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ASSESSMENT and QUALIFICATIONS ALLIANCE

Report on the Examination

Design and Technology:
Food Technology

- Full Course
- Short Course

Version 1.1

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Examination paper

General Points

The paper represented a varied and challenging range of questions relating to the research context of outdoor entertaining and the design theme of savoury products. It was obvious that most centres had made good use of the coloured preparation sheet to prepare their candidates for the different topics of revision needed and also for the depth of knowledge required to answer the questions well. It was also noted that while there had been an improvement in graphic and literacy skills for the average or higher ability candidates, some candidates let themselves down with muddled and rambling explanations. In most cases, handwriting was felt to be neater and more legible with well-presented answers, often in bullet-form to aid description. Most candidates used blue or black pen as requested. Design questions were well-drawn in pencil and annotated appropriately with colour being used effectively to give detail and definition to the product designs. The overall quality of work marked was very good. Most candidates benefited from good preparation and revision prior to the examination. However, it is still important that candidates read the whole question, including the introduction to the questions before starting to respond. It would be worthwhile highlighting the following problems as an aid to future examinations. Candidates should:

- read the whole question thoroughly before attempting a response;
- check the mark allocation so that they know the depth of response required for each part of a question;
- be dissuaded from repeating the question in the response to gain valuable space to write the answer;
- check back through the paper on completion to make sure all questions have been answered and in sufficient detail.

Full Course Foundation

It was generally felt that the examination paper was accessible to the majority of the candidates entered with very few candidates unable to cope with the level of questions. Where candidates did not score well, it was mainly for not reading the question correctly in the first instance, for misinterpreting questions, for giving vague answers or for leaving questions unanswered. However, it has been noted that while these still occur, they are becoming less of a problem each year. This is pleasing as it indicates that even less able candidates feel confident enough to attempt most of the questions. The overall quality of scripts marked this year was extremely pleasing with many more candidates able to successfully identify criteria, design products and give details of the possible development of products.

Question 1

(a) Generally well answered, although many candidates repeated the 'ready prepared' wording from the question. Some candidates reversed the 'advantage' and 'reason' in their response and a small number misinterpreted the question and referred to ready-cooked takeaway burgers.

(b) Many candidates responded well to this question and showed an awareness of the use of the 'Internet' and 'websites', however some less able candidates found it difficult to identify other ways a computer could be used to find information.

Question 2

(a) This part was extremely well answered by the majority of candidates of all abilities.

(b) Again well answered. Good, clear annotated sketches, often 3D or 'exploded' diagrams. Appropriate annotation gave details of all aspects of the design criteria. It was noted, however, that some candidates who did not want to design a burger product, actually changed the pie-charts and re-wrote the criteria to match their chosen 'kebab' product. Very few candidates did not read the criteria referring to a 'burger product' and designed inappropriate products such as 'potato salad' or 'crudities and dips'

(c) Reasonably well answered although some candidates merely repeated the general design criteria without giving details of 'how'.

(d) (i) Very well answered, with many candidates scoring highly for their responses to 'ingredients' and while most could give appropriate uses, the reason why flour was used was often a vague response.

(ii) Reasonably well answered although many candidates reversed the 'development' and the 'reason'. Some responses were very vague and often repeated the wording from the question 'to give more interest and appeal to children' without saying how.

Question 3

(a) Very well answered by the majority of candidates.

(b) Candidates responded well to this question and suitable ingredients were given in responses to match the improvements needed for the marinade.

(c) (i) Very poorly answered. Very few candidates could name an appropriate method of sensory testing. The most usual response was the vague answer 'taste testing'.

(ii) Many candidates could gain some marks here by describing how sensory testing could be carried out.

(iii) This section was generally well answered. Some candidates referred to fair testing procedures when carrying out sensory testing while others gave general fair testing points in product investigations.

Question 4

(a) (i) Satisfactorily answered on the whole, although most candidates did not gain full marks mainly because their responses did not refer to the 'advantages' of using a food processor in a test kitchen.

(ii) Quite well answered, the most common response was that electronic scales were 'more accurate'.

(b) Usually very well answered, many candidates gaining full marks by mentioning and expanding many relevant points. However, some candidates referred solely to personal hygiene points rather than a mixture of these and food safety points. A few candidates misinterpreted the question and gave general kitchen safety points.

