

Advanced Higher Health and Food Technology Course/Unit Support Notes



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Please refer to the note of changes at the end of this document for details of changes from previous version (where applicable).

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Introduction

These support notes are not mandatory. They provide advice and guidance on approaches to delivering and assessing the Advanced Higher Health and Food Technology Course. They are intended for teachers and lecturers who are delivering the Course and its Units.

These support notes cover both the Advanced Higher Course and the Units in it.

The Advanced Higher Course/Unit Support Notes should be read in conjunction with the relevant:

Mandatory Information:

- ◆ Course Specification
- ◆ Course Assessment Specification
- ◆ Unit Specifications

Assessment Support:

- ◆ Specimen and Exemplar Question Papers and Marking Instructions
- ◆ Exemplar Question Paper Guidance
- ◆ Guidance on the use of past paper questions
- ◆ Coursework Information:
 - General assessment information
 - Coursework Assessment Task*
- ◆ Unit Assessment Support*

*These documents are for assessors and are confidential. Assessors may access these through the SQA Co-ordinator in their centres.

Related information

Advanced Higher Course Comparison

Further information on the Course/Units for Advanced Higher Health and Food Technology

This information begins on page 19 and both teachers and learners may find it helpful.

General guidance on the Course/Units

Aims

As stated in the Course Specification, the aims of the Course are to enable learners to:

- ◆ develop skills of independent enquiry, critical thinking and analysis and evaluation
- ◆ apply knowledge and understanding of the relationships between nutrition, food and health, and the importance of these relationships
- ◆ develop detailed knowledge and understanding of food science
- ◆ apply knowledge and understanding of the functional properties of food in food product development
- ◆ develop detailed knowledge and understanding of commercial food manufacturing
- ◆ analyse contemporary issues affecting consumer food choices

The Course will also give learners the opportunity to acquire depth in their knowledge and understanding of nutrition, food and health, and consumer food issues, and to further develop skills of analysing, evaluating and drawing conclusions.

The Course will provide the opportunity to integrate these skills in an extended piece of individual research.

Progression

In order to do this Course, learners should have achieved the Higher Health and Food Technology Course.

Learners who have achieved this Advanced Higher Course may progress to further study, employment and/or training. Opportunities for progression include:

- ◆ Progression to other SQA qualifications:
 - Progression to other qualifications at the same level of the Course, for example Professional Development Awards (PDAs), Higher National Certificates (HNCs).
- ◆ Progression to further/higher education:
 - For many learners a key transition point will be to further or higher education, for example to Higher National Certificates (HNCs)/Higher National Diplomas (HNDs) or degree programmes. Examples of further and higher education programmes that learners doing the Course might progress to are human nutrition and dietetics, food science and food technology-related courses.

- Advanced Higher Courses provide good preparation for learners progressing to further and higher education as learners doing Advanced Higher Courses must be able to work with more independence and less supervision. This eases their transition to further/higher education. Advanced Higher Courses may also allow 'advanced standing' or partial credit towards the first year of study of a degree programme.
- Advanced Higher Courses are challenging and testing qualifications: learners who have achieved multiple Advanced Higher Courses are regarded as having a proven level of ability which attests to their readiness for higher education in HEIs in other parts of the UK as well as in Scotland.
- ◆ Progression to employment:
 - For many learners, progression will be directly to employment or work-based training programmes. Employment opportunities and training programmes are divided into two main areas; the health industry which includes dieticians, nutritionists and health promoting professionals, and the food industry which includes food scientists and those involved in food product development.

Hierarchies

Hierarchy is a term used to describe Courses and Units which form a structured progression involving two or more SCQF levels.

This Advanced Higher Course is not in a hierarchy with the corresponding Higher Course or its Units.

Skills, knowledge and understanding covered in this Course

This section provides further advice and guidance about skills, knowledge and understanding that could be included in the Course.

Teachers and lecturers should refer to the *Course Assessment Specification* for mandatory information about the skills, knowledge and understanding to be covered in this Course.

The development of subject-specific and generic skills is central to the Course. Learners should be made aware of the skills they are developing and of the transferability of them. It is the transferability that will help learners with further study and enhance their personal effectiveness.

The table on next page shows where there are likely to be opportunities to develop the mandatory skills, knowledge and understanding in or across the Units of the Course. The delivery mode and the approaches to learning and teaching adopted will determine how and where these opportunities arise.

| Aims | Skills, knowledge and understanding | Units | |
|--|---|-----------------|--|
| | | Food for Health | Food Science, Production and Manufacturing |
| Develop skills of independent enquiry, critical thinking and analysis and evaluation | Develop skills of independent enquiry, critical thinking and analysis and evaluation by carrying out: <ul style="list-style-type: none"> ◆ primary and secondary research techniques ◆ qualitative and quantitative research | ✓ | ✓ |
| Apply knowledge and understanding of the relationships between nutrition, food and health, and the importance of these relationships | Analysing the relationships between food and health, and the importance of these relationships for a range of individuals. <ul style="list-style-type: none"> ◆ functions and food sources of macro- and micro-nutrients, plus water, dietary fibre and energy ◆ dietary needs of individuals at different stages of life ◆ implications for diet and health specific to groups of individuals ◆ sources and recommendations of current dietary advice ◆ the links between nutritional intake and diet related diseases ◆ the effects on health of diet-related diseases and conditions | ✓ | |
| Develop detailed knowledge and understanding of food science | Developing detailed knowledge and understanding of the science of food in the development of food products. <ul style="list-style-type: none"> ◆ food additives, functional foods, alternative proteins, cook chill process, modified atmosphere packaging | ✓ | ✓ |
| Apply knowledge and understanding of the functional properties of food in food product development | Applying understanding of the functional properties of food to prepare food prototypes. Functional properties: <ul style="list-style-type: none"> ◆ denaturation/coagulation, aeration, gelatinisation, crystallisation, dextrinisation, fermentation, caramelisation, shortening, preservation, emulsification ◆ Ingredients: flour, sugar, egg, liquid, raising agent | | ✓ |

