

**OCR ENTRY LEVEL CERTIFICATE IN  
DESIGN AND TECHNOLOGY (FOOD TECHNOLOGY)**

**(3960)**

**Key Features**

- Covers National Curriculum Order for Design and Technology
- The specification assesses achievement at Levels 1, 2 and 3 of the National Curriculum
- Designed to be co-teachable with GCSE
- There is only one assessment component: coursework 100%
- A range of suitable tasks for coursework
- Immediate support from specialist subject officer

**Support and In-Service Training for Teachers**

- A full programme of In-Service training meetings arranged by the Training and Customer Support Division (telephone 01223 552950)
- Written advice on coursework proposals
- A report on the examination, compiled by senior examining personnel after each examination session
- Individual feedback to each Centre on the moderation of internally assessed coursework

**Relationship with the GCSE (Full Course) Specification**

This specification is based on the GCSE (Full Course) specification of the same name. Variations relating to content and scheme of assessment are shown in this specification by italic text.

The specification is designed to enable schemes of work used to deliver the GCSE specification of the same name to be used for its delivery.

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## SECTION A: SPECIFICATION SUMMARY

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The revised Entry Level Certificate specification retains the characteristics of the Design and Technology (Food Technology) specification previously offered by OCR.

The revised specification provides a coherent, satisfying and worthwhile course of study for candidates, whether they wish to pursue the study of Design and Technology in the future or whether it will be their last experience of studying the subject.

This specification meets the National Curriculum Order for England (DfEE/QCA 1999) for Design and Technology *and is designed for candidates who are working towards a Grade G in GCSE*. It provides opportunities for candidates to develop an awareness of the nature and significant importance of Design and Technology in a rapidly changing society. It enables candidates to develop their application of knowledge, skills, and understanding of Food Technology within an overall design and make based approach.

The specification offers a system of assessment *which recognises the need for greater teacher involvement in candidates' work than in GCSE* and which is based on clear targets and a coherent set of criteria for rewarding positive achievement *within the three pass levels*. The assessment of candidates *is through 100% coursework and is divided into three clearly identified units*.

The specification is fundamentally designed to assess a candidate's capability at the end of KS4. It does, however, recognise that appropriate experiences at KS3 are essential if a candidate is to realise his/her full potential.

First certification will be in Summer 2003.

### RELATIONSHIP WITH THE GCSE (FULL COURSE) SPECIFICATION

This specification is based on the GCSE (Full Course) specification of the same name. Variations relating to content and scheme of assessment are shown in this specification by italic text.

The specification is designed to enable schemes of work used to deliver the GCSE specification of the same name to be used for its delivery.

### SCHEME OF ASSESSMENT

There will be three levels of award: Entry 1, Entry 2 and Entry 3.

## WEIGHTING OF THE ASSESSMENT OBJECTIVES

The Assessment Objectives are to be weighted:

- Designing 40%
- Making 60%

*There is only one assessment component:*

*Coursework 100%*

## SPECIFICATION CONTENT

| <b>Designing and Making<br/>(sections 5.0 and 5.1)</b>       | <b>Knowledge and Understanding<br/>(section 5.2)</b> |
|--|--|
| Recognising the need a product satisfies                     |  |
| Developing and writing a design brief                        | Materials  |
| Drawing up a specification <i>for a manufactured product</i> | Standard pre-manufactured components                 |
| <i>Contribute to</i> generating design proposals             | Use of Systems and Control                           |
| <i>Contribute to</i> product development                     | Products and applications                            |
| Product planning   | Quality  |
| Tools and equipment  | Health and Safety                                    |
| Processes  |  |
| ICT applications   |  |
| Industrial applications                                      |  |
| Good working practice  |  |
| Product evaluation   |  |

*Note:* Whilst the headings above are similar or the same as those for the GCSE specification it is expected that the interpreted depth and breadth for candidates following this specification will be less than for those entering for GCSE.

## INTERNAL ASSESSMENT (COURSEWORK)

Internal Assessment (coursework) will consist of a project where candidates will be expected to *undertake an analysis of an existing manufactured product and then design and make a Food Technology Product.*

The project can be linked to a candidate's own interests, industrial practice or the community.

Projects may involve an enterprise activity, where candidates identify an opportunity, design to meet a need, manufacture products and evaluate the whole design and make process.

Candidates must use appropriate ICT to help with their work. This can include computer-aided design and manufacture (CAD/CAM) software, control programs, data analysis and ICT based sources for research.

Candidates must consider how technology affects society and their own lives.

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## SECTION B: GENERAL INFORMATION

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### 1 Introduction

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#### 1.1 RATIONALE

The specification aims to prepare candidates to participate in tomorrow's rapidly changing technologies.

The specification calls for candidates to become autonomous and creative problem solvers, as individuals and members of a team. They must look for needs, wants and opportunities and respond to them by developing a range of ideas and making products and systems. This specification combines practical skills with an understanding of aesthetics, social and environmental issues, function and industrial practices. Candidates reflect on and evaluate relevant present and past design and technology, its uses and effects.

The specification seeks to help candidates to become discriminating and informed users and innovators of products. It encourages candidates to think and intervene creatively to improve the quality of life for society.

This specification will assess achievement at levels 1, 2 and 3 of the National Curriculum.

This Entry Level qualification is a general qualification designed to enable candidates to progress either directly to employment or to Foundation Level courses within the National Framework for Qualifications.

This qualification is approved by the regulatory authorities (QCA, ACCAC and CCEA) as an Entry Level award as part of the National Qualifications Framework.

OCR has taken great care in the preparation of this specification and assessment material to avoid bias of any kind.

#### 1.2 CERTIFICATION TITLE

This specification will be shown on a certificate as:

OCR Entry Level Certificate in Design and Technology (Food Technology).

### **1.3 LEVEL OF QUALIFICATION**

All Entry Level Certificate specifications are intended to cater for those candidates unlikely to achieve a grade, in the same subject, at GCSE level. The requirements of the three pass grades available (Entry 1, Entry 2 and Entry 3) are broadly equivalent to the requirements for National Curriculum Levels 1, 2 and 3 and are intended to recognise a level of achievement below that of a grade G at GCSE.

Entry Level Certificate specifications utilise appropriate short term goals and manageable elements and are closely related to the GCSE specifications of the same name, in order to provide a stepping stone for possible progression to GCSE or equivalent.

### **1.4 RECOMMENDED PRIOR LEARNING**

Candidates who are taking courses leading to this qualification at Key Stage 4 should normally have followed the corresponding Key Stage 3 Programme of Study within the National Curriculum.

There is, however, no prior learning required for this qualification.

### **1.5 PROGRESSION**

This Entry Level Certificate is a general qualification designed to enable candidates to progress either directly to employment or to Foundation Level courses within the National Framework for Qualifications.

### **1.6 OVERLAP WITH OTHER QUALIFICATIONS**

The format of this specification is shared with other specifications in the Design and Technology suite. The very nature of designing and making means that processes are similar. However, the content that is examined in the papers and internal assessment of the specification is unique to this specification.

Of a more general nature this specification provides opportunities to promote knowledge and understanding of a wide range of skills, many of which are shared with other subject areas.

Those identified in the National Curriculum Order for England (DfEE/QCA 1999) for Design and Technology are :

- **thinking skills**, identifying relevant sources of information, and developing criteria for designs to guide their thinking;
- **financial capability**, through taking account of the relative cost of materials and components, in relation to their working characteristics and properties when deciding if, when and how to use them;
- **enterprise and entrepreneurial skills**, through identifying an opportunity to design something to meet a specific need, finding out about the work of professional designers and the manufacturing industry and then making and marketing the prototype product, and evaluating the whole process;
- **work-related learning**, through bringing a realistic industrial or commercial perspective to the development of a product in school based design studios or areas, visiting a workplace for hands-on experience related to designing and making, and providing the opportunity for visitors from business to act as product advisers or clients;
- **education for sustainable development**, through developing knowledge and understanding of the principles of sustainable design and production systems, developing skills in creative problem solving and evaluation, and exploring values and ethics in relation to the application of design and technology.

## 1.7 RESTRICTIONS ON CANDIDATE ENTRIES

Candidates who enter for this Entry Level specification may not also enter for any other Entry Level specification with the certification title Food Technology in the same examination series.

They may however enter for any GCSE, GNVQ or NVQ.

## 1.8 ICT

In order to play a full part in modern society, candidates need to be confident and effective users of ICT. Where appropriate, candidates should be given opportunities to use ICT in order to further their study of Food Technology.

The assessment of this course requires candidates to use ICT through preparing, presenting, and reviewing information as they work on their design ideas, and developing models that communicate these ideas.