Question 5

(a) Reasonably well answered with many candidates gaining at least half marks. However there were some vague answers such as making sure the temperature is 'right' or 'correct' without giving actual temperature ranges for freezing, cooking and chilling chicken. As two marks were awarded per response box, many candidates did not give sufficient detail or extend their responses to gain full marks.

(b) Varied responses to this question. Many candidates of all abilities attempted to give both 'cause' and 'control' answers. Again, as four marks were available for each 'problem', few candidates could give detailed responses or extend their answers sufficiently to gain full marks.

Question 6

(a) Poorly answered with few candidates gaining full marks. Often simplistic responses were given with little explanation of points made or limited reasons for the packaging of food.

(b) (i) Not well answered on the whole, candidates often misinterpreted the question and gave a specification for a salad product rather than the packaging.

(ii) Generally attempted, but not well answered. 'Plastic' was the favoured material and while credit was given for different grades of plastic, i.e. 'plastic tub', 'plastic bag' etc. the reasons why the material would be used were often repetitive, simplistic or vague.

(c) (i) Very well answered, many candidates gaining full marks for a detailed response.

(ii) Again well answered, candidates often correctly giving three types of meat as their response. Occasional incorrect responses were just 'egg' without stating use in a mayonnaise or 'rice' without explaining the use in a salad.

(iii) Generally well answered, candidates on the whole could gain full marks by correctly referring to storage and cooking points, as well as long-term storage (freezing) and information on labels referring to ingredients which cause allergies or intolerances.

Question 7

Poorly answered, often missed out altogether. Vague responses referring to 'low-fat' or 'vegetarian' products were the most frequent responses.

Full Course Higher

The preparation sheet had been well used by centres resulting in candidates making good use of the time available, however it was obvious that there were a large number of candidates who, because of poor literacy levels, should have attempted the foundation level examination. Many of these left questions unanswered or simply repeated phrases from the questions in their responses. For other candidates unanswered questions were few and far between and many questions were answered in extreme detail showing depth of knowledge and understanding. The use of colour and the quality of accurate sketches and annotation were outstanding, showing good use of graphical skills.

Question 1

(a) Most candidates knew why sales of ready prepared barbecue products had increased and as a result gained full marks.

(b) Candidates were less familiar with the disadvantages of these products, but most gained half marks.

(c) The focus of this question was on types of computer based information used by manufacturers. This was well answered with good understanding shown of the use of the Internet, Websites, spreadsheets, e-mail and word processing facilities. Few candidates however, mentioned the software to be used.

Question 2

(a) (i) Most candidates identified two suitable products but the range of products chosen was very limited, mostly burgers and kebabs. Some candidates did not know what is meant by a marinade, and used mayonnaise or dips as an accompaniment.

(ii) Few candidates managed to gain full marks as the design criteria were just repeated with little expansion or explanation of how the criteria were being met.

(iii) This question was generally well answered with clear communication of a range of ingredients and a full range of functions being correctly identified. Some weaker candidates repeated colour, texture, flavour with little added detail or qualification. Better candidates referred to tenderising of meats and the functions of nutrients.

(b) Some good quality graphic designs were produced for the packaging of the product. Many candidates mis-read the question and either did not write down the materials or missed out the labelling details. Cardboard is still being incorrectly used as a term instead of the term, paperboard.

Question 3

(a) Most candidates gained full marks for giving different design ideas for a sweet and spicy dip. When marks were lost it was due to vague answers like adding 'colouring' or 'flavouring'.

(b) (i) Candidates showed good understanding of sensory testing and most scored full marks. Many named an appropriate test and gave clear instructions.

(ii) Almost all candidates gained full marks and could describe methods of making the test fair.

(c) Most candidates understood that a preservative extended shelf life but few explained about retarding microbial growth. The functions of modified starch as a thickening agent or a stabiliser were less well known.

Question 4

(a) (i) Very few candidates fully understood or were able to explain the term 'designated tolerances'.

(ii) Most candidates knew what was to be found within a manufacturer's specification but did not include examples of designated tolerances.

(b) Candidates were expected to respond with a different hazard for each stage in the production of a chilled burger product. Many candidates described quality controls and not critical controls particularly for the shaping of the burgers. There was much repetition of 'bacterial hazards' and some candidates misunderstood the chilling of the burger and wrongly stated 'to freeze them'.

Candidates had a sound knowledge of temperature control and food probes but few explained the point that food should reach 72°C at the core to kill food poisoning bacteria. A quality control point, often given incorrectly, was for weight, dimensions or colour.