| Aims | Skills, knowledge and understanding | Units | |
|---|--|-----------------|--|
| | | Food for Health | Food Science, Production and Manufacturing |
| Develop detailed knowledge and understanding of commercial food manufacturing | <p>Developing in-depth knowledge and understanding of food systems in production and processing.</p> <p>Stages in food product development:</p> <ul style="list-style-type: none"> ◆ concept generation ◆ concept screening ◆ prototype production ◆ product testing ◆ first production run ◆ marketing plan ◆ product launch <p>Plus:</p> <ul style="list-style-type: none"> ◆ sensory testing, market research techniques, marketing methods | | ✓ |
| Analyse contemporary issues affecting consumer food choices | <p>Analysing contemporary issues affecting consumer food choices:</p> <ul style="list-style-type: none"> ◆ environmental issues ◆ sustainability issues ◆ ethical issues ◆ food packaging ◆ food labelling ◆ influence of the media and advertising | ✓ | ✓ |

| Other skills developed | |
|--|---|
| Application of knowledge and understanding | <ul style="list-style-type: none"> ◆ applying knowledge and understanding of factual information, to link these to current food issues and questions in the question paper ◆ building well-structured arguments based on analysis and evaluation of information |
| Research | <ul style="list-style-type: none"> ◆ developing the ability to access relevant information from appropriate sources, eg in the Food Science, Production and Manufacturing Unit and when undertaking the project ◆ using a range of methods of gathering information to use in product development |
| Communication | <ul style="list-style-type: none"> ◆ developing communication skills will permeate the Course — learners will be able to communicate clearly both orally, eg when presenting a product idea, and in writing, eg when making decisions based on information gathered. ◆ developing the ability to communicate ideas and information in a range of appropriate formats, including digital and the use of IT |
| Decision making | <ul style="list-style-type: none"> ◆ developing the ability to identify issues or problems and to devise potential solutions, eg when developing a food product idea |
| IT skills | <ul style="list-style-type: none"> ◆ using analysis software to display the results of questionnaires, or to carry out nutritional analysis of a proposed food product ◆ using word processing software to present the results of research tasks undertaken |

Skills, knowledge and understanding to be included in the Course will be appropriate to the SCQF level of the Course. The SCQF level descriptors give further information on characteristics and expected performance at each SCQF level (www.sqa.org.uk/scqf).

Approaches to learning and teaching

The purpose of this Course is to develop the required knowledge and skills to make informed choices about dietary, nutritional and contemporary issues affecting consumer food choices.

The Course uses an investigative and problem-solving approach to develop knowledge, understanding and skill. The development of research skills, using the ability to draw on a range of sources of information, is central to this Course.

The Course will enable learners to develop skills of critical thinking, the ability to develop informed opinions and to use these to make the challenging decisions required in learning, life and work.

Advanced Higher Courses place more demands on learners as there will be a higher proportion of independent study and less direct supervision. Some of the approaches to learning and teaching suggested for other levels (in particular, Higher) may also apply at Advanced Higher level but there should be a stronger emphasis on independent learning.

For Advanced Higher Courses, a significant amount of learning may be self-directed and require learners to demonstrate a more mature approach to learning and the ability to work on their own initiative. This can be very challenging for some learners, who may feel isolated at times, and teachers and lecturers should have strategies for addressing this. These could include, for example, planning time for regular feedback sessions/discussions on a one-to-one basis and on a group basis led by the teacher or lecturer (where appropriate).

Teachers/lecturers should encourage learners to use an enquiring, critical and problem-solving approach to their learning. Learners should also be given the opportunity to practise and develop research and investigation skills and higher-order evaluation and analytical skills. The use of information and communications technology (ICT) can make a significant contribution to the development of these higher-order skills as research and investigation activities become more sophisticated.

Suggested learning and teaching approaches

There are two Units and a Course assessment in the Advanced Higher Health and Food Technology Course. The level of demand for each Unit corresponds with Scottish Credit and Qualifications Framework at level 7.

The two Units in the Course are:

- ◆ Health and Food Technology: Food for Health (Advanced Higher) (8 SCQF credit points)
- ◆ Health and Food Technology: Food Science, Production and Manufacturing (Advanced Higher) (16 SCQF credit points)

Centres are free to sequence the teaching of the Outcomes, Units and/or Course in any order they wish. For example:

- ◆ Each Unit could be delivered separately in any sequence.

or:

- ◆ Both Units may be delivered in a combined way as part of the Course. If this approach is used, the Outcomes within Units may either be partially or fully combined.

Teachers/lecturers should, where possible, provide opportunities to personalise learning, and to enable learners to have choices in approaches to learning and teaching. The flexibility in Advanced Higher Courses and the independence with which learners carry out the work lend themselves to this. Teachers/lecturers should also create opportunities for, and use, inclusive approaches to learning and teaching. This can be achieved by encouraging the use of a variety of learning and teaching strategies which suit the needs of all learners. Innovative and creative ways of using technology can also be valuable in creating inclusive learning and teaching approaches.

It is more likely to produce a better learning experience if the learning and teaching uses an integrative approach. The integration of theory with practical activities reinforces and applies knowledge, understanding and skills in meaningful contexts.

Common themes or topics may be identified across Units, and learning and teaching structured to accommodate this. Such an approach may lead to the production of more naturally-occurring evidence. The subject matter of Health and Food Technology provides an ideal platform for adopting a variety of learning and teaching methods. The integration of theory with practical activities reinforces and applies knowledge, understanding and skills in meaningful contexts.

In order to encourage personalisation and choice, teachers/lecturers could offer the choice of a range of briefs and scenarios, or learners may be encouraged to develop their own.

Throughout this Course, local contexts could be used as a basis for learning and teaching. Other stimulus materials such as visits to local food producers or retailers, and visits to local or national food events may also help to motivate and encourage learners. Examples of suggested resources that could be used for the delivery of this Course can be found in Appendix 2.

Learners should be encouraged to choose their own range of methods of conducting research, testing and presenting results.

Case studies or scenarios could be devised which incorporate experiences, knowledge, understanding and skill from both Units.