This section offers guidance on opportunities for using ICT during the course.

| ICT Application | Opportunities for Using ICT During the Course |
|-----------------|---|
| Database        | Sections 5.1.1, 5.1.8, 5.1.11                 |
| Internet        | Sections 5.1.2, 5.1.8                         |
| Word Processing | Sections 5.1.2, 5.1.8, 5.1.11                 |
| Spreadsheet     | Sections 5.1.5, 5.1.8                         |
| CAD             | Sections 5.1.3, 5.1.4, 5.1.6, 5.1.8           |
| CAM             | Sections 5.1.8, 5.1.9, 5.1.10                 |

## 1.9 CITIZENSHIP

From September 2002, the National Curriculum for England at Key Stage 4 includes a mandatory Programme of Study for Citizenship. Parts of this Programme of Study may be delivered through an appropriate treatment of other subjects.

This section offers guidance on opportunities for developing knowledge, skills and understanding of citizenship issues during the course.

| <b>Citizenship</b>   | <b>Opportunities for Teaching Citizenship Issues during the Course</b> |
|--|--|
| Consider the needs of others   | Section 5.1.1  |
| Consider issues surrounding a particular product and its surroundings              | Section 5.1.2  |
| Seek opinions of others and be flexible and adaptable in responding to their needs | Sections 5.1.3/4   |
| Consider the need to work together as a team                                       | Section 5.1.9  |
| Seek the opinions of others  | Section 5.1.11   |
| Consider the health and safety of others   | Section 5.2.5  |

## 1.10 SPIRITUAL, MORAL, ETHICAL, SOCIAL AND CULTURAL ISSUES

*During the course there are opportunities to promote candidates' spiritual, moral, social and cultural development.*

The specification provides opportunities to promote:

**spiritual development:** through helping pupils recognise their own creativity and the creativity of others in finding solutions to problems, and through recognising the tension between material and non-material needs;

**moral development:** through helping pupils to reflect on how technology affects the environment so they can make informed choices when designing and making and through discussing the moral dilemmas posed by introducing new technologies within different value systems and the advantages and disadvantages of new technology to local, national and global communities;

**social development:** through helping pupils recognise the need to consider the views of others when discussing design ideas;

**cultural development:** through exploring the contribution of products to the quality of life within different cultures, and through valuing and reflecting on the responses of people from other cultures to design solutions.

## **1.11 HEALTH, SAFETY AND ENVIRONMENTAL ISSUES**

OCR has taken account of the 1988 Resolution of the Council of the European Community and the Report Environmental Responsibility: An Agenda for Further and Higher Education, 1993 in preparing this specification and associated specimen assessments.

The specification provides opportunities to promote education for sustainable development, through developing knowledge and understanding of the principles of sustainable design and production systems, developing skills in creative problem solving and evaluation, and exploring values and ethics in relation to the application of design and technology.

Whilst candidates will not be specifically assessed in terms of their knowledge and awareness of issues associated with energy usage it is anticipated that, whenever possible, candidates will be encouraged to consider the benefits and drawbacks associated with the use of different sources of energy.

The specification content includes a specific requirement to consider issues associated with health and safety and the environment. See Section 5.

## **1.12 THE EUROPEAN DIMENSION**

OCR has taken account of the 1988 Resolution of the Council of the European Community in preparing this specification and associated specimen assessments. European examples should be used where appropriate in the delivery of the subject content. Relevant European legislation is identified within the specification where applicable. See Section 5.

## **1.13 CODE OF PRACTICE REQUIREMENTS**

This specification will comply in every respect with Code of Practice requirements for Entry Level qualifications.

## **1.14 STATUS IN WALES AND NORTHERN IRELAND**

This specification has been approved by ACCAC for use by Centres in Wales.

Candidates in Wales and Northern Ireland should not be disadvantaged by terms, legislation or aspects of government that are different from those in England. Where such situations might occur, including in the external assessment, the terms used have been selected as neutral, so that candidates may apply whatever is appropriate to their own situation.

OCR will provide specifications, assessments and supporting documentation only in English.

Further information on the provision of assessment materials in Welsh and Irish may be obtained from the Information Bureau at OCR (telephone 01223 553998).

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## 2 Specification Aims

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The specification requires candidates to demonstrate fully their design and technology capability by combining skills with knowledge and understanding, in order to design and make quality products.

The specification allows candidates to acquire and apply knowledge, skills and understanding through:

- i analysing and evaluating products and processes;
- ii engaging in focussed tasks to develop and demonstrate techniques;
- iii engaging in strategies for developing ideas, planning and producing products;
- iv considering how past and present design and technology, relevant to a designing and making context, affects society;
- v recognising the moral, cultural and environmental issues inherent in design and technology.

The aims of this specification are:

- to encourage candidates to combine their designing and making skills with knowledge and understanding, in order to design and make quality products;
- to promote design and technology capability in candidates through activities which involve a range of contexts, materials, processes and to lead to practical outcomes;
- to give opportunities to develop practical abilities and the confidence to design, make and modify products for identified purposes, selecting and using resources effectively;
- to promote the use of graphic techniques and ICT including computer-aided design (CAD), to generate, develop, model and communicate design proposals;
- to promote the use of computer-aided manufacture (CAM) in single item production and in batch or volume production;
- to encourage the development of candidates' critical and aesthetic abilities, enabling them to evaluate design and technology activity, including their own, in the context of an identified need;
- to encourage the development of candidates' understanding of the needs and values of a range of users; including spiritual, moral, social, and cultural considerations;
- to promote the key skills of communication, application of number, IT, working with others, improving learning and performance and problem solving;
- to encourage the development of candidates' thinking skills, financial capability, enterprise and entrepreneurial skills;
- to encourage the development of candidates' understanding of work-related learning and the principles of sustainable design and production systems;
- to encourage candidates to consider how present and past design and technology, relevant to a designing and making process, affects society;
- to encourage candidates to consider the uses and affects of new technologies and modern materials on product design and manufacture;
- to provide for activities which give candidates opportunities to work both individually and as a member of a team.

Most of these aims are reflected in the Assessment Objectives. Others, due to their very nature, cannot be readily assessed.

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### 3 Assessment Objectives

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The Assessment Objectives are designed to reflect the Programme of Study for Design and Technology.

Within this specification candidates will need to demonstrate their ability to:

- develop, plan and communicate ideas;
- work with tools, equipment, materials and components to produce quality products;
- evaluate processes and products;
- understand materials and components;
- *interact with* systems and control.

*There are three Specification Assessment Objectives. These are developing capability through:*

- acquiring and applying knowledge, skills and understanding of materials, components, processes, techniques and industrial practice;
- acquiring and applying knowledge, skills and understanding when designing and making quality products;
- acquiring and applying knowledge, skills and understanding when evaluating processes and products; and examining the wider effects of design and technology on society.

#### INTERNAL ASSESSMENT OBJECTIVES

The three Assessment Objectives will be internally evaluated against the following six internal assessment objectives: (see Guidance for Teachers, Section 7.4)

- 1 identify a need or opportunity that *has* led to a design brief *for a marketed product*;
- 2 *study of a manufactured product which results in the identification of specification points*;
- 3 *study of a manufactured product which results in the identification and communication of simple design decisions that may have influenced the product development*;
- 4 *from a design brief and specification generate possible ideas that contribute to a solution*;
- 5 *contribute to* planning and realising the product;
- 6 evaluate and test the product.

*To allow Centres flexibility in choosing appropriate coursework routes, the six objectives are grouped into three units each focusing on a different aspect of Designing and Making. (see Section 4.3)*

Internal Assessment (coursework) will test the knowledge, skills and understanding necessary to design and make products in the appropriate media. The evidence required to be submitted for this task *should* include a 3 dimensional product with a concise portfolio and/or appropriate ICT evidence.

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## 4 Scheme of Assessment

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### 4.1 COMPONENTS

There is only one assessment component:

Coursework                      100%

### 4.2 WEIGHTING OF ASSESSMENT OBJECTIVES

*Designing*                      40%

*Making*                         60%

### 4.3 ENTRY CODE

| Entry Code | Title      | Components |
|------------|------------|------------|
| 3960       | Coursework | 1          |

### 4.4 INTERNAL ASSESSMENT (COURSEWORK)

*The internal assessment of coursework will consist of three units each focusing on a different aspect of Designing and Making and centred on a choice of tasks set by OCR (See Section 6), or the course teacher (having obtained approval for the task from OCR.).*

**Unit 1:** *Analysis of a product and its development (examination of an existing product and identification of the situation, users and purpose for which it was designed, how it works, its materials and components and how it was produced commercially; then write a simple design brief and list specification points that it satisfies);*

**Unit 2:** *Generation of ideas, construction planning and realisation from a design brief and specification;*

**Unit 3:** *Evaluation of the realised product.*

*Knowledge and understanding of specification content will be assessed through the evidence presented by candidates as coursework Units 1, 2 and 3.*

*The whole activity should reflect 20 to 25 hours of work.*

*There are **two** significantly different routes that candidates may take when producing their coursework, namely:*

- 1 the three units are linked by a single product focus resulting in a 3 dimensional product with a concise portfolio and/or appropriate ICT evidence;*
- 2 Units 1 and 2 may have a different product focus enabling candidates to make a fresh start in Unit 2. The evaluation of the candidates' realised product in Unit 3 must relate to the product developed in Unit 2.*

*Full details of the internal assessment objectives for internally assessed work can be found in Section 7.*

The product can be linked to a candidate's own interests, industrial practice or the community. Projects may involve an enterprise activity, where candidates identify an opportunity, design to meet a need, manufacture products and evaluate the whole design and make process.