Question 5

The mark allocation for this question had not been studied clearly by some candidates, so answers often lacked detail and clarity. The apple section caused the most problems whilst in contrast good answers were given for emulsification with some candidates mentioning hydrophilic and hydrophobic characteristics of ingredients.

Question 6

(a) A good understanding of food poisoning was shown with references to high risk foods, cross contamination, failure to cook thoroughly due to difficulty of temperature control and the hazards of insects outdoors.

(b) Candidates were expected to identify items of food labelling that related to safe preparation, cooking and storing of high risk foods. Most candidates knew about storage places and temperatures, methods of cooking, times and temperatures. Better answers mentioned the legal requirements.

Question 7

Many excellent answers were given referring to social events, different religions, vegetarian products, GM /Fair trade, Organic products and research methods used by manufacturers. It was apparent that the subject had been fully researched prior to the examination and many candidates used the triangular diagram to structure and plan their responses. Many gained full marks.

Short Course Foundation

Generally, the paper was well answered this year and many candidates had attempted to answer all parts of the question paper. However, there was a high percentage of candidates who failed to read the questions carefully or who had misinterpreted the question itself and therefore their answers did not gain the marks they had hoped for.

The knowledge shown by candidates still tends to be very general in nature. Many candidates answer questions in very vague terms and their answers lack the specialist terminology which would clearly show that they have gained a good understanding of topics covered in the lead up to the exam. Candidates still tend to repeat answers, though their wording may be slightly different, and the repeated answer will not be credited. It is clear from reading their answers that candidates do have a basic grasp of concepts, but find it difficult to structure their answers sufficiently to show the depth of understanding which would lead to the higher marks.

Question 1

(a) Many candidates found it hard to put their responses in a convincing way that would lead to full marks. Too often, answers failed to give a valid reason for the advantage given e.g. "quick and easy", but did not then qualify the reason why. Consequently, many candidates actually gave only one answer which gained some marks. Some simply reworded and repeated their responses - candidates need to realise that "quick" can also be interpreted as "saves time", therefore only one advantage was given, not two.

(b) Most candidates were able to give two ways a computer could be used to find out information but did not always qualify what type of information it would be, so failed to get two marks.

Question 2

(a) The majority of candidates were able to interpret the pie charts correctly and wrote three correct design criteria statements. However, there were some that simply wrote one word responses e.g. "yes", instead of the expected answer of “the product should be served with a bread product”.

(b) Most candidates were able to interpret the design criteria statements and designed two burger products. A few had drawn kebabs and gained no marks for doing so. In order to gain maximum marks for each idea, candidates should have specifically named the type of bread product "sesame seed bun” and the type of burger “beefburger”, “chickenburger” etc, as well as the flavours of any sauces to be used. Those candidates who failed to give specific detail did not gain maximum marks.

(c) As in previous years, too many candidates simply copied out the original criteria statements, without explaining how their sketch would meet the criteria. Candidates are expected to justify their choice by statements such as "I have used a sesame seed bun for my bread product to hold the beef burger ", rather than "I have used a bread product".

(d) (i) Some candidates misinterpreted the question and wrote down three ingredients of their sketched idea, rather than three ingredients solely for the bread product. Most candidates were able to name three bread ingredients, but did not always give the correct use. A surprisingly large number put down "self raising flour" as being the main ingredient, which was not credited.

(ii) Answers were generally good but some responses were rather vague. Candidates simply repeated the wording of the question as their answer, instead of giving a valid reason. "Change the colour, by adding tomatoes" gives a clear area of development and an example of an ingredient, which would achieve it.

Question 3

(a) Unfortunately, few candidates achieved a mark on this, because they did not actually name a method of sensory testing - ranking, rating, triangle test, product profiling etc. Most candidates put "taste testing", which was not specific enough.

(b) Some candidates did attempt to write down how products are tested for taste etc. and were credited if they were able to show that they had an understanding of how a fair test should take place. Few candidates gained full marks on this question - in fact, answers were so vague that some candidates gained no marks.

Question 4

(a) Most candidates gained maximum marks and were able to identify successfully the advantages of using a food processor to make coleslaw.

(b) A large number of candidates misinterpreted the question and lost valuable marks. Many wrote down safety rules concerning the use of a food processor, rather than food safety rules of a food handler in a test kitchen. Food safety rules tended to be simplistic, unqualified statements. It would be nice to see candidates trying to explain the reason for the rule.