Examples of integrated learning could include:

- ◆ Learners could investigate a contemporary issue affecting the food choices of a chosen group, eg children, and then taking this into account, devise a suitable food product to meet the dietary and health needs of the group.
- ◆ Learners could devise a new vegetarian food product for a school canteen which takes account of the dietary and health needs of the target group, for example teenagers.
- ◆ Learners could investigate the recommendations of a current food strategy, and develop a food product based on the recommendations, to be included in a café menu.

Learners will engage in a variety of learning activities as appropriate to the subject, for example:

- ◆ researching information for their subject rather than receiving information from their teacher or lecturer
- ◆ using active and open-ended learning activities such as research, case studies and presentation tasks
- ◆ making use of the internet to gather information to draw conclusions about specific issues
- ◆ engaging in wide-ranging independent reading, including books, periodicals and professional journals
- ◆ using appropriate technological resources (eg web-based resources)
- ◆ using appropriate media resources (eg video clips)
- ◆ recording in a systematic way the results of research and independent investigation from a range of different sources, presenting relevant findings/conclusions of research and investigation activities clearly, using a range of methods
- ◆ participating in group work with peers and using collaborative learning opportunities to develop teamworking
- ◆ participating in informed debate and discussion with peers where they can demonstrate skills in constructing and sustaining lines of argument to provide challenge and enjoyment, breadth, and depth to learning
- ◆ drawing conclusions from complex information
- ◆ using written, oral, and/or electronic communication skills to present information
- ◆ using real-life contexts and experiences familiar and relevant to learners to meaningfully hone and exemplify skills, knowledge and understanding
- ◆ participating in field trips and visits

Teachers/lecturers should support learners by having regular discussions with them and giving regular feedback. Some learning and teaching activities may be carried out on a group basis and, where this applies, learners could also receive feedback from their peers.

Developing skills for learning, skills for life and skills for work

The following skills for learning, skills for life and skills for work should be developed in this Course.

| Skills for learning, skills for life and skills for work | Suggested learning and teaching activities |
|---|---|
| 2 Numeracy 2.3 Information handling | <ul style="list-style-type: none"> ◆ presenting responses about food or consumer issues obtained from research and investigations, eg surveys and questionnaires in the most appropriate manner to aid interpretation or decision making ◆ extracting and interpreting information from data included in tables, charts, graphs or diagrams in food related publications, to help make informed decisions |
| 3 Health and wellbeing 3.3 Physical wellbeing | <ul style="list-style-type: none"> ◆ demonstrating an in-depth understanding of the functions and inter-relationship between nutrients ◆ explaining the dietary needs of individuals ◆ explaining links between nutritional intake and diet-related diseases or conditions |
| 5 Thinking skills 5.3 Applying 5.4 Analysing | <ul style="list-style-type: none"> ◆ planning, organising and carrying out tasks ◆ gathering and using information to develop solutions to meet the needs of case studies/briefs/scenarios ◆ presenting relevant information to support analysis ◆ evaluating solutions based on analysis |

Teachers and lecturers should ensure that learners have opportunities to develop these skills as an integral part of their learning experience.

It is important that learners are aware of the skills for learning, skills for life and skills for work that they are developing in the Course and the activities they are involved in that provide realistic opportunities to practise and/or improve them.

At Advanced Higher level it is expected that learners will be using a range of higher-order thinking skills. They will also develop skills in independent and autonomous learning.

Approaches to assessment

Assessment in Advanced Higher Courses will generally reflect the investigative nature of Courses at this level, together with high-level problem-solving and critical thinking skills and skills of analysis and evaluation.

This emphasis on higher-order skills, together with the more independent learning approaches that learners will use, distinguishes the added value at Advanced Higher level from the added value at other levels.

There are different approaches to assessment, and teachers and lecturers should use their professional judgement, subject knowledge and experience, as well as understanding of their learners and their varying needs, to determine the most appropriate ones and, where necessary, to consider workable alternatives.

Assessments must be fit for purpose and should allow for consistent judgements to be made by all teachers and lecturers. They should also be conducted in a supervised manner to ensure that the evidence provided is valid and reliable.

The Course assessment will consist of two Components: a project and a question paper.

The project (Component 1) has 60% of the total marks available and will assess the application of knowledge, understanding and skills from across the Units through an investigative approach. The project is designed to assess learners' ability to use research skills to research, analyse and evaluate any appropriate current food issue relevant to the Course. These might include issues relating to nutrition and health, consumer food choices or commercial food manufacturing.

The project is divided into three sections and will be externally assessed:

- 1 Project proposal
- 2 Research
- 3 Analysis and evaluation

The project aims to give learners the opportunity to demonstrate the following skills, knowledge and understanding:

- ◆ using research skills to investigate a current food issue
- ◆ evaluating, analysing and presenting information

The question paper (Component 2) has 40% of the total marks available and will assess the learner's ability to integrate and apply knowledge and understanding from across the Units in examination conditions. This question paper will give learners an opportunity to demonstrate the following skills, knowledge and understanding:

- ◆ analysing the relationships between food and health, and the importance of these relationships
- ◆ demonstrating knowledge and understanding of food science
- ◆ analysing contemporary issues affecting consumer food choices
- ◆ demonstrating knowledge and understanding of commercial food manufacturing

Further details of the Course assessment can be found in the *Advanced Higher Health and Food Technology Course Assessment Specification*.

Unit assessment

The Advanced Higher Health and Food Technology Course has two mandatory Units.

Each Unit of the Course helps the learner develop skills and knowledge which will be integrated and holistically applied in the Course assessment.

Units are statements of standards for assessment and not programmes of learning and teaching.

Health and Food Technology: Food for Health (Advanced Higher)

This Unit requires learners to provide evidence of their ability to demonstrate the relationships between health, food, nutrition, and dietary needs and advice, and their impact on health for a range of groups at various stages of life.

Health and Food Technology: Food Science, Production and Manufacturing (Advanced Higher)

Learners must demonstrate detailed knowledge and understanding of the underpinning science of functional properties of food, and use this information to develop food product specifications. Learners will also provide evidence of carrying out investigations into the commercial food manufacturing processes and explore and analyse trends in food purchasing and consumption.