Candidates must use appropriate ICT to help with their work, including computer-aided design and manufacture (CAD/CAM) software, control programs, data analysis and ICT based sources for research.

Through their project, candidates must consider how relevant technology affects society and their own lives.

The evidence required to be submitted for this project must include a 3 dimensional product with a concise portfolio and/or appropriate ICT evidence. *The whole activity should not exceed 20 to 25 hours of work.*

If candidates work in groups, each candidate must take responsibility for a uniquely definable aspect of the overall project and undertake unique *analysis*, product design, manufacture and evaluation of that project aspect. Each candidate must provide unique evidence for assessment against the six internal assessment objectives with additional evidence in internal assessment objective 6 (evaluation and testing) to indicate the performance of the candidate's design within the context of the performance of the overall project.

Examples of appropriate tasks are given in Section 6.

Full details of the Internal Assessment Objectives for internally assessed work can be found in Section 7.

#### **4.5 ASSESSMENT OF ICT**

The assessment of this course requires candidates to use ICT through preparing, presenting, and reviewing information as they work on their *analysis and* design ideas. They can also use ICT to develop models that communicate these ideas, and make products using computer-aided manufacture (CAM).

#### **4.6 DIFFERENTIATION**

Differentiation will be achieved by task and outcome in the Internal Assessment. The internal assessment tasks undertaken by each candidate should reflect their capabilities. Exemplar tasks will be available. (See Section 6).

## 4.7 AWARDING OF GRADES

*There will be three levels of award: Entry 1, Entry 2 and Entry 3, where Entry 3 is the highest outcome.*

*A candidate's mark for each of the three units of coursework will be combined to give the candidate's total mark for the specification. The candidate's award will be determined by this total mark.*

## 4.8 GRADE DESCRIPTIONS

Grade descriptions are provided to give a general indication of the standards of achievement likely to have been shown by the candidates awarded particular levels. The descriptions must be interpreted in relation to the content specified in Section 5; they are not designed to define that content. The grade awarded will depend in practice upon the extent to which the candidate has met the overall assessment objectives. Shortcomings in some aspects of the assessment may be balanced by better performance in others.

### **Entry 1**

*When investigating products, candidates show some consideration of the situation of the intended users that has led to the design brief. They identify the intended use of the product and list some basic requirements that the product meets. They identify some of the materials and methods of manufacture and communicate using pictures and words.*

*When designing and making, candidates contribute a simple idea related to a specific task and, with frequent prompting use basic skills and techniques appropriate to the task producing evidence of simple modelling and making which will probably be incomplete and will be of a low standard. They show limited understanding of safe working practices and offer very limited relevant but unsupported evaluation of their work.*

### **Entry 2**

*When investigating products, candidates consider both the situation and the intended users of a marketed product. The intended use of the product is examined, some functions identified and they provide a limited description of how it works. They produce a limited brief for the product and identify some key points of its specification along with most materials, components, finishes and production methods identified. There will be some evidence relating to quantity manufacture. Presented outcome and communication will be through a limited number of techniques.*

*When designing and making, candidates will contribute two alternative ideas related to a specific task, offer limited evaluation of these ideas and probably no valid reasons for the choice of either. There will be simple but poor quality modelling presented and, with guidance, candidates will use basic skills and techniques appropriate to the task. There is likely to be some evidence of prompted planning. They will have a reasonable understanding of safe working practices and their presented outcome will be mainly complete.*

*There will be some relevant and supported evaluation of their work with reference to the given specification/criteria and a simple review of materials used.*

### **Entry 3**

*When investigating products candidates will provide a brief description of both the situation and the needs of the intended users along with most details of its intended use and fairly clear description of how it works. There will be a clear design brief and details of a specification that it meets including some reference to quantity manufacturing requirements. Communication will be through several techniques and be of a reasonable standard.*

*When designing and making, candidates will propose several ideas related to a specific task, they will (with help) evaluate these ideas and give simple reasons for their choice. There will be evidence of a contribution to planning, a reasonable standard of modelling, and with guidance, they will have used a range of skills and techniques appropriate to the task. The outcome will be of a reasonable standard, will be mainly complete and they will have worked safely most of the time (without much prompting). They will have evaluated their outcome against the given specification and will offer comments related to function, use of their time, the materials and processes used.*



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## SECTION C: SPECIFICATION CONTENT

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### 5 Specification Content

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During the key stage, candidates should be taught the knowledge, skills and understanding through: (N.C. order reference paragraph number).

- product analysis (6a);
- focused practical tasks that develop a range of techniques, skills, processes and knowledge (6b);
- design and make assignments, which include activities related to industrial practices and the application of systems and control (6c).

This section is set out in column format to help teachers relate the requirements of the specification content with experiences that would be applicable.

Design and Technology, by its very nature, is continually developing. Teachers should be aware of new developments when preparing candidates for this examination.

*The subject content is included to help teachers structure their schemes of work and to define areas that will be assessed through coursework. It should be noted that only the content relevant to the chosen coursework task(s) will be assessed by OCR. It is however intended that teachers should use the content as a means of defining the breadth and depth delivered through their scheme of work and as an indicator that they are covering the Programme of Study for Design and Technology.*

*The specification is fundamentally designed to assess a candidate's capability at the end of KS4. It does, however, recognise that appropriate experiences at KS3 are essential if a candidate is to realise his/her full potential and that some candidates may be working to Key Stage 3 Programmes of Study. The specification content is therefore cross referenced with both KS4 and KS3 Programmes of Study.*

## 5.1 DESIGNING AND MAKING

### 5.1.1 Developing and Writing a Design Brief (1a, 1a)

#### Candidates should be able to:

#### Range of activities:

(KS4 NC order reference paragraph number, *KS3 NC order ref.* paragraph number *in italics*)

- |   |   |
|---|---|
| (a) provide <i>information on</i> the design need using various means of communication;<br>(1e)       | text, drawings, photographs, graphs, media clippings, word processing, scanning.                |
| (b) extract from verbal, and visual information the essential problems <i>that have</i> to be solved; | consideration of information, food trends, consumer preference, dietary needs, media influence. |
| (c) identify the range of users and the market for which the product is intended;<br>(1b)             | questionnaires, surveys, influences of trends, potential market possibilities.                  |
| (d) develop a design brief for a <i>marketed</i> product.   | a clear statement of design intention.  |

## 5.1.2 Drawing up a Specification for a Manufactured Product

### Candidates should be able to:

- (a) examine the intended purpose of the product;
- (b) identify and collect data relevant to the product(s) and its users; (1b)
- (c) consider issues that affect planning;
- (d) identify and evaluate how existing products fulfil the needs of their intended users;
- (e) demonstrate an ability to express the results of research and analysis in the form of a suitable detailed specification;
- (f) consider the capability required to manufacture in quantity. (1c)

### Range of activities:

- observation, consideration of existing products past and present, for example, spider diagram (star chart).
- nutritional value, cost, suitability for different groups of people, packaging, HACCP, labelling, commercial methods of production, British and European standards, for example, ISO, BS, 'e' mark.
- appropriate environmental *and monetary* costs.
- market and product analysis, *market surveys*, in relationship *to moral, social, economic, environmental and cultural* factors, use of CD ROMS, *spreadsheets, digital cameras*.
- a written specification, word processing.
- consideration of possible systems that would control production.

### 5.1.3 *Contribute to Generating Design Proposals*

#### **Candidates should be able to:**

- (a) generate and record a range of design proposals; (1c, 1d)
- (b) identify within those proposals the resources needed for the solution to be realised; (1e)
- (c) evaluate their ideas against the specification and modify where necessary; (3a)
- (d) consider whether ideas meet the original need; (3a)
- (e) understand the relevance of function and aesthetics; (1e)
- (f) identify, with reasons for selection/rejection, the chosen design proposal (s) for product development;
- (g) use graphic techniques and ICT, including computer-aided design (CAD), to generate, develop, model and communicate design proposal. (1g, 1h)

#### **Range of activities:**

- ideas recorded in a combination of text and graphic techniques.
- materials, constructions and processes.
- annotated comments about ideas.
- simple reference to the need.
- consider how it could work and whether it would look pleasing.
- evidence to support choice and reasons for rejection.
- solutions recorded using a selection of text, simple graphical techniques and computer images, for example, clip art.*

### 5.1.4 *Contribute to Product Development*

#### Candidates should be able to:

- (a) conduct testing or trailing to make decisions on materials, production processes and selection of pre-manufactured standard components;
- (b) match materials and components with tools, equipment and processes when deciding how to manufacture;  
(1e) (2a)
- (c) simulate production by developing a system to control the manufacture of a product individually and/or in batch quality;  
(2e)
- (d) be flexible and adaptable in responding to changing circumstances and new opportunities;  
(1f)
- (e) use graphic techniques and ICT, including computer-aided design (CAD), to generate, develop, model and communicate design proposal.  
(1g) (1h)

#### Range of activities:

- the chosen idea refined, tested and improved. A list of materials is made and the order of work is clearly stated, including tools and equipment required.
- develop a detailed final product specification.
- suggested method of production, include information about the use of additives and components HACCP.
- adjusting and modifying parts of the design if required.
- simple graphical techniques and computer aided design (CAD) used to generate and communicate design proposals.