Question 5

(a) Too many candidates failed to write a control check, but rather gave instructions to follow. Most candidates were aware of the temperature checks that would be in place. Candidates who were able to give specific correct temperatures gained more marks. Some candidates had confused the process of freezing and chilling and gave incorrect temperatures.

(b) Many answers were simplistic "not enough yeast", "add more yeast", but quite a large number of candidates were able to gain good marks on this question. However, candidates do need to think carefully about the context of the question and to read the heading of the chart with greater care. Some candidates had interpreted the "causes" column to mean the consequences for the customers, rather than the cause of the actual problem with the food product.

Question 6

(a) Most candidates were able to identify reasons why food is packaged, but some went into great detail about only one reason and some repeated reasons which were only credited once - "to keep it fresh", "to keep it longer", and "to prolong shelf life" are all repeating the same point.

(b) Most candidates identified correct packaging materials, but some did not look at the chart headings and wrote down the name of the type of packaging -(bags, cartons and tubs)- but did not identify the material it would be made from. Few candidates gave properties of the material itself, but gave general reasons as to why a salad would be packaged.

(c) (i) Few candidates were able to give the answer that after the date given the food would be unsafe to eat. Vague answers like "food will go off" still tend to be popular, with few candidates able to say why this will happen.

(ii) Answers were very vague, with most candidates not able to explain the reason why the prawns should not be frozen again. Many mentioned the fact that the flavour would be affected, but very few were able to give a detailed response mentioning bacterial contamination.

Question 7

Many candidates focused on the "low fat" aspect of barbecue products, but did not always clarify why customers would want to buy low fat alternatives. Few candidates were able to give reasons for low sugar or low salt products. Answers were sometimes muddled and candidates often repeated their answers, meaning that they did not gain full marks.

Short Course Higher

The preparation sheet had been well used by centres resulting in candidates making good use of the time available. Unanswered questions were few and far between and many questions were answered in detail. The use of colour and the quality of sketches and annotation were outstanding showing good use of graphical skills. The majority of candidates had been correctly entered for the higher tier.

Question 1

(a) Well answered with a range of points relating to more people working, therefore less time to prepare their own food products and with a wider variety of products being available.

(b) Overall the disadvantages were weak and in some cases in conflict with the advantages. Candidates were able to identify that products may be less expensive when compared to home made, but an awareness of understanding the lack of nutrients due to the method of processing was disappointing. Not all candidates were aware of what was meant by 'barbecue products' and just thought in terms of 'meat' rather than a wider range.

(c) A good range of comments relating to the use of the Internet, websites, nutritional software and writing questionnaires proved to be popular answers. Most candidates gained full marks.

Question 2

(a) An excellent standard of sketching and the use of colour was demonstrated, alongside clear and precise annotation by candidates. Most candidates drew two different products and therefore scored full marks. Kebabs and burgers were often selected and a range of marinades, although some candidates confused marinades with dips. In a number of cases, mayonnaise was mistakenly used as a marinade. There were a large number of candidates who sketched vegetarian products. Candidates clearly identified specific ingredients e.g. red peppers, lean minced beef.

(b) The explanation of the design criteria still continues to be a weak area with many candidates unable to show their interpretation of each point in their chosen product. Many poorer candidates copied the design criteria without further explanation and therefore could not obtain full marks.

(c) A good range of ingredients were given for both the product and the marinade. The functions of ingredients were more repetitive for 'colour' 'flavour' 'texture' and without specifying 'red colour' or 'crunchy texture'.

Question 3

(a) This was well answered. The majority of candidates were able to correctly match ingredients to chosen sensory areas. Occasionally there was confusion over using 'herbs' for 'spiciness'

(b) (i) Many candidates scored highly on this question as a range of answers were given. It is evident that sensory testing has been carried out. Few candidates were able to name a test but a few referred to triangle testing and profiling.

(ii) Candidates had often covered this as part of their previous answer. Most candidates gained full marks.

(c) Understanding the use of a food processor in the test kitchen meant that most candidates scored full marks. Popular answers referred to speed, consistency and reduced cross contamination. In many cases candidates gave qualified answers, these often compared efficiency to the human effort required.