Assessments must ensure that the evidence generated demonstrates, at the least, the minimum level of competence for each Unit. Teachers and lecturers preparing assessment methods should be clear about what that evidence will look like.

Sources of evidence likely to be suitable for Advanced Higher Units could include:

- ◆ meaningful contribution to group work and/or discussions (making use of log books, blogs, question and answer sessions to confirm individual learners have met the required standards)
- ◆ various forms of e-assessment, eg e-portfolios
- ◆ presentation of information to other groups and/or recorded oral evidence
- ◆ exemplification of concepts using, for example, a diagram
- ◆ interpretation of numerical data
- ◆ practical demonstration with commentary/explanation/narrative
- ◆ investigations
- ◆ short written responses

Evidence should include the use of appropriate subject-specific terminology as well as the use of real-life examples where appropriate.

Flexibility in the method of assessment provides opportunities for learners to demonstrate attainment in a variety of ways and so reduce barriers to attainment.

The structure of an assessment used by a centre can take a variety of forms, for example:

- ◆ individual pieces of work could be collected in a folio as evidence for Outcomes and Assessment Standards
- ◆ assessment of each complete Outcome
- ◆ assessment that combines the Outcomes of one or more Units

Teachers/lecturers should note that learners' day-to-day work may produce evidence which satisfies assessment requirements of a Unit, or Units, either in full or partially. Such naturally occurring evidence may be used as a contribution towards Unit assessment. However, such naturally occurring evidence must still be recorded and evidence such as written reports, recording forms, PowerPoint slides, drawings/graphs, video footage or observational checklists.

Combining assessment across Units

Units will be assessed on a pass/fail basis. All Units are internally assessed against the requirements shown in the *Unit Specification*. Each Unit can be assessed on an individual Outcome-by-Outcome basis or via the use of combined assessment for some or all Outcomes.

A combined approach to learning and teaching across the component Units of the Advanced Higher Health and Food Technology Course may be possible. Potential links between Outcomes of Units may be established, which will provide opportunities for learners to develop skills and use knowledge within one activity.

A combined approach to assessment will enrich the assessment process for the learner, avoid duplication of tasks and allow more emphasis on learning and teaching. Evidence could be drawn from a range of activities for a combined assessment. Care must be taken to ensure that combined assessments provide appropriate evidence for all the Outcomes that they claim to assess.

Combining assessment will also give centres more time to manage the assessment process more efficiently. When combining assessments across Units, teachers/lecturers should use e-assessment wherever possible. Learners can easily update portfolios, electronic or written diaries and recording sheets.

For some Advanced Higher Courses, it may be that a strand of work which contributes to a Course assessment method is started when a Unit is being delivered and is completed in the Course assessment. In these cases, it is important that the evidence for the Unit assessment is clearly distinguishable from that required for the Course assessment.

Preparation for Course assessment

Each Course has additional time which may be used at the discretion of the teacher or lecturer to enable learners to prepare for Course assessment. This time may be used near the start of the Course and at various points throughout the Course for consolidation and support. It may also be used for preparation for Unit assessment, and, towards the end of the Course, for further integration, revision and preparation and/or gathering evidence for Course assessment.

For the Advanced Higher Health and Food Technology Course, the assessment methods for Course assessment are a project and a question paper. Learners should be given opportunities to practise these methods and prepare for them.

Course component 1: Project

Examples of activities to include within this preparation time include:

- ◆ selecting topics

- ◆ gathering and researching information, and presenting relevant information appropriately
- ◆ evaluating and analysing findings
- ◆ developing and justifying conclusions

In relation to preparing for the project, teachers and lecturers should explain requirements to learners and give guidance about the amount and nature of the support they can expect. However, at Advanced Higher level it is expected that learners will work with more independence and less supervision and support.

Details of assessment conditions can be found in the *Health and Food Technology (Advanced Higher) Project General Assessment Information*.

Course Component 2: Question paper

Examples of activities to include within this preparation time include revising for the question paper and practising question paper techniques, for example:

- ◆ practising recall of information appropriate to the context of questions
- ◆ answering questions using appropriate command words to assist learners in developing their responses

When preparing learners for the question paper, teachers/lecturers should refer to the *Guidance on the use of past paper questions for Advanced Higher Health and Food Technology* to identify suitable past paper questions that could be used to support learners.

Authenticity

In terms of authenticity, there are a number of techniques and strategies to ensure that learners present work that is their own. Teachers and lecturers should put in place mechanisms to authenticate learners' evidence.

In Advanced Higher Courses, because learners will take greater responsibility for their own learning and work more independently, teachers and lecturers need to have measures in place to ensure that work produced is the learner's own work.

For example:

- ◆ regular checkpoint/progress meetings with learners
- ◆ short spot-check personal interviews
- ◆ checklists which record activity/progress
- ◆ photographs, films or audio records

Group work approaches are acceptable as part of the preparation for assessment and also for formal assessment. However, there must be clear evidence for each learner to show that the learner has met the Evidence Requirements.

For more information, please refer to SQA's [Guide to Assessment](#).

Added value

Advanced Higher Courses include assessment of added value which is assessed in the Course assessment.

Information given in the *Course Specification* and the *Course Assessment Specification* about the assessment of added value is mandatory.

In Advanced Higher Courses, added value involves the assessment of higher-order skills such as high-level and more sophisticated investigation and research skills, critical thinking skills and skills of analysis and synthesis. Learners may be required to analyse and reflect on their assessment activity by commenting on it and/or drawing conclusions with commentary/justification. These skills contribute to the uniqueness of Advanced Higher Courses and to the overall higher level of performance expected at this level.

In this Course assessment, added value will focus on the following:

- ◆ challenge — requiring greater depth or extension of knowledge and skills
- ◆ application — requiring application of knowledge and skills in practical and theoretical contexts as appropriate

In this Course, added value will be assessed by means of a question paper and a project. Together they will add challenge and application to the Course as the learner will integrate, extend and apply the skills, knowledge and understanding they have learned during the Course.