### 5.1.5 *Product Planning*

#### Candidates should be able to:

- (a) produce and use a plan of work including:
- manufactured items;
  - materials;
  - equipment;
  - tools and processes;
  - consideration of health and safety issues against a realistic time schedule.  
(1d) (3b) (1g)
- (b) prepare materials economically allowing for waste and fine finish and use pre-manufactured standard components appropriately.

#### Range of activities:

- a proposed work plan which sets realistic deadlines.
- efficient material preparation.

## 5.1.6 Tools and Equipment

**Candidates should be able to use a range of tools, equipment and processes effectively and safely, including:**

**(2a)**

- (a) measure/weigh basic ingredients;  
(4a)
- (b) mix ingredients in the appropriate way;
- (c) cut ingredients in an appropriate way;  
(2a)
- (d) shape and form foodstuffs;
- (e) apply correct heating/cooling processes;
- (f) apply a range of graphic media as appropriate to marketing, presentation and packaging of food products.

**Range of activities**

- work in Metric units.
- hand methods, hand held mixer/blender  
food processors/mixers/blenders.
- hand methods, pastry cutter.
- hand methods, cutters, moulds, burger  
press.
- ovens, hobs, microwaves, freezers,  
refrigerators.
- a range of pencils, crayons, computer  
images, text and photographs, *digital  
camera, scanner.*

## 5.1.7 Processes

**Candidates should be able to: (4b)**

apply a range of processing techniques to produce food products;

understand methods used to increase shelf life;

show an awareness of processes and equipment as used in an industrial context;

apply finishing techniques.

**Range of activities**

- to assemble the food products.
- heat tranference through appropriate methods of cooking. Boiling, baking, grilling, microwaving, *steaming, frying, roasting.*
- freezing, chilling, pickling, jamming, heat, UHT, canning.
- control systems, industrial processes and equipment.
- decoration, glazing.

## 5.1.8 ICT Applications

### Candidates should:

- (a) *have an awareness of* how CAD/CAM is used in industrial manufacturing;
- (b) recognise that computer systems can control machines and equipment; (2d)

### Range of activities;

- books, videos etc, industrial visits.  
links with neighbourhood engineers.
- robotics used in production lines, for example, for placing lids on pies.

### Candidates should use ICT where appropriate to:

- (c) desk top publish; combine written information and graphics, *use* a questionnaire.
- (d) produce bar charts, pie charts, flowcharts from data; present results in a graphical form.
- (e) produce graphics; use a paint or draw program to produce original art work including line, texture, colour.
- (f) mould and size text, and/or graphics to suit requirements; produce text in appropriate styles and sizes for presentation and advertising/packaging.
- (g) aid Design and Technology activities; use ICT appropriately to handle, model or communicate design proposals:
  - (i) research from a database, use the internet; nutritional programs, recipe databases;
  - (ii) present data in the form of tables, charts or graphics;
  - (iii) *use a spreadsheet for costing/modelling;*
  - (iv) *use e-mail to distribute questionnaires.*
- (h) utilise CAD. (1g) create and manipulate a range of 2D/3D images, producing accurate drawings, use scanners, digital cameras, *use of clip art.*

## 5.1.9 Industrial Applications

### Candidates should be able to

### Range of activities:

(a) **understand the following commercial production methods:**

job production;

(2b) (2d)

understand that this involves producing 'one off' products. Every item produced is different. It is labour intensive.

batch production.

(2c) (2d)

understand that this involves the production of a specified quantity of a product. Batches can be repeated as many times as required. This type of production method is flexible and can be used to produce batches of similar products with only a small change to the tooling, for example, using templates and jigs.

(b) **understand the packaging, marketing, and advertising implications of a product;**

information about the product, consumer preference, *labelling*, storage, *cultural and European influences*.

understand that printed advertisements and point of sale displays are designed to:

- (i) inform people about the product;
- (ii) influence, persuade and encourage people to buy a company's products rather than someone else's.

(c) **understand that control is a necessary part of production and marketing.**

(2c)

procedures to ensure a quality product, *for example, checking system in a production line*.

*awareness* that quality control helps to ensure that the customer is satisfied with a product.

understand that a product should meet the criteria listed in the specification.

## 5.1.10 Good Working Practice

**Candidates should be able to:**

**Make effective use of available resources to:**

(a) produce process and block diagrams;

(b) produce time plans and work schedules; (1d)(1f)

(c) carry out testing, evaluation and modification of products. (3b) (3b)

**Range of activities:**

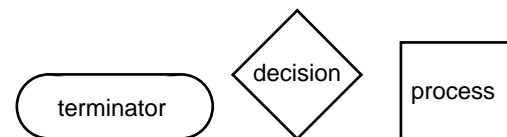
**When planning their work candidates should be able to:**

identify available materials, components, equipment and facilities;

establish an order for work;

organise their work to maximise the use of available time and resources.

produce time plans, flow charts and the use of appropriate software.



simple trialling of products;  
results collected, analysed and relevant modifications made.

## 5.1.11 Product Evaluation

### Candidates should be able to:

- (a) review their work at critical points and apply quality assurance techniques;  
(3b) (3a)
- (b) evaluate the proposed product against:
- (i) its fitness for purpose;
  - (ii) the design need;
  - (iii) the needs of the intended user(s). (3c) (3c)
- (c) evaluate the proposed product against moral, cultural and environmental issues for the intended user;
- (d) review whether they have used materials and resources appropriately;
- (e) carry out testing, resulting in conclusions that suggest necessary modifications, *and review* the performance of the manufacturing control system. (3b)

### Range of activities:

- regular checks to ensure quality outcome.
- critical evaluation related to initial specification and use of resources.
- sustainable sources of material supply and recycling of redundant products.
- testing with meaningful conclusions.
- proposal for further development, suggest modifications or improvements to:
- recipe;
  - product.

## 5.2 KNOWLEDGE AND UNDERSTANDING

### 5.2.1 Materials and Pre-manufactured Standard Components

(4a, 4b, 4c 4d 4e) (4a, 4b, 4c 4d 4e)

Candidates should, whilst working with food, explore food as a material, knowing and understanding the following:

- the composition, structure and properties of food as a material;
- the basic characteristics of food; colour, taste, texture, smell;
- the nutrients found in and the structure of a range of common foods, including cereals, fruit, vegetables, meat, fish, cheese, fats and oils, milk and eggs;
- the relationship between the composition, structure, characteristics and properties of food and the way in which it is prepared, cooked, served, stored, processed and preserved;
- the way in which the composition of food, gives food its characteristics and working properties, for example, to thicken, to set, to aerate, to coagulate, by altering the amounts and/or constituent foods in a recipe;
- *factors that affect food, i.e. heat, cold, the removal of moisture, acids, alkali, oxidation, enzymes, yeasts, moulds, bacteria, additives, preservatives;*
- how modern or 'smart' food materials i.e. modified enzymes, starches, antioxidants, genetically engineered foods, synthetic flavours are used to provide certain properties in food products i.e. using starches that are chemically modified to set at high temperature and then become fluid again at low temperature;
- investigation of food products aimed at different groups of people with different dietary requirements, for example, vegetarians, diabetics, coeliacs, calorie controlled, those with allergies;
- other factors that affect people's choice of food, for example, availability, cost, personal preferences, cultural preferences, lifestyle, health, storage and cooking facilities, recent food trends and issues, for example, BSE, listeria, *Escherichia coli*.

Candidates should explore the use of components. For example:

- frozen pastry (for example, shortcrust, filo, puff);
- decorations (vermicelli, ready-made icing, marzipan);
- ready-made pie fillings;
- canned or dried sauces, soups etc;
- pizza bases;
- appropriate materials used in packaging.