Question 4

(a) There were mixed responses to this question. Some candidates have a clear knowledge of the hazard categories, but others incorrectly noted templates to get even sized burgers or to complete weight checks. Other candidates repeated the biological example given and often related it to the washing of hands and equipment therefore not gaining full marks.

(b) Many candidates do not know what a control check is. Those candidates who achieved success gave temperature control and metal detection as correct responses. Few candidates mentioned the use of pH tests and bacterial counts.

Question 5

The uneven size of pepper was generally answered very well with reference to misshapen produce or faulty equipment, and relevant controls were given. Lack of, or incorrect proportion of yeast was often given as a reason for the buns not rising. Several candidates referred to self-raising flour as being the problem and the solution. Some candidates misread the question and referred to the burger. Oxidation was clearly understood by candidates in some centres and the way this is related to time factors. Good understanding was shown of the use of an acid e.g. lemon juice to prevent the problem, covering, keeping chilled and preparing immediately before use were other popular answers. Many candidates had studied the action of emulsifiers and the use of lecithin in eggs to stabilise the mixture. Several were able to refer to the different densities of products and of shaking before use.

Overall candidates scored very highly on this question.

Question 6

(a) Most candidates scored full marks on the functions of packaging. They were able to support individual points with suitable examples.

(b) Generally candidates showed a limited knowledge of the correct names of packaging materials and appropriate reasons for using. Therefore candidates offered similar or repetitive answers for each named product. A number of inappropriate materials such as PVC were also named.

(c) This was extremely well answered by the majority of candidates. After some initial repetition of the question most candidates were able to expand their answer giving reference to cooking times, temperatures, appropriate storage and use by dates. Occasionally candidates misread the question and answered points related to the manufacturer. A number of candidates were given credit for referring to the legal aspects of food labelling.

Coursework

Introduction

This was the first year of this new specification.

Following the previous two autumn term teachers' meetings there was an expectation that both coursework and written papers would be addressed in a significantly different way to previous years.

However the specification had been interpreted in a variety of ways by centres and teaching and learning clearly was very variable across centres. In many cases the specification content had not been addressed fully and little regard had been paid to the exemplar materials circulated to all centres and the advice given at autumn term meetings for teachers.

The written papers were well received by centres and the context was popular. However there is still a need for centres to ensure that candidates have a broad base of knowledge and understanding of food technology rather than teaching to the preparation sheet.

General Points

- Teachers who attend and incorporate the guidance and support given at the autumn term meetings are ensuring that their teaching is having a positive impact on candidate progress and attainment.
- This year's coursework demonstrated a good grasp of the design process. There was some reduction in the size and quantity of design folders, more detailed teacher annotation from some centres and a better understanding of development in a minority of centres.
- ICT continues to be a strength and the representation of design ideas has really evolved.
- Where product development is understood and applied standards improve.
- Less evidence of the proliferation of time plans and recipes and methods was seen this year.
- It was refreshing to see new design briefs being used - either taken from the exemplars in the specification, adapted from the exemplars or devised by the centre. There was also more evidence of a range of briefs being used within one centre.
- Centres who have a good grasp of the design process and teach candidates how to develop food products continue to make progress.
- More evidence of candidates thinking was evident and where centres had encouraged candidates to use connectives and phrase banks this was particularly beneficial.
- Writing frames are a good way to guide and support lower ability candidates and enable them to reduce the quantity of what they write. However some centres were using difficult language and concepts on writing frames which actually further confused candidates.
- More evidence of annotated sketches was evident. This was helpful in enabling candidates to show thoughts and ideas.
- Specifications are well understood and manufacturing specifications are a particular strength.
- Digital images are being used increasingly and record the process not just the product.
- There is more evidence of candidates working with small quantities rather than remaking the same complete product each time, however, there continues to be a proliferation of stand alone practical 'dishes' in some centres with little link between them and a lack of any development.
- Although many centres had followed a somewhat formulaic approach the impact on the candidates understanding of what they needed to do was very positive and enabled evidence of their understanding and knowledge to be demonstrated, in addition to them being able to apply and understand the design process.