The question paper is used to assess whether the learner can retain and apply the knowledge and skills gained in individual Units. It assesses knowledge and understanding and the various different applications of knowledge such as reasoning, analysing, evaluating and solving problems.

The project is used to assess a wide range of higher-order cognitive and practical skills and to integrate assessment. Learners may research any appropriate topic based on a current scientific, sociological or technological food issue. The project brings a number of higher-order skills together, such as skills relating to planning, analysis, synthesis, evaluation and report writing. The learner will carry out a significant part of the work for the project independently with minimal supervision.

Equality and inclusion

It is recognised that centres have their own duties under equality and other legislation and policy initiatives. The guidance given in these *Course/Unit Support Notes* is designed to sit alongside these duties but is specific to the delivery and assessment of the Course.

It is important that centres are aware of and understand SQA's assessment arrangements for disabled learners, and those with additional support needs, when making requests for adjustments to published assessment arrangements. Centres will find more guidance on this in the series of publications on Assessment Arrangements on SQA's website: www.sqa.org.uk/sqa/14977.html.

The greater flexibility and choice in Advanced Higher Courses provide opportunities to meet a range of learners' needs and may remove the need for learners to have assessment arrangements. However, where a disabled learner needs reasonable adjustment/assessment arrangements to be made, refer to the guidance given in the above link.

Further information on Course/Units

Learners will acquire and develop a range of skills as they progress through the Course. The skills and knowledge developed and assessed in the Units will be integrated and holistically applied in the Course assessment.

Investigative skills, the application of subject-specific knowledge and understanding, and critical thinking skills, are central to the Course. Teachers/lecturers could use relevant examples or local contexts as vehicles for the development of these skills.

This section illustrates how the Course skills may be developed and applied in Unit and Course assessment.

Research skills

Carrying out a literature review

In order to carry out a successful literature review, learners should gather and select information, paying particular regard to identifying different viewpoints about the topic identified for study in the project.

Learners who have studied Health and Food Technology at lower SCQF levels should already be familiar with basic research methods, but the increased demands of Advanced Higher require greater emphasis on detailed, coherent and cross-referenced notes, especially as it is likely that they will access multiple sources dealing with the same topic.

Learners should be encouraged to plan ahead to make sure that the resources they need are available when they need them.

Sources of information

When evaluating potential sources of information, learners might wish to consider the following:

- ◆ the author — eg is the author a serious and respected specialist in the field?
- ◆ the date of the work — eg is the information current, or has it been overtaken by more up-to-date thinking?
- ◆ the validity of the information — eg does the design of the publication or the website suggest that the pictures or special effects are more important than the words?
- ◆ any likely bias — eg is the author or website impartial, is the website managed by a responsible institution, or is it sponsored by a manufacturer?

Taking notes

It is likely that learners will review a wide range of material. Having some background knowledge of the chosen topic will help them identify key information and compile relevant notes during the literature review.

Note taking is more than simply copying out passages from books or cutting and pasting from websites. There is no need to copy out large amounts of text, as the aim is to capture the main thread of the information. To avoid spending time reading through an entire piece of work when looking for specific information, views or opinions, it can be helpful to look at the contents page, the index and the concluding chapter of a book/summary of findings in a study to help ascertain if the work is likely to be a useful source of relevant information.

Having identified the section(s) that are likely to be most useful, it is worth developing the skill of skim reading — ie glancing over the paragraphs, looking for key words or phrases to use in the notes. This allows the text to be scanned quickly, and then only the main ideas and key issues that are relevant to the topic are recorded. These should be summarised in the learner's own words. Only text that is likely to be quoted in the project needs to be copied out verbatim. It should be copied accurately and be clearly identified and referenced.

Only notes that are of significance to the topic being studied should be recorded. Avoid including information that does not add anything to the understanding of the topic. Notes should be brief, but not so short that the meaning of what has been recorded is lost, especially if shorthand or abbreviations are used.

Developing a system for keeping notes organised will help keep track of information and make it easier to find later. It is often useful to organise notes by theme, keeping the notes taken about a specific aspect of the topic together, as this is likely to be the way that the topic is expected to be carried out. Taking the time to set out notes neatly will help organise thinking, identify areas for further reading, make the information more accessible when writing up the literature review, and make it easier when compiling the list of references for the project.

The author and title of the book or article being consulted, and the date of publication should be recorded. If the information is from an online source, the URL and the date when it was accessed should be noted. This is important as any sources referred to in the project must be accredited. It will also make it easier to cross-reference information, and to help avoid unintended plagiarism.

A systematic way of recording the information gathered from the literature review as it is carried out should be encouraged. This will make the information easier to find again later, may avoid having to spend time re-reading the work for specific information, and make it easier to cross-reference sources of information.

Learners are likely to develop their own preferred method of working. The following example suggests one approach to recording information identified from the literature review, and could be adapted to match the learner's recording style.

Reference details: Include the name of the publication, the author's name, the publisher and the date of publication. If using a website, include the full URL and the date it was accessed. This will help save time later going back to find these details if the work is to be acknowledged in the project.

Broad subject area: Draw up a very brief outline of the main content that is relevant to the topic. Keeping sources which focus on the same area of the topic together may help organise the presentation of the literature review.

Summary of content: Make brief notes of the most important points in the work. It is likely that these are the points to be included in the project. Listing them here will help save time finding them later.

Quotes: Make a careful copy of anything from the work that might be referred to in the project as a direct quote from the author.

✓/x: to indicate whether the source is used in the project. This will be helpful later when compiling the bibliography.

Learners could choose to use any format for organising and storing this information. This record could be paper based or held electronically, but whatever method is used, it should include the details that will be required later in the process, and make the information easy to find.

The results of a literature review should give an indication of the focus for further research to be carried out later in the project. The argument for the focus for the research question should be clear and be supported by evidence from the literature review.