## 5.2.2 Systems and Control

(5a) (5a, 5c, 5d)

Candidates should develop a *basic* understanding of control systems, to include:

- know that a system has three elements, input, process and output; i.e. raw materials – making the product – packaged final product. Time schedules, flow charts, time charts;
- know the importance of feedback to their own system, for example, weight and mix control, environmental health; temperature control, control by thermostats/sensors. Shelf life and storage, time control;
- an understanding of the use of control systems; Hazard Analysis and Critical Control Points (HACCP);
- an analysis of the effectiveness of the performance of the system i.e. consumer feedback.

## 5.2.3 Products and Applications

(6a)

Candidates should be able to carry out a product analysis of *a commercially manufactured product and its application*. The process should include the following:

- suitability of the product and its intended market, i.e. different age groups /specialist diets, lifestyle demands;
- an understanding of the choice of materials and components, for example, the reason for yeast in a dough mix;
- what processes have already been carried out, and the scientific reasons behind them, for example, blanching of frozen vegetables.

## 5.2.4 Quality

(2c, 3d, 3c)

Candidates should understand how to distinguish between quality of design and quality of manufacture by drawing on their experience and understanding of existing products and applications including:

- the evaluation and testing of a food product considering its fitness for purpose, appropriate use of resources and its method of production;
- quality control and quality assurance;
- the impact of food packaging on the environment i.e. re-cycling possibilities, bio-degradable materials;
- safe shelf life for a food product, data stamping, storage temperature;
- its social and aesthetic implications, the impact of the quality of the presentation/ packaging for the intended market.

### 5.2.5 Health and Safety

(2a)

Candidates should understand health and safety as designers, manufacturers and consumers.

Candidates should be able to:

- use a range of tools and equipment in a safe and efficient manner;
- understand the need to consider risk assessment and safety information;
- understand the importance of safe and hygienic practices in the preparation, cooking, transportation and storage of foodstuffs.
- understand the need to consider:
  - (i) the reduction in the common use of chemicals dangerous to the environment  
i.e. bleaches, CFC's, toxic metals;
  - (ii) the need to dispose of redundant products in a safe and environmentally friendly way.



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## SECTION D: COURSEWORK

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### 6 Coursework

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#### 6.1 NATURE OF COURSEWORK PROJECT

*Candidates are required to use and study a simple manufactured and marketed food technology product and then design and make a food technology product.*

This project requires a design and make activity related to industrial/commercial practices, and the appropriate application of systems and control.

The evidence required to be submitted for assessment must include a 3 dimensional product with a concise portfolio (including evidence of modelling) and/or appropriate ICT evidence. Centres are reminded that ICT evidence must address the requirements of the six Internal Assessment Objectives. Evidence that does not lead to a finished product can be assessed if it is felt that it represents work appropriate to the focus of the project.

*This project will be assessed against the following six Internal Assessment Objectives, which are divided into three units:*

#### Unit 1

- 1 identify a need or opportunity that *has* led to a design brief for a marketed product;
- 2 study of a manufactured product which results in the identification of specification points;
- 3 study of a manufactured product which results in the identification and communication of simple design decisions that may have influenced the product development.

*(Candidates must use and study a simple manufactured food technology product. The chosen product must have been commercially produced to satisfy a need within the chosen context. The context should be one of those provided by OCR in the Exemplar Coursework Tasks given below).*

#### Unit 2

- 4 from a design brief and specification generate possible ideas that contribute to a solution;
- 5 contribute to developing and realising the product;

#### Unit 3

- 6 evaluate and test the product.

Candidates or teachers must approach Units 2 and 3 from any of the routes given below:

- 1 *the three units are linked by a single product focus resulting in a 3 dimensional product with a concise portfolio and/or appropriate ICT evidence;*
- 2 *Units 1 and 2 have the same task and context but have a different product focus;*
- 3 *Units 1 and 2 have a different task, context and product focus enabling candidates to make a fresh start in Unit 2. The evaluation of the candidate's realised product in Unit 3 must relate to the product developed in Unit 2.*

It is envisaged that the coursework project presented for assessment will represent 20 to 25 hours of work for the *Entry Level Certificate* course. Some of the work, by its very nature, may be undertaken outside school, for example, research work, testing etc.

## 6.2 EXEMPLAR COURSEWORK TASKS

Candidates *or teachers* may select one of the following statements as a starting point for the coursework project. Through investigating the statement, candidates (or candidates with the help of teachers) can *develop the task as a starting point for their coursework project* based on their interests and ability.

It is not compulsory to select a task from this list *but approval should be sought from OCR should the candidate or teacher wish to write their own task*. OCR Coursework Consultants are available for advice if required.

- 1 A large supermarket chain has found that many people today have special dietary requirements whose needs are not always met in the range of products they offer.
- 2 A number of people today buy food products according to their ethnic or moral beliefs. Investigate.
- 3 The market for between-meal snacks grows continually. A food manufacturer is keen to meet this demand.
- 4 Many food manufacturers have responded to the demand made by returning holiday makers by developing a range of food products from different cultures. Investigate.
- 5 Many nutritionalists are concerned how little fruit and vegetables are eaten today. Investigate.
- 6 As concern about the health of the nation increases, supermarket chains have responded by selling healthier food products. Research shows that many people still continue to eat food products that do not always meet the current dietary recommendations.
- 7 Many people celebrate special occasions. Food manufacturers are always keen for new ideas to increase their sales of novelty foods.
- 8 Staple foods form important basis for many food products. Food manufacturers are always keen for new ideas to increase their sales of food products made from staple foods.
- 9 As family lifestyles and eating patterns continually change, food manufacturers have responded by developing a range of 'ready to eat' food products.
- 10 Milk, eggs and cheese form important ingredients for many food products. Food manufacturers are always keen for new ideas to increase their sales of food products made from these protein foods.
- 11 Because of changes in our society there is now an increasing demand for 'single portion' food products. A supermarket chain is keen to respond to this situation.
- 12 The market for microwavable food products grows continually. A food manufacturer is keen to meet this demand.
- 13 For food manufacturers producing cakes, biscuits and pastries to maintain their competitiveness they have to have to update continually their image and find ways of meeting the changing needs of their customers.
- 14 The market for desserts grows continually. A food manufacturer is keen to meet this demand.

### 6.3 EXPANSION OF AN 'EXEMPLAR COURSEWORK TASK'

**Task:** A food manufacturer producing pasta food products had noted a fall in sales. The marketing division has asked you to address the problem by developing a new pasta product for an identified section of the community.

*(Teacher or candidate(s) to select a commercially produced food product for analysis).*

**Internal Assessment Objective 1:** (Product focus: Cook/chill lasagne suitable for 2 people)

**Identification of a need or opportunity that has led to a design brief for a marketed product.**

- *Where would the product be bought?*
- *Who might buy the product?*
- *Why might people decide to buy the product?*
- *Write a design brief that the product would satisfy.*

**Internal Assessment Objective 2**

**Study of a manufactured product which results in the identification of specification points that the product meets.**

- *What is a cook/chilled meal?*
- *What is the intended purpose of the product?*
- *Would the product be served on its own or have something added?*
- *What ingredients have been used in the product?*
- *How should the product be stored / cooked / reheated?*
- *Do you think the product is suitably priced?*
- *What other information is given on the package about the product?*
- *Write a specification that the food product would satisfy.*

### Internal Assessment Objective 3

**Study of a manufactured product, which results in the identification and communication of simple design decisions that may have influenced the product development.**

- *The product can be cooked, tasted and evaluated.*
- *What is the purpose of the ingredients in the product?*
- *How has the product been put together?*
- *How has the product been finished?*
- *What production methods would have been used in the manufacture of the product?*
- *What safety and hygiene rules might have been followed when manufacturing the product?*
- *How has the product been packaged?*
- *Why have certain safety decisions been made?*

### Internal Assessment Objective 4

**From a given design brief and specification generate possible ideas that contribute to a solution;**

*(the design brief and specification could be provided by the teacher to help provide a focus for the development of the product and the evaluation)*

*Candidates could:*

- *Propose some ideas for your food product.*
- *Choose the most suitable idea and give reasons.*
- *Propose some ideas for a logo / package.*
- *Evaluate each logo / package idea against a specification (this could be supplied by the teacher).*

### Internal Assessment Objective 5

**Contribute to product planning and realisation**

- *Plan the practical work.*
- *Trial and test ideas (at least 2) plus one final product.*
- *List the ingredients which will be required each time.*
- *List the equipment which will be required each time.*
- *Demonstrate a range of skills whilst making.*
- *Show you can work safely and accurately.*
- *Evaluate each food product made against the specification and include a list of improvements.*
- *Draw up a flow chart to show how to make the final food product.*
- *Produce a final quality food product.*
- *Include a final logo / package model.*

## Internal Assessment Objective 6

### ***Evaluation and product testing.***

- *Test your final product, ask other people's opinions.*
- *Does your final product match the specification?*
- *Why do you like the final product?*
- *Did you use suitable ingredients?*
- *What improvements could you make to your final product?*
- *Did you use your time well?*
- *What safety and hygiene rules did you follow?*
- *Photographic evidence of final food product.*

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## 7 Regulations for Internal Assessment

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### 7.1 SUPERVISION AND AUTHENTICATION OF COURSEWORK PROJECTS

OCR expects teachers to supervise and guide candidates who are undertaking work which is internally assessed (for example, coursework project). The degree of teacher guidance in candidates' work will vary according to the work being undertaken *and the ability of the candidate*.