- Inclusion of investigations, testing and experimental work enable candidates to apply their knowledge of the functions and working characteristics of food materials and have an impact on raising standards.
- Centres who had previously made good progress continue to further their progress. However centres new to AQA are less familiar with the demands and interpretation of the specification and need to ensure they attend the teachers' meetings in the autumn term.
- There is more evidence of candidates being taught how to research, how to summarise research and how to include prior knowledge.
- Many candidates continue to produce far too much research despite all the advice and examples given at teachers' meetings. If a disproportionate amount of time is spent on research there is insufficient time left for candidates to get down to the 'meat' of the coursework project which is the generation of ideas, development and evaluations.
- The majority of centres made very little use of research and means candidates were potentially wasting their time carrying out work that was not then used.
- Similarly evaluation was very superficial and did not inform the next steps in the design process.
- Sensory evaluation was poorly recorded and lacked objectivity.
- Application of industrial practice varied significantly and in some centres there was some regression from previous years.
- Centres are marking more accurately but not necessarily improving standards.
- The majority of centres are using the assessment criteria more effectively and accurately, thereby applying the recognised AQA standard.
- It was still necessary to make large adjustments to some centres' marks.
- Internal standardisation is more consistent but there are still examples where standards are inconsistent between teachers.
- Overall less feedback continuation reports were written.
- There continues to be significant variation in the quality and content of CRFs. This year has seen some excellent practice where teachers need to be thanked for the way in which they have supported the candidates in their 'making'. At the opposite end of the spectrum CRFs were submitted as blank sheets. This meant returning them to the centre and often when resubmitted there was little detail or evidence included.
- The list of making that has been done by each candidate is the most important box on the CRF. Many centres had failed to complete this task which often meant that candidates could not be credited for work as there was no evidence.
- Where lists of making are detailed this is very helpful. Centres who numbered the amount and type of making gave very clear guidance to the moderator about how much and what range of making had been carried out by candidates.
- Where CRFs have been kept as an ongoing record, these are very detailed and the comments very helpful in confirming the judgement made by the teachers. It was often the case that where annotation was clear and detailed there was less chance of any changes being made to marks.
- Moderators can only confirm the grades awarded by the centre if there is sufficient evidence.
- The confusion that arose when the wrong CRF was used, often restricted teachers in what they said and how they said it.

Recommendations

- Candidates need to understand the design brief and what is expected of them.
- Design briefs should be used to give a starting point but if candidates deviate from the brief they should not be penalised if the design process has been followed. *The process is more important than adhering strictly to the brief.*
- Candidates need to be taught how to select, present and arrange information in order to use space more efficiently and thereby significantly reduce the number of pages in the folder.
- Research may occur at different points in the process therefore candidates should be discouraged from 'front loading ' all the research at the beginning of the project.
- Candidates should ask 'why?' for each step in their thinking in order to stimulate their response on paper.
- Teachers need to have a clear understanding of the meaning of 'development' themselves.
- Candidates should only produce a production plan for their final product not a time plan for each making activity.
- The amount of time spent on making should reflect the weighting of this part of the coursework.
- Candidates need to carry out a range of making activities.
- Product analysis must be relevant to the brief and the chosen product development.
- HACCP and Quality Control procedures are only required for the final product in order to reduce the size of the design folder.
- Evaluation should take place throughout and there is no need to produce a full page of evaluation at the very end of the folder. A simple sentence or paragraph would be sufficient.
- Teachers should keep ongoing records about candidates' work.
- Candidates should be given feedback throughout the coursework in order to improve what they are doing and how they are doing it.
- There should be **no** 'making at home' unless it is **one** simple repeat of a previously made outcome at school.
- Designing should inform making.
- Use of photos/video etc are not compulsory but in many cases are a good source of evidence if appropriately annotated.
- A list of making must be provided on the CRF.
- Teachers need to refer to Quality Assurance (QA) and Quality Control (QC) on the CRF as this is one of the criteria for each grade of the making assessment criteria.
- Candidates, particularly more able ones, need to refer to social, moral and environmental issues.
- Encourage candidates to select one of their design ideas to develop rather than doing some development to each idea. This will raise attainment as it makes development easier to track, evaluation to be more focused and manufacturing more specific. It will also reduce the time taken to produce the folder and the quantity of material in the design folder.