Bibliography

Sources used in the literature review should be recorded in a bibliography. The bibliography should be an accurate record of all the works that have been used in the project. While it is likely that learners will access many sources of information when carrying out the literature review, only works that have been referred to in the project should be included in the bibliography.

For books, journals and periodicals, it is important that the author's name is entered correctly. The name of the publisher and the date of the publication should also be included. Websites should also be recorded in the bibliography. Web addresses should be listed, with the dates on which they were accessed. This is important because websites are subject to frequent alteration.

Details of information required for referencing and in a bibliography can be found in the *Health and Food Technology (Advanced Higher) Project: General Assessment Information* and the *Health and Food Technology (Advanced Higher) Project: Coursework Assessment Task*.

Research techniques

Research uses a logical approach to obtain information about a specific subject. The main purpose of research is to collect information or data for the purpose of coming to a decision.

The choice of research techniques to be used will depend on the information the learner wishes to find. Learners should be encouraged to choose the research techniques that will best enable them to gather the information they need to address their research question. The results of the research should provide enough relevant information to give a balanced perspective of the topic and to allow valid analysis and evaluation.

The grid on the next page provides an indication of the type of research technique and the complexity of research that should be considered by learners at Advanced Higher level. The list is for guidance only and is not definitive. Learners are free to choose to use other research techniques.

| Research technique | When carrying out and presenting the results of research, learners could consider the following: |
|--------------------------------------|--|
| Costing | <ul style="list-style-type: none"> ◆ Use current cost data. ◆ Include details of the sources of the cost data. ◆ Include the cost of all ingredients/components. ◆ When conducting comparative costing, include 'like for like' data. |
| Interviews | <ul style="list-style-type: none"> ◆ Choose an interviewee whose expertise is appropriate to the focus of the research, ie has the correct qualifications or knowledge to provide valid answers. Identify his/her position/job title. ◆ Ask sufficient pertinent questions to provide the information needed. Avoid including questions that do not focus on the research being undertaken or questions that provide information that is not relevant to the topic. ◆ Construct the questions to allow the interviewee to provide extended answers. |
| Internet/ Literary search | <ul style="list-style-type: none"> ◆ Review sufficient sources of information to provide a balanced view of the topic. ◆ Use sources of information that will provide data relevant to the focus of the research. ◆ Information could be gathered from a mixture of literary and web-based sources. ◆ Only select the relevant information from each source. ◆ Give details of the sources, and identify the information gathered from each of the identified sources. |
| Nutritional Analysis | <ul style="list-style-type: none"> ◆ Include the nutrients that are relevant to the focus of the research. Avoid those that do not have a direct impact on the topic. ◆ Include all ingredients in the food product/food product component in the analysis. ◆ Identify the source of the data. |
| Sensory Testing | <ul style="list-style-type: none"> ◆ Choose testers whose expertise is appropriate to the focus of the research. Provide a descriptor(s) of the group(s) of testers used. ◆ Use sufficient testers to provide valid evidence. ◆ Include appropriate questions to elicit all the information required about the food product. ◆ Display any key used for scoring. |
| Survey | <ul style="list-style-type: none"> ◆ Choose sources of information that will provide data relevant to the focus of the research. ◆ Use sufficient different sources of information. These could include: food writers'/chefs'/health promotion websites, books, food magazines/ periodicals, trade publications, food retailers' stores or websites, or a mixture of these to provide a range of valid information. ◆ Identify the relevant information gathered from each source. |
| Questionnaire | <ul style="list-style-type: none"> ◆ Choose respondents whose qualifications or knowledge are appropriate to the focus of research. Provide a descriptor(s) of the group(s) of respondents used. ◆ Include enough respondents, in each group if applicable, to provide sufficient valid evidence for analysis to be carried out, or conclusions to be drawn. ◆ Ask sufficient pertinent questions to provide the information needed. |

Carrying out analysis

The learner should incorporate information from the results of their research and explain their relevance to their research question. Analysis will involve the learner considering the information from the results of their research and picking out what is relevant to their research question to identify patterns, trends and exceptions. It is important that learners take a critical view of the details they have collected. A strong analysis will show a good understanding of the research question by linking information from more than one source and consistently commenting on the similarities and differences between the information.

A key part of communicating the ideas in the analysis is to be able to structure the findings appropriately. This will usually involve setting out the information relevant to the research question in a logical manner which develops a clear line of argument. This may lead to conclusions which can be supported by evidence from the results of research. In order to organise the information in the analysis, it may be appropriate for learners to use sub-sections. These sub-sections will normally link to the issues identified in the analysis. The sub-sections should link together coherently and be presented in a logical order.

Units: suggested learning and teaching approaches and assessment strategies

The two Units in the Course are:

- ◆ Health and Food Technology: Food for Health (Advanced Higher) (8 SCQF credit points)
- ◆ Health and Food Technology: Food Science, Production and Manufacturing (Advanced Higher) (16 SCQF credit points)

These Units are designed to provide flexibility and choice for both the learner and delivering centre. Tasks should be open to allow for personalisation and choice and use a variety of methods so that learners' interest and motivation are maintained and individual preferences for different learning styles are encouraged.

The following tables give examples of learning and teaching activities that may be used when delivering the Units. These activities could provide naturally occurring evidence which could be used to demonstrate that the learner has met the Assessment Standards. Assessment evidence could be drawn from a range of activities and learners could present their evidence in a variety of formats including:

- ◆ a written narrative, leaflet, or static display
- ◆ a table, chart, mind map or other diagram
- ◆ an annotated illustration, concept board, mood board
- ◆ an electronic presentation
- ◆ an oral presentation, with accompanying notes
- ◆ a digital media clip