When supervising internally assessed coursework projects, teachers are expected to:

- Offer candidates advice about how best to approach their work;
- *Provide support, advice and guidance to enable the candidate to access the specification appropriately;*
- Exercise continuing supervision of work in order to monitor progress;
- Ensure that the work is completed in accordance with the specification requirements and can be assessed in accordance with the internal assessment objectives and procedures.

Internally assessed coursework projects should be completed in the course of normal curriculum time and marked by the teacher. Some of the work, by its very nature, may be undertaken outside the Centre, for example, research work, testing etc. The teacher must be satisfied that the marks awarded reflect the candidate's contribution.

### 7.2 PRODUCTION AND PRESENTATION OF INTERNALLY ASSESSED COURSEWORK PROJECT

Candidates must observe certain procedures in the production of internally assessed work.

- Any copied material must be suitably acknowledged.
- Quotations must be clearly marked and a reference provided wherever possible.
- Work submitted for moderation must be marked with the:
  - Centre number
  - Centre name
  - Candidate Number
  - Candidate Name
  - Specification title and code:
    - i.e: OCR Entry Level Certificate in Design and Technology  
(Food Technology) (3960)
  - Coursework project title.

### 7.3 MINIMUM REQUIREMENTS FOR INTERNALLY ASSESSED WORK

There should be clear evidence that work has been attempted and some work produced.

If a candidate submits no work for an internally assessed component, then the candidate should be indicated as being absent from that component on the mark sheets submitted to OCR. If a candidate completes any work at all for an internally assessed component then the work should be assessed according to the internal assessment objectives and marking instructions and the appropriate mark awarded, which may be zero.

### 7.4 MARKING CRITERIA FOR INTERNALLY ASSESSED WORK

This specification requires candidates to demonstrate fully their design and technology capability. They should combine skills with knowledge and understanding in order to design and make quality products.

The Assessment Objectives:

- of materials, components, processes, techniques and industrial practice (*Unit 1*);
- for designing and making quality products (*Unit 2*);
- for evaluating processes and products and examining the wider effects of design and technology on society (*Unit 3*).

are assessed through the six **Internal Assessment Objectives** shown below.

| Coursework Assessment Objectives  | Marks      |           |
|---|------------|-----------|
|   | Designing  | Making    |
| <b>Unit 1</b>   |            |           |
| 1. <i>Identification of a need or opportunity that has led to a Design Brief for a marketed product</i>   | 4          | 0         |
| 2. <i>Study of a manufactured product which results in the identification of specification points that the product meets</i>  | 12         | 0         |
| 3. <i>Study of a manufactured product, which results in the identification and communication of simple design decisions that may have influenced the product development.</i> | 10         | 0         |
| <b>Unit 2</b>   |            |           |
| 4. <i>Generation and communication of design ideas that contribute to a solution</i>  | 14         | 0         |
| 5. <i>Contribution to product planning, modelling and realisation</i>   | 0          | 52        |
| <b>Unit 3</b>   |            |           |
| 6. <i>Evaluation of the realised product</i>  | 0          | 8         |
| <b>Total Marks</b>  | <b>40</b>  | <b>60</b> |
| <b>Total Coursework Marks</b>   | <b>100</b> |           |

The weighting of the marks provides an indicator of the time that candidates should spend on each part of the project.

It is envisaged that the coursework project presented for assessment will represent 20 to 25 hours work. Some of the work, by its very nature, may be undertaken outside school, for example, research work, testing etc.

### 7.4.1 Guidance for Teachers

It is appreciated that for assessment purposes, the Internal Assessment Objectives have been written in a linear form. However, within focus areas of Design and Technology, some stages may interrelate and be cyclical in approach.

This specification requires candidates *to use and study a simple manufactured and marketed food technology product and then design and make their own food technology product.*

The type of project selected should be challenging, but realistic in terms of resources and time available.

*In the product analysis required in Unit 1 candidates are actively encouraged to think about the needs/requirements of the user group and the situation the product would be used in and then extend their understanding of the situation and the product by collecting, documenting and analysing relevant information and data about the product.*

Candidates should be encouraged to use ICT where appropriate. Digital cameras, scanned and down loaded images, internet and CD-ROM access, *data processing* can all provide opportunities for candidates to document information.

*A resulting design brief and specification should take into account the users and the way in which the product may have been developed.*

*It will be helpful if at the beginning of Unit 2 a clear design brief and specification is established either by the Centre or the candidate, to enable candidates to focus their own product design, realisation and evaluation.*

Quick initial design sketches can be developed. Annotation can provide additional details about possible solutions. The final design selection needs to be discussed and justified against the original design specification. Where appropriate, candidates should consider the use of ‘smart’ and modern materials.

During the product development, candidates need to develop their idea towards a final product. They test materials, production methods and surface finishes. The results need to be recorded and decisions justified. Exact sizes and shapes of components are established. 3D modelling tools can create realistic representation of the finished product. Candidates may contribute to designing and making a simple device such as a jig, former or template that can be used as part of a system to maintain consistency during the manufacture of their product. The success of this device can be assessed during the evaluation report.

Prior to realisation, candidates need to *contribute to a* plan that considers the order of manufacture, the processes, tools and equipment to be used. Time plans help to keep the candidate on target. Using a range of skills and techniques, candidates are expected to make a quality product that meets the requirements of the design specification.

The evaluation report provides the opportunity for the candidate to analyse the outcome against the original specification and whether they have used the correct materials, equipment etc. *Simple* product testing will establish the success of the product and consumer/user group opinions will inform suitable modifications and further product development.

#### **7.4.2 Applying the Internal Assessment Objectives to Candidates’ Work**

Each internal assessment objective has a number of ‘level of response’ boxes containing hierarchical statements. Initially a ‘best fit’ should be established and the mark awarded within the appropriate mark range.

The marks have been broken down into ranges of marks for the hierarchical statements within each level of response box. A candidate should have a mark against each strand in the level of response boxes depending upon the level they have reached.

This breakdown enables positive marking of a coursework project by allowing the teacher to match statements from any of the level of response boxes against the evidence offered by the candidate. This approach can be applied to each assessment objective using the marks in brackets [ ] as indicated.

For example when marking internal Assessment Objective 5, a project may reflect:

|  |  |             |
|--|--|-------------|
| <b>Planning</b>                              | <i>'Some record of activity undertaken'</i>  | [3]         |
| <b>Modelling</b>                             | <i>'Simple, poor quality modelling presented but complete'</i>   | [8]         |
| <b>Skills, techniques, health and safety</b> | <i>With some guidance has used a range of skills and techniques appropriate to the task. Worked safely most of the time.</i> | [13]        |
| <b>Outcome</b>                               | <i>The outcome will be of a reasonable standard and will be mainly complete.</i>   | [13]        |
|  | <b>Total</b>   | <b>[37]</b> |

*This candidate has a mark against each of the elements, planning, modelling, skills and techniques and product outcome.*

*The candidate has evidently produced some record of the making of the product although it has probably not been forward planning.*

*Some modelling has been presented and although of poor quality it was completed and presented for assessment.*

*With some guidance from the teacher the candidate has successfully used a range of skills and techniques and has worked safely.*

*The outcome was complete and of a reasonable standard.*

## EXEMPLAR MARKING

### Internal Assessment Objective 5

Total Marks: 52

| <i>Contribution to Product Planning, Modelling and Realisation</i>   | Level of Response  | Mark Range   |
|--|--|--|
| <p><i>Planning</i></p> <p><i>Modelling</i></p> <p><i>Skills, techniques, health and safety</i></p> <p><i>Outcome</i></p> | <p><i>Some record of activity undertaken</i></p> <p><i>Simple modelling of very poor quality and probably incomplete.</i></p> <p>With frequent prompting uses basic skills and techniques appropriate to the task. Little understanding of safe working practices.</p> <p><i>The outcome will be of a very low standard and will not be completed.</i></p>   | <p>(3)</p> <p>[3]</p> <p>0-12</p> <p>[3]</p> <p>[3]</p>      |
| <p><i>Planning</i></p> <p><i>Modelling</i></p> <p><i>Skills, techniques, health and safety</i></p> <p><i>Outcome</i></p> | <p><i>Evidence of some contribution to planning as a result of prompting.</i></p> <p><i>Simple, poor quality modelling presented but complete.</i></p> <p>With <b>guidance</b> has used <b>basic skills</b> and techniques appropriate to the task. <b>Reasonable</b> understanding of safe working procedures.</p> <p><i>The outcome will be of a low standard and will be mainly complete.</i></p> | <p>[8]</p> <p>(8)</p> <p>13-32</p> <p>[8]</p> <p>[8]</p>     |
| <p><i>Planning</i></p> <p><i>Modelling</i></p> <p><i>Skills, techniques, health and safety</i></p> <p><i>Outcome</i></p> | <p><i>Evidence of a contribution to planning.</i></p> <p><b>Reasonable</b> standard of modelling presented.</p> <p>With some guidance has used <b>a range of skills</b> and techniques appropriate to the task. Worked safely <b>most of the time</b>.</p> <p><i>The outcome will be of a reasonable standard and will be mainly complete.</i></p>   | <p>[13]</p> <p>[13]</p> <p>33-52</p> <p>(13)</p> <p>(13)</p> |
| <b>Total</b>   |  | <b>52</b>  |