Mark Ranges and Award of Grades

Full Course

Foundation tier

Component	Maximum Mark (Raw)	Maximum Mark (Scaled)	Mean Mark (Scaled)	Standard Deviation (Scaled)
3542/F	125	140	68.2	20.9
3542/C	95	210	113.0	37.1
Foundation tier overall 3542	--	350	181.30	49.95

		Max. mark	C	D	E	F	G
3542/F boundary mark	raw	125	80	66	53	40	27
	scaled	140	90	74	59	45	30
3542/C boundary mark	raw	95	59	47	35	23	11
	scaled	210	130	104	77	51	24
Foundation tier scaled boundary mark		350	214	174	135	96	57

Higher tier

Component	Maximum Mark (Raw)	Maximum Mark (Scaled)	Mean Mark (Scaled)	Standard Deviation (Scaled)
3542/H	125	140	92.3	18.2
3542/C	95	210	173.9	27.4
Higher tier overall 3542	--	350	266.30	39.25

		Max. mark	A*	A	B	C	D	allowed E
3542/H boundary mark	raw	125	108	97	86	76	60	-
	scaled	140	121	109	96	85	67	-
3542/C boundary mark	raw	95	95	83	71	59	47	-
	scaled	210	210	183	157	130	104	-
Higher tier scaled boundary mark		350	321	288	252	216	171	148

Although component grade boundaries are provided, these are advisory. Candidates' final grades depend on their total marks for the subject. In particular, A* is determined on candidates' total marks, not on each component, and candidates do not have to obtain 95 marks on the coursework component in order to gain grade A* on the subject as a whole.

Provisional statistics for the award

Foundation tier (40273 candidates)

	C	D	E	F	G
Cumulative %	28.4	56.9	77.8	90.8	97.2

Higher tier (28868 candidates)

	A*	A	B	C	D	allowed E
Cumulative %	6.2	32.4	66.8	90.1	98.3	99.2

Overall (69141 candidates)

	A*	A	B	C	D	E	F	G
Cumulative %	2.6	13.5	27.9	54.2	74.2	86.7	94.3	98.0

Short Course

Foundation tier

Component	Maximum Mark (Raw)	Maximum Mark (Scaled)	Mean Mark (Scaled)	Standard Deviation (Scaled)
3552/F	100	120	61.9	17.8
3552/C	95	180	91.0	34.6
Foundation tier overall 3552	--	300	152.90	44.75

		Max. mark	C	D	E	F	G
3552/F boundary mark	raw	100	69	56	44	32	20
	scaled	120	83	67	53	38	24
3552/C boundary mark	raw	95	59	47	35	23	11
	scaled	180	112	89	66	44	21
Foundation tier scaled boundary mark		300	188	152	117	82	47

Higher tier

Component	Maximum Mark (Raw)	Maximum Mark (Scaled)	Mean Mark (Scaled)	Standard Deviation (Scaled)
3552/H	100	120	91.4	13.8
3552/C	95	180	149.0	25.1
Higher tier overall 3552	--	300	240.41	33.63

		Max. mark	A*	A	B	C	D	allowed E
3552/H boundary mark	raw	100	96	88	80	73	64	-
	scaled	120	115	103	96	88	77	-
3552/C boundary mark	raw	95	95	83	71	59	47	-
	scaled	180	180	157	135	112	89	-
Higher tier scaled boundary mark		300	287	262	230	199	166	149

Although component grade boundaries are provided, these are advisory. Candidates' final grades depend on their total marks for the subject. In particular, A* is determined on candidates' total marks, not on each component, and candidates do not have to obtain 95 marks on the coursework component in order to gain grade A* on the subject as a whole.

Provisional statistics for the award

Foundation tier (1936 candidates)

	C	D	E	F	G
Cumulative %	22.2	50.9	72.1	87.4	97.1

Higher tier (1658 candidates)

	A*	A	B	C	D	allowed E
Cumulative %	3.9	31.2	65.3	89.7	96.2	98.3

Overall (3594 candidates)

	A*	A	B	C	D	E	F	G
Cumulative %	1.8	14.4	30.1	53.3	71.8	84.2	92.4	97.6

Definitions

Boundary Mark: the minimum (scaled) mark required by a candidate to qualify for a given grade. Although component grade boundaries are provided, these are advisory. Candidates' final grades depend only on their total marks for the subject.

Mean Mark: is the sum of all candidates' marks divided by the number of candidates. In order to compare mean marks for different components, the mean mark (scaled) should be expressed as a percentage of the maximum mark (scaled).

Standard Deviation: a measure of the spread of candidates' marks. In most components, approximately two-thirds of all candidates lie in a range of plus or minus one standard deviation from the mean, and approximately 95% of all candidates lie in a range of plus or minus two standard deviations from the mean. In order to compare the standard deviations for different components, the standard deviation (scaled) should be expressed as a percentage of the maximum mark (scaled).