Food for Health Unit

| Outcome | Possible learning and teaching approaches | Possible assessment strategies |
|--|--|---|
| <p>1 Apply knowledge and understanding of the relationships between nutritional intake and health by:</p> <p>1.1 Analysing the impact of nutritional intake on the prevention of related conditions or diseases</p> <p>1.2 Explaining the key nutritional advice for one</p> | <p>Learners could:</p> <ul style="list-style-type: none"> ◆ map the links between nutrients, their function(s) and their potential impact on health. This could be done in small groups or as a class activity. ◆ record their own diet. They could then use nutritional analysis software to establish their nutritional intake, and compare it to the DRVs for their age and gender group. Candidates could then use this data as a basis for analysis of the potential impact on the prevention of related conditions or diseases. ◆ work in pairs or small groups, each carrying out research to find out about the nutritional advice for a specific life stage, eg infants, young children, adolescents, adults, elderly. This information could be gathered by visits to a local nursery or care home. Alternatively, learners might interview appropriate staff from these facilities. They could then apply this information to the identified individual. ◆ work in pairs or small groups to collect information about food intake of individuals from different groups. They could then conduct an analysis of the food intake of these individuals, and link the results of the analysis to the potential impact on the health of the identified individual. | <p>For this Unit learners could provide evidence in a range of ways, including written, oral or electronic responses.</p> <p>The learner could provide an analysis of the impact of nutritional intake in the prevention of diet-related related conditions on a specified individual. They could present their work as an article for a health feature of a newspaper or magazine, a presentation at a health promotion event, or as a lesson to a younger class group.</p> <p>The learner could present the explanation of the nutritional advice for a specified group in a scenario, eg:</p> <ul style="list-style-type: none"> ◆ the parents of toddlers/nursery/primary school children ◆ ante/post-natal mothers at a clinic ◆ supermarket customers ◆ clients in a fitness centre |

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| <p>life stage of an individual</p> <p>1.3 Evaluating the potential impact of a current food initiative or strategy on the health of an individual</p> | <ul style="list-style-type: none"> ◆ make use of current articles from newspapers or magazines, television features or professional journals to gather information about diet-related diseases or conditions. They could then carry out research to find out about the impact of nutritional intake on health. ◆ use online sources to gather information about national food strategies or initiatives, eg the Eatwell Plate, Revised Dietary Goals for Scotland, Beyond the School Gate, Better Eating, Better Learning, Supporting Healthy Choices, Take Life On, One Step at a Time, FSA Front of Pack Nutrition Labelling. If they have the opportunity, candidates could interview a community dietician, a representative of their school meals provider or a health promotion professional to gather information about local food initiatives. ◆ survey target individuals to gather information about the impact of an identified current food initiative or strategy on their food choices, then use the results of the survey to evaluate the potential impact of the health of the identified individuals. | <p>The learner could select a current food strategy or initiative, and a specified individual on which to base their evaluation. They could present their evaluation as an oral report to the rest of the class, or as a written report.</p> <p>Evidence for this Unit could also be gathered through the use of a short question paper.</p> |
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Food Science, Production and Manufacturing Unit

| Outcome | Possible learning and teaching approaches | Possible assessment strategies |
|--|---|--|
| <p>1 Investigate the application of food science in commercial manufacturing by:</p> <p>1.1 Analysing the application of food science in relation to commercial food manufacturing</p> <p>1.2 Evaluating the impact of functional properties of ingredients on consumer acceptability of foods</p> | <p>Learners could:</p> <ul style="list-style-type: none"> ◆ work in pairs or small groups to make versions of a food product, or part of a food product such as a sauce, pastry or biscuit to find out the effect on the finished product by varying the choice or proportion of ingredients, and then share their results with the rest of the class. In groups, learners could discuss the application of this to the development of food products in the food industry. ◆ gather information about how the functional properties of ingredients might impact on commercial food manufacture by interviewing a local manufacturer, chef, or food business owner/staff ◆ carry out a range of methods of sensory testing on a single product in order to find out the most appropriate method of testing to use in order to elicit the required information about the consumer acceptability of the product ◆ work individually, in pairs or in small groups. Each group could prepare a range of versions of a food product, each version with a different choice or proportion of ingredients. They could then carry out sensory testing on each product to gather information about consumer acceptability. | <p>For this Outcome, learners could provide evidence in a range of ways, including written, oral or electronic responses.</p> <p>For a specified food product, the learner could provide analysis of the impact of identified ingredients in the food product, and how this might affect decisions about the use of the ingredient in commercial food manufacture. They could present their work as a mind map or other diagram, as a written report or an oral presentation.</p> <p>The learner could present results of appropriate sensory testing of the impact of functional properties of ingredients on an identified product. These could include: interview questions with written interviewee responses, recording of interviews, diagrammatical presentation of results, eg star profiles/pie charts/bar graphs/pictograms, photographs or digital evidence.</p> <p>Evidence for this Outcome could also be gathered through the use of a short question paper.</p> |

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| <p>2 Apply knowledge and understanding to develop food product specifications to meet current food trends by:</p> <p>2.1 Evaluating market research methods used in the food sector</p> <p>2.2 Carrying out an investigation to identify a trend in food purchasing and/or consumption</p> <p>2.3 Creating a</p> | <p>Learners could:</p> <ul style="list-style-type: none"> ◆ identify the type of information about a product that they need to elicit. This could include information about: features of a specific food product, eg sensory attributes; factors affecting food choice such as environmental issues, ethical issues, advertising or the media. They could then identify the most appropriate type of research to elicit the required information. ◆ be provided with scenarios to stimulate discussion about the advantages and disadvantages of market research methods, for example: <i>‘A retailer wants to find out consumer preferences before stocking a new range of baked products.’</i> <i>‘A manufacturer wants to find out how successful an idea for a new food product is likely to be.’</i> <i>‘A high street retailer wants to find out if it would be cost-effective to sell his products online.’</i> ◆ use a range of techniques to investigate current trends in food purchasing. Learners could use newspaper/magazine/television features, local restaurant menus, or use the internet to survey retailers’ current ranges to identify current food trends, survey food policy and advice documents. They could then go on to present the results of their investigations in a range of ways, eg table, chart, mind map, diagram, or narrative. Learners could consider the advantages and disadvantages of using these techniques to gather information. ◆ from a given range of food products, each based on a different food trend, be asked to identify the food trend, giving explanations of why the | <p>For this Outcome, learners could provide evidence in a range of ways, including written, oral or electronic responses.</p> <p>The learner could select a potential range of required information on which to base their evaluation of identified types of market research which might be used. They could present their evaluation as an oral report to the rest of the class, or as a written report.</p> <p>The learner could provide evidence of carrying out investigations into food purchasing and/or consumption by presenting appropriate results from at least two relevant sources. They could present the results in a mind map, diagram, or in a narrative. They could then use the results from their research to identify a current trend in food purchasing/ consumption.</p> <p>The learner could create a specification for a food product which addresses an identified current food trend. The learner could provide explanation of the relevance to the food trend of the ingredients chosen, and other details about the product.</p> |
|--|---|---|