**Internal Assessment Objective 1**

**Total Marks: 4**

*Identification of a need or opportunity that has led to a design brief for a marketed product.*

|   | Level of Response  | Mark Range        |
|---|--|-------------------|
| <p>Candidates will need to:</p> <ul style="list-style-type: none"> <li>• <i>communicate by simple means, a description of the situation where the product could be used, for example, text, drawings, graphs, photographs;</i></li> <li>• <i>identify the range and type of users for which the product is intended;</i></li> <li>• <i>write a design brief that the marketed product satisfies.</i></li> </ul> | <p><i><b>Some consideration</b> of the <b>situation</b> of the intended users that has led to a design brief.</i></p>                          | <p><b>0-2</b></p> |
|   | <p><i><b>Consideration</b> of both the <b>situation and the intended users</b> that results in a design brief of the marketed product.</i></p> | <p><b>3</b></p>   |
|   | <p><i><b>Description</b> of both the <b>situation and users</b> leading to a <b>clear</b> design brief of the marketed product.</i></p>        | <p><b>4</b></p>   |
| <b>Total</b>  | <b>4</b>   |                   |

| <i>Study of a manufactured product which results in the identification of specification points that the product meets.</i>   | Level of Response  | Mark Range                             |
|--|--|--|
| <p>Candidates will need to:</p> <ul style="list-style-type: none"> <li>• examine the intended purpose of the product;</li> <li>• identify data relevant to the product and its users, for example, dimensions;</li> <li>• <i>identify and evaluate how the existing product fulfils the needs of the intended users and describe, in simple terms, how the product works;</i></li> <li>• <i>list design specification points that the product meets including reference to manufacturing in quantity.</i></li> </ul> | <p><i>Intended use of existing product identified but no evaluation.</i></p> <p>A specification identifying some <b>basic</b> requirements.</p>  | <p>[2]      <b>0-4</b></p> <p>[2]</p>  |
|  | <p><i>Intended use of product examined with some functions identified, evaluated against the needs of the user and with a limited description of how it works.</i></p> <p>A specification identifying some <b>key features</b> including a suggestion of <b>how more than one has been made.</b></p> | <p>[4]      <b>5-8</b></p> <p>[4]</p>  |
|  | <p><i>Intended use of product examined with most functions identified, evaluated against the needs of the intended users and with a clear description of how it works.</i></p> <p>A specification containing some <b>reference to a system required to manufacture in quantity.</b></p>              | <p>[6]      <b>9-12</b></p> <p>[6]</p> |
| <b>Total</b>   | <b>12</b>  |  |

**Internal Assessment Objective 3**

**Total Marks: 10**

| <p><i>Study of a manufactured product which results in the identification and communication of simple design decisions that may have influenced the product development.</i></p>   | <p><b>Level of Response</b></p>  | <p><b>Mark Range</b></p>                            |
|--|--|---|
| <p>Candidates will need to:</p> <ul style="list-style-type: none"> <li>as a result of investigation and testing a manufactured product, make reasoned decisions about why:                             <ul style="list-style-type: none"> <li>materials</li> <li>production methods</li> <li>finishes</li> <li>components</li> </ul>                             were used in its manufacture. e.g. hinges, fastenings, appearance, scientific principles to ensure function, product aftercare and health and safety;</li> <li>identify and consider the product design opportunity and implications of quantity manufacture (simple examples only);</li> <li>present their findings using a combination of text, simple graphical techniques and computer images.</li> </ul> | <p><b>Some</b> materials and production methods identified.</p> <p><b>One design</b> opportunity given or <b>one</b> implication for quantity manufacturing.</p> <p>The work presented displays a <b>very low standard</b> of communication techniques.</p>  | <p>[1]</p> <p>[1]</p> <p>[1]</p> <p><b>0-3</b></p>  |
|  | <p>Evidence of investigation of the product with <b>most</b> materials, production methods, <b>finishes and components</b> identified.</p> <p><b>Some details</b> of design opportunities or <b>some</b> implications of quantity manufacture presented.</p> <p>Communication will be of a low standard using a <b>limited number</b> of techniques.</p>   | <p>[2]</p> <p>[2]</p> <p>[2]</p> <p><b>4-6</b></p>  |
|  | <p>Evidence of some testing of the product <b>in use</b> resulting in <b>some valid reasons</b> for the use of materials, production methods, finishes and components.</p> <p>Quantity manufacturing design features identified with some reference to the <b>manufacturing system and its control</b>.</p> <p>Communication will be of a <b>reasonable standard</b> using a limited number of techniques.</p> | <p>[3]</p> <p>[3]</p> <p>[4]</p> <p><b>7-10</b></p> |
| <p><b>Total</b></p>  |  | <p><b>10</b></p>                                    |

**Internal Assessment Objective 4**

**Total Marks: 14**

| <i>Generation and communication of design ideas that contribute to a solution.</i>  | <b>Level of Response</b>  | <b>Mark Range</b>  |
|---|---|--|
| <p><i>From a design brief and specification candidates will need to:</i></p> <ul style="list-style-type: none"> <li>• <i>propose design ideas to contribute to an overall design;</i></li> <li>• <i>evaluate design ideas against the specification;</i></li> </ul><br><ul style="list-style-type: none"> <li>• <i>consider whether ideas meet the need and its fitness for purpose;</i></li> <li>• <i>choose their most suitable idea;</i></li> <li>• <i>present design ideas simply using appropriate methods of communication, for example, text, graphical, computer techniques.</i></li> </ul> | <p><b>One idea proposed.</b><br/> <i>Some evaluation of the idea.</i><br/>                     The work presented displays a <b>very low standard</b> of communication techniques.</p>  | <p>[1]<br/>                     [1]     <b>0-3</b><br/>                     [1]</p>  |
|   | <p><b>Two ideas proposed.</b><br/> <i>A limited evaluation of their ideas with one reason given for their choice.</i><br/>                     Communication will be of a <b>low standard</b> using a <b>limited number of techniques</b>.</p>              | <p>[2]<br/>                     [3]     <b>4-8</b><br/>                     [3]</p>  |
|   | <p><b>Two or more ideas proposed.</b><br/> <i>An evaluation of ideas leading to reasons being given for choice of idea.</i><br/>                     Communication will be of a <b>reasonable standard</b> using a <b>limited number of techniques</b>.</p> | <p>[4]<br/>                     [5]     <b>9-14</b><br/>                     [5]</p> |
| <b>Total</b>  | <b>14</b>   |  |

| <b><i>Contribution to Product Planning, Modelling and Realisation</i></b>  | <b>Level of Response</b>  | <b>Mark Range</b>   |
|--|---|---|
| <p>Candidates will need to:</p> <ul style="list-style-type: none"> <li>• <i>contribute to a plan of action from the following:</i><br/>materials, manufactured items, equipment, and processes against an order of work;</li> <li>• <i>use modelling to help ensure the product will be fit for its purpose;</i></li> <li>• complete an <i>outcome</i> suitable for the intended user or users;</li> </ul> | <p><b><i>Some record of activity undertaken.</i></b><br/><i>Simple modelling of very poor quality and probably incomplete.</i></p> <p>With <b>frequent prompting</b> uses basic <b>skills and techniques</b> appropriate to the task.<br/><b>Little</b> understanding of safe working practices.<br/><i>The outcome will be of a very low standard and will not be completed.</i></p>                 | <p>[3]</p> <p>[3]</p> <p><b>0-12</b></p> <p>[3]</p> <p>[3]</p>      |
| <ul style="list-style-type: none"> <li>• use tools and equipment accurately safely and effectively;</li> <li>• be prepared to adapt working procedures in response to changing circumstances;</li> </ul>   | <p><i>Evidence of some contribution to planning as a result of prompting.</i></p> <p><i>Simple, poor quality modelling presented but complete.</i></p> <p>With <b>guidance</b> has used <b>basic skills and techniques</b> appropriate to the task.<br/><b>Reasonable</b> understanding of safe working procedures.<br/><i>The outcome will be of a low standard and will be mainly complete.</i></p> | <p>[8]</p> <p>[8]</p> <p><b>13-32</b></p> <p>[8]</p> <p>[8]</p>     |
| <ul style="list-style-type: none"> <li>• use a range of skills and techniques appropriate to the task.</li> </ul>  | <p><i>Evidence of a contribution to planning.</i></p> <p><b>Reasonable</b> standard of modelling presented.</p> <p>With <b>some guidance</b> has used <b>a range of skills and techniques</b> appropriate to the task. Worked safely <b>most of the time</b>.<br/><i>The outcome will be of a reasonable standard and will be mainly complete.</i></p>  | <p>[13]</p> <p>[13]</p> <p><b>33-52</b></p> <p>[13]</p> <p>[13]</p> |
| <b>Total</b>   |   | <b>52</b>   |

