the term Leader Board, with many associating the term with some form of league table of highest scores in a computer game or a list of most visited websites.

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(c)　(i)　Use of correct terminology varied from centre to centre.

(ii)　Despite some candidates answering 7(c)(i) incorrectly, many were able to apply their practical knowledge of search engine use in order to answer this question correctly.

Q.8　(a)　Poorly answered. Many candidates were unable to identify statements that apply to the Data Protection Act.

(b)　Very well answered. Some candidates incorrectly wrote that Software piracy was crime covered by the Computer Misuse Act.

Q.9　Many candidates gave an extensive answer discussing the recent impacts of ICT on working practises. Popular answers included a discussion on Teleworking, Videoconferencing and Robotics.

UNIT 4 – Developing Multimedia ICT Solutions

Controlled Task

General Comment

Centres are advised that samples of work for this unit must be submitted electronically and not in printed form. Of the many websites and presentations seen not one worked completely as it should. Videos and animations in websites and even in PowerPoint presentations rarely worked. Sometimes the raw files were available but if the moderator did not have that software or even the same version of the software then these files could not be opened. Centres need to consider how they are going to publish the websites especially for the moderator to assess. Supporting evidence reports became crucial in allowing moderators to agree centre marks. These reports containing screenshots of features were invaluable. These need not be a complete record of every little step a candidate took but merely provide evidence of features used.

Some of the websites and presentations submitted were of a very high standard, but others needed to consider the target audience as specified by the controlled test.

Organisation of folders and files
Centres are asked to note that the one mark for storing files is for use of **folders and subfolders** and **files.** Sensible naming of files and folders basically requires that the moderator should be able to anticipate what might be in the folder or file. If the folder is named 'pictures' then it should not contain a sound file. A statement saying *'the technician backs it up at night'* is not good enough as evidence for backup folders on an external device. If this is the case then evidence should include specific details of times, procedures and the discs which are required. Candidates should demonstrate careful version management on the majority of their files not just on one. Sources logs came in many forms and were generally acceptable.

Research and design
It is acceptable for candidates to analyse websites and then produce a presentation (or vice versa). The description of purpose in analysis of each website or presentation was generally good. Descriptions of house style tended to just describe the colour scheme and logo but this is acceptable at this level as long as there is sufficient detail. Candidates should be encouraged to be more specific when describing target audience. General phrases like 'customers' or 'people' are too vague. They need to detail what age group or specific group of people, the presentation is aimed at.

Comparing and contrasting multimedia or web features proved to be a problem area. Candidates do **not** need to identify data, pictures or logos for this section. They should identify multimedia features such as flash animation, movies, podcasts, etc or web features such as hyperlinks, hotspots, shopping trolleys, etc. Having clearly identified them on the website, for example, by drawing an arrow to them rather than just listing them. They then compare and contrast the features they have identified.

When identifying file type and file size of two different features on the websites candidates could include comments on images or multimedia/web features. These could be on one web site, they do not need to identify two on each site, but they must be different types, not two different jpegs, for example. They must also identify or indicate the size of the file as well as the type.

Research individual presentation or web page
This is a design phase and there must be evidence of planning and design of the pages or slides the candidates will go on to produce. This was quite badly done except for the moodboard. There are five marks here and some Centres were giving full marks for implemented systems when there was no design. Design must be clearly before implementation and no part of the implemented system can be awarded marks under this section. Candidates were expected to write a paragraph about the purpose of their web page or presentation and this should explain how or why their solution is fit for purpose and target audience. At a bare minimum for one mark they should describe what is going to be on their six slides or pages. Many candidates produced hand drawn design of a master page and scanned it in, or used a paint, drawing or DTP package to design their master page. Many gained the mark for a basic layout but adding the navigation features to be used was generally not done. Collection and design of mood colours/moodboard was done well.

Implementation
Creation of their own master page/slide or editing an existing template/slide design was done very well with some very impressive slide presentation designs made to look like websites. Creating navigation paths for six slides or pages was very well done by most candidates.

One area which followed on from an inadequate design stage was in entering text fit for purpose on each slide/page. Some slides had no more than headings with very little or no text on them. Candidates should ask themselves what is the planned purpose of the slide or page and examine if the information on it if **'fit for purpose'**. Six marks could be lost here.

Images
This section was generally well done but evidence of the use of at least three frames should be included for a complex image. Most candidates created two clearly different images but many did not show any evidence of consideration of compression formats used for the optimisation process. They should not be given the second mark for each image if they have not provided screenshot evidence of this process. Sometimes it was clear what tools candidates had used but at other times moderators could not support the centre assessment. It would be useful if pupils annotated their images to say what they used and centres should consider getting candidates to provide construction evidence of less standard tools, e.g. lighting effects, removal of backgrounds, etc..

Animations or animated movie
An animated movie is using movie making software to create an animation, some centres misunderstood this. In general, however, these were very well done and candidates produced some very original animations.

Some centres interpreted the storyboard for the animation as a storyboard for a movie which was acceptable if the movie software was used to make an animation. The second mark was for planning the frame rate and/or timings involved in each frame group where this was attempted it was well done but some Centres gave two marks when frame rates/timing were not planned. Additionally very few candidates explained the timing and/or frame rate which they went on to use but centres still awarded the mark.

Candidates are required to create two animations. Some centres created an animated banner combining graphics and text and counted this as both their main animation and their banner. This is not acceptable. Animations need clear evidence of features used and this is up to the candidate to provide. Many moderators struggled to see use of features for which the centre had awarded marks.

Complex animations require complex movement not just, for example, a car moving straight across six frames. Many centres confused the background mark in basic features with that in advanced features. In the basic features there is a background which does not move. In the advanced features the background moves as well as the animation in front of it.

Sound

Centres approached this in a variety of different ways but it was generally well understood. Candidates could gain the three basic marks in two different ways. Most achieved this by taking a sound file from a library or by adding a sound file to their movie for one mark, then using two simple editing features, such as cropping the file or changing the volume. An alternative used by some, after using a sound was to discuss the compression used on the sound file for one mark and either extend their discussion and justification of compression used or provide evidence of experimenting with different file compression types for the third mark.

Advanced features

A wide variety of advanced features were used. Most of the evidence for advanced features was generally provided in the report. The only real problem was double counting, for example, if candidates put a special effect on a web object some centres counted it again as a basic tool on a picture object and there were similar examples with sound editing. Marks should not be awarded twice for the same activity.

Evaluation

This section was generally over marked with centres giving credit for brief comments which did not fully address the mark scheme. Centres are advised to ensure candidates are familiar with the marking guidance for future submissions.

Comments should not be a narrative description but should relate to how the features used were beneficial, added value or detracted from the quality of their solution. A good evaluation is a critical consideration of the work produced and suggestions for future improvements should not be general e.g. 'add a video' but must be concrete suggestions.

For full marks candidates must give more than a running commentary of what they have done. They should **describe** the suitability and effectiveness of the features, tools and techniques they have used. They should justify their choice of images and sound and evaluate the way in which the images, sound, animation, tools and techniques they have created and used work together to make their slideshow or webpages fit for purpose. There should be critical analysis including suggestions for improvement, a review of feedback and comments on modifications made to the original design. Consideration should be given to use of their multimedia guide and of the effectiveness of their own working practices.