| | | |
|---|---|--|
| <p>specification for a food product idea for an identified trend</p> <p>2.4 Evaluating stakeholder acceptability of a food product idea</p> | <p>product is suitable for the identified trend.</p> <ul style="list-style-type: none"> ◆ identify specification points for a product selected from a given range of suitable commercial food products ◆ create a specification for a food product, then ask other members of the class to identify and describe the product based on the specification ◆ use a range of formats to present food product ideas to others. These could include: a manufactured product, photographic evidence of a product that has been manufactured previously, a concept board showing details of the product, a recipe detailing the features of the product. They could carry out testing based on the food product ideas. This could include sensory testing with an appropriate target group, surveying or issuing questionnaires to appropriate consumers, interviewing an appropriate stakeholder such as a restaurant owner, a chef, or a retailer. | <p>The learner could present their food product idea as a finished product, a photograph, an annotated recipe, a concept board, a diagram, or narrative. They could then use this as a basis for testing the product with a relevant target group, or appropriate stakeholder. The information collected from testing could be used as a basis for their evaluation of the product idea.</p> |
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Course assessment: Project

The way a learner approaches the project is likely to be influenced by their chosen topic and may also depend on their preferred method of working. The skills required for the project should have been developed during the Units, based on the guidance in the previous pages.

Before starting out on the project, learners may benefit from considering the organisational and time management demands of the task. Planning ahead may help make sure that not only is the final submission date met, but also that the learner has in place a strategy to overtake all of the requirements of the project.

It might be helpful for the learner to discuss their choice of prospective area of investigation for their project topic with the teacher/lecturer before embarking on the project. Learners might find it useful to formulate an approach for carrying out the project in order to clarify their thinking and to plan for each stage. Including details of the stages to be undertaken, and the projected timelines for the completion of these activities would allow them to monitor progress. This could be created in any written or electronic format, but whatever method is used, it should support the process and should not be overly onerous.

Further information about the project can be found in:

- ◆ *Advanced Higher Health and Food Technology Course Assessment Specification*
- ◆ *Advanced Higher Health and Food Technology General Assessment Information*
- ◆ *Advanced Higher Health and Food Technology Course Assessment Task.* This includes further information specifically aimed at candidates.

Course assessment: Question paper

The marks in the question paper will always be awarded for demonstration of the skill required in the question, based on knowledge and understanding of the Course content. Questions will ask learners to explain, evaluate or analyse, and will focus on the Course content listed in the 'Further information on Course coverage' section of the *Advanced Higher Health and Food Technology Course Assessment Specification*.

It may help learners to achieve their optimum mark if they become familiar with the way marks may be allocated, to help them understand the criteria upon which an answer will be judged. They may benefit from practising at organising the relevant knowledge and understanding, and structuring possible answers.

Further information about the content of expected responses and the structure of possible responses is provided in sample question papers. These papers are available on the Advanced Higher subject page of SQA's website.

Further information about the question paper can be found in these documents on the Advanced Higher Health and Food Technology [subject page](#) of SQA's website:

- ◆ Course Assessment Specification
- ◆ Guidance on the use of past paper questions

Appendix 1: Reference documents

The following reference documents will provide useful information and background.

- ◆ Assessment Arrangements (for disabled candidates and/or those with additional support needs) — various publications are available on SQA's website at: www.sqa.org.uk/sqa//14977.html.
- ◆ Building the Curriculum 4: Skills for Learning, Skills for Life and Skills for Work
- ◆ Building the Curriculum 5: A Framework for Assessment
- ◆ [Course Specification](#)
- ◆ [Design Principles for National Courses](#)
- ◆ [Guide to Assessment](#)
- ◆ Principles and practice papers for curriculum areas
- ◆ [SCQF Handbook: User Guide](#) and [SCQF level descriptors](#)
- ◆ [SQA Skills Framework: Skills for Learning, Skills for Life and Skills for Work](#)
- ◆ [Skills for Learning, Skills for Life and Skills for Work: Using the Curriculum Tool](#)
- ◆ [Coursework Authenticity: A Guide for Teachers and Lecturers](#)

Appendix 2: Resources for learning and teaching

| Name of organisation/source | Possible resources available |
|----------------------------------|---|
| Food Standards Scotland | Food hygiene and safety information. |
| British Nutrition Foundation | Information on nutrition, healthy eating, lifestyles, dietary diseases, nutritional analysis programme, sensory testing, podcasts, cooking videos, downloadable and interactive resources and more. |
| BBC Bitesize | Information on nutritional properties, functional properties, food product development, social and environmental issues and more. |
| The Association of UK Dieticians | Information on nutrition and current diet and health issues |
| The Vegetarian Society | Information about types of vegetarian, vegetarian nutrition and approved products |
| The Soil Association | Information about organic principles and standards, farming, food and more |
| Ethical Consumer | Information about a wide range of ethically sourced foods and other products. |
| Fairtrade Foundation | Information about the ethics of Fairtrade and Fairtrade products. |
| Scottish Government | Current national food and health strategies |

Administrative information

Published: May 2015 (version 2.0)

History of changes to Advanced Higher Course/Unit Support Notes

| Course details | Version | Description of change | Authorised by | Date |
|----------------|---------|---|-----------------------------------|----------|
| | 2.0 | Changes to wording of Course aims, to Assessment Standards and to the titles of the stages in the project, to reflect changes in mandatory documents. Information added to support learning and teaching, and strategies for assessment. | Qualification Development Manager | May 2015 |
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