| <i>Evaluation of the realised product.</i>  | Level of Response   | Mark Range  |
|---|---|---|
| Candidates will need to: <ul style="list-style-type: none"> <li>• <i>use the product for its intended purpose to test its suitability;</i></li> <li>• evaluate the <i>product</i> against its fitness for purpose and original need;</li> <li>• review whether resources have been used appropriately; for example, time, materials and processes;</li> </ul> | <p><b>Some reference to the materials used.</b></p> <p><b>Minimal evidence of using the product with unsupported comment</b> relating to the given specification/criteria.</p>  | <p>[1]</p> <p style="text-align: center;"><b>0-2</b></p> <p>[1]</p> |
|   | <p><i>Simple review of materials used.</i></p> <p><b>Limited evidence of using the product to test its suitability leading to:</b></p> <p>Some <b>relevant</b> and <b>supported</b> comment with reference to the given specification/criteria.</p>   | <p>[2]</p> <p style="text-align: center;"><b>3-5</b></p> <p>[3]</p> |
|   | <p><b>Comments upon the use of their time, materials and the processes used.</b></p> <p><b>Clear evidence of the use of the product to test its suitability leading to:</b></p> <p><b>A range of relevant</b> and supported comment with reference to the given specification/criteria.</p> | <p>[3]</p> <p style="text-align: center;"><b>6-8</b></p> <p>[5]</p> |
| <b>Total</b>  | <b>8</b>  |   |

### 7.5 MODERATION

All internally assessed work is marked by the teacher and internally standardised by the Centre. Marks are then submitted to OCR by a specified date, after which moderation takes place in accordance with OCR procedures. The purpose of moderation is to ensure that the standard of the award of marks for internally assessed work is the same for each Centre and that each teacher has applied the standards appropriately across the range of candidates within the Centre.

The sample of work which is presented to the Moderator for moderation must show how the marks have been awarded in relation to the internal assessment objectives defined in Section 7.3.

Where it is not clear within a project folder, by the candidate’s own presentation of work, where the marks have been awarded, annotation must be carried out by the person marking the work.

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## SECTION E: FURTHER INFORMATION

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### 8 Arrangements for Candidates with Special Needs

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Arrangements for Candidates with Special Needs for Entry Level Certificate specifications are based on the principle that the Centre is best able to assess the needs of the candidate and the appropriateness of the arrangement required. Arrangements for candidates with special needs should not advantage nor disadvantage a particular candidate, nor should they reduce the reliability and validity of the assessment.

The arrangements for candidates with special needs are more flexible than those currently available at GCSE and as such it should **not** be assumed that any arrangements made at Entry Level Certificate level will automatically be available at GCSE or GCE Level.

The following arrangements can be made for candidates without permission being sought:

- mechanical and technological aids may be used by candidates who are physically dependent on them;
- instructions regarding the conduct of any In-Course tests may be simplified;
- language support staff may provide linguistic help;
- bilingual dictionaries and word lists may be used.

For information relating to permission to use the following special arrangements, please consult the Handbook for Centres. Under certain circumstances:

- the teacher may act under the candidate's instructions to perform simple physical actions which the candidate is unable to undertake;
- mechanical and technological aids may be used by candidates who generally use them in their normal work;
- communicators or signers may be used;
- readers and amanuenses may be used.

Centres must apply to OCR for the provision of modified terminal examination papers. Applications should be made on the Special Arrangements Form (JEB/SA) and be submitted by 15 January in the year of the terminal examination.

It is expected that, generally, the candidate's own teacher will act as a communicator, a signer, a reader or an amanuensis.

Further clarification of any special arrangements may be obtained by consulting the section on "*Special Arrangements for Entry Level Certificate*" (section 6C) in the Handbook for Centres or by contacting OCR.

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## 9 Results Enquiries and Appeals

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Under certain circumstances a Centre may wish to query the grade awarded to one or more candidates or to submit an appeal against the outcome of such an enquiry.

For procedures relating to enquiries on results and appeals, Centres should consult the Handbook for Centres and the document “*Enquiries about Results and Appeals - Information and Guidance for Centres*” produced by the Joint Council for General Qualifications. Further copies of the most recent edition of this paper can be obtained from OCR, or from the Joint Council for General Qualifications website: [www.jcgq.co.uk](http://www.jcgq.co.uk).

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## 10 Support and In-service Training for Teachers

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To support teachers using this specification, OCR will make the following materials and services available:

- a full programme of In-Service training meetings arranged by the Training and Customer Support Division (telephone 01223 552950);
- written advice on coursework proposals;
- a report on the examination, compiled by senior examining personnel after each examination session;
- individual feedback to each Centre on the moderation of internally assessed coursework.

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# COURSEWORK ADMINISTRATION PACK

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This Coursework Administration Pack is designed to accompany the OCR Entry Level Certificate Design and Technology (Food Technology) specification for teaching from September 2001.

The forms in this pack are for use with the following specification:

- **Design and Technology (Food Technology) (3960)**

Guidance on the assessment of coursework will be found in Section 7 of the specification.

A master copy of all Entry Level Certificate Administration Packs will be sent to Examinations Officers during 2001.

Centres are permitted to copy materials from this booklet for their own internal use.

Contents:

## **Compulsory Recording Materials**

Coursework Summary Form

These materials will **not** automatically be sent out annually.

All forms may be photocopied and used as required. Additional copies may be downloaded from the OCR website: [www.ocr.org.uk](http://www.ocr.org.uk).

## Compulsory Recording Materials

**Coursework Summary Form:** This records the mark for each piece of work across the assessment objectives and the total mark for each candidate entered by the Centre. When the Centre is notified of the address of the Moderator, this form should be forwarded. Centres should keep a copy of the completed form. A print-out from a suitable software package is an acceptable alternative to this form if the same information is given.

## Internal Standardisation

Where more than one teacher in the Centre has marked the work for a particular coursework component, the Centre must standardise the marking in order to ensure that candidates who have demonstrated the same level of attainment receive the same mark. It is the responsibility of the Centre to produce a single, valid and reliable order of merit which reflects the attainment of all the candidates.

## Submission of Marks

OCR will send Centres internal assessment mark sheets (MS1) for the submission of coursework marks, along with instructions for completing and returning the mark sheets. Coursework marks may also be submitted electronically by EDI. The dates for despatch of MS1 mark sheets and for submission of coursework marks are given on the Key Dates poster for each session. Centres must ensure that they keep a copy of their coursework marks.

## Moderation

Moderator address labels will be sent to Centres shortly before the coursework mark submission date. Where the Centre has six or fewer candidates entered for a coursework component, all the candidates' work should be sent to the Moderator with a copy of the internal assessment mark sheet(s) (MS1).

Where there are more than six candidates, the Centre must choose a representative sample of the work of six candidates including work from the top, middle and bottom of the mark range. Where appropriate, work from the classes of different teachers should be included. Any guidance or instruction sheets that the candidates have received should also be included.

In addition, any correspondence relating to arrangements for candidates with special needs should be sent to the Moderator, together with the work of these candidates.

A report on the outcome of the moderation will be sent to Centres at the time results are issued.

## General Coursework Regulations and Procedures

General coursework regulations and procedures including those concerning lost or incomplete coursework are given in the OCR *Handbook for Centres*.



## **INSTRUCTIONS FOR COMPLETION**

### **A. Marking and Internal Standardisation**

1. Teachers must be thoroughly familiar with the appropriate sections of the specification and with the general coursework regulations.
2. Complete the information at the head of the form.
3. List the candidates in an order which will allow ease of transfer of information to a computer-printed mark sheet (Form MS1) at a later stage (i.e. in candidate number order). The teaching group/set should also be shown.
4. Mark the coursework for each candidate according to the notes for guidance given in the current specification.
5. Carry out internal standardisation to ensure that the total mark awarded to each candidate reflects a single, valid and reliable order of merit.
6. Enter the marks and total marks in the appropriate spaces.
7. Ensure that the addition of marks is independently checked.

### **B. External Moderation**

Send this form to the Moderator **with the MS1**. A print-out from a suitable software package is an acceptable alternative to this form if the same information is given.