

Unit title: Textile Technologies (National 5)

Unit code: HJ3X 75

Superclass: WH

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Unit purpose

This unit introduces learners to textile fibres, functions and structures in an industrial context. It also gives the learners opportunities to explore the environmental considerations of the textile industry.

Textiles are not limited to fashion or interiors, they are commonly used in industry, sport, medicine and construction. This unit gives learners an awareness of the range of uses of textiles and a background to consider potential employment opportunities and career progression in the textiles industry.

Outcomes

On successful completion of the unit the learner will be able to:

- 1 Identify the main fibres used in the textiles industry, their origins and characteristics.
- 2 Explain the structure of knitted, woven and bonded fabrics.
- 3 Identify a range of Smart and Modern textiles and their uses.
- 4 Identify the environmental considerations within the textile industry.

Credit points and level

2 National unit credits at National 5: (12 SCQF credit points at National 5)

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Recommended entry to the unit

Entry to this unit is at the discretion of the centre.

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the support notes for this unit specification.

There is no automatic certification of Core Skills or Core Skill components in this unit.

Context for delivery

If this unit is delivered as part of a course, it is recommended that it should be taught and assessed within the subject area of the course to which it contributes.

The Assessment Support Pack (ASP) for this unit provides assessment and marking guidelines that exemplify the national standard for achievement. Centres wishing to develop their own assessments should refer to the ASP to ensure a comparable standard. A list of existing ASPs is available to download from SQA's website (<http://www.sqa.org.uk/sqa/46233.2769.html>).

Equality and inclusion

This unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements.

National unit specification: Statement of standards

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Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

Outcome 1

Identify the main fibres used in the textiles industry, their origins and characteristics.

Performance criteria

- (a) Describe natural, synthetic and cellulosic fibres.
- (b) Identify the fibre origins and how yarns are made from these fibres.
- (c) Understand the characteristics of these yarns

Outcome 2

Explain the structure of knitted, woven and bonded fabrics.

Performance criteria

- (a) Describe the structures of knitted, woven and bonded fabrics.
- (b) Analyse one product made from each structure.

Outcome 3

Identify a range of Smart and Modern textiles and their uses.

Performance criteria

- (a) Describe the difference between Smart and Modern textiles.
- (b) Analyse two products, one made in Smart textiles, one made in Modern textiles.

Outcome 4

Identify the environmental considerations within the textile industry.

Performance criteria

- (a) Identify the key areas of environmental impact in textile manufacture.
- (b) Describe two changes that are taking place to improve environmental performance.

National unit specification: Statement of standards

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Evidence requirements for this unit

Assessors should use their professional judgement, subject knowledge and experience, and understanding of their learners, to determine the most appropriate ways to generate evidence and the conditions and contexts in which they are used.

Evidence is required to demonstrate that learners have achieved all outcomes and performance criteria.

This assessment should take place in open-book controlled conditions. Where the learner answers orally, the assessor must complete an assessment checklist.

Learners are required to produce a portfolio of evidence. The evidence must include:

Outcome 1

- ◆ A clear description of the origins and production processes of natural, synthetic and cellulosic yarns.
- ◆ Clearly present the findings from practical research of natural, synthetic and cellulosic fibres, presenting results in terms of industry information, ie stretch, absorption, flammability, wear, insulation and shrinkage in washing.

Outcome 2

- ◆ Describe the structure of knitted, woven and bonded fabrics.
- ◆ Product analysis of one woven, one knitted and one bonded textile product, explaining why the textile construction is suited to the product's function.

Outcome 3

- ◆ Illustrate the difference between smart and modern textiles.
- ◆ Analyse two products, one made in smart textiles, one made in modern textiles, clearly explaining the textile construction and how this affects the function of each product.

Outcome 4

- ◆ Presenting the findings on a minimum of four key areas of environmental impact and two improvements with outcomes.

National unit specification: Statement of standards (cont)

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Development of skills for learning, skills for life and skills for work

It is expected that learners will develop broad, generic skills through this unit. Employability is a key aspect of Skills for Work and is present throughout the unit. In addition, there are a number of other skills that learners will be expected to improve on and develop as they undertake this unit, these can be drawn from the main skills areas listed below. These must be built into the unit where there are appropriate opportunities.

1 Literacy

- 1.1 Reading, in research
- 1.2 Writing, to present research and observations
- 1.3 Listening and talking, in group discussions and investigations

2 Numeracy

- 2.3 Information handling, when analysing results from fabric testing

3 Health and Wellbeing

- 3.1 Personal learning
- 3.4 Planning work and making choices

4 Employability, enterprise and citizenship

- 4.1 Employability
- 4.3 Working with others
- 4.6 Citizenship, awareness of environmental issues, working with industry

5 Thinking Skills

- 5.1 Remembering
- 5.2 Understanding
- 5.4 Analysing and evaluating

Amplification of these is given in SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work*. The level of these skills should be at the same SCQF level as the unit and be consistent with the SCQF level descriptor. Further information on building in skills for learning, skills for life and skills for work is given in the *National unit support notes*.

National unit support notes

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Unit support notes are offered as guidance and are not mandatory.

While the exact time allocated to this unit is at the discretion of the centre, the notional design length is 80 hours.

Guidance on the content and context for this unit

This unit is a mandatory unit within the Skills for Work in the Textile Industry Course, and can be taken as a stand-alone unit. It is intended to introduce learners to the textile technologies used within the industry. The main focus of the unit is the handling and analysis of fibres and fabrics. Engagement with local industry will help to contextualize the content with real life experiences.

Outcome 1 covers the main fibres used in the textiles industry and learners should be made aware of the yarns that are produced.

Outcome 2 gives an understanding of the structures of fabrics used.

Outcome 3 looks at Smart and Modern textiles, and the impact they have. Learners will be given the opportunity to analyse each, and give feedback on their intended use.

Outcome 4 will give learners an insight into environmental considerations, and to contextualize this with examples of current changes that are taking place to improve their performance.

The aim of this unit is to engage learners in the practical understanding of textile technologies, which includes the manufacturing process, the different fibres used, fabrics created from the fibres and environmental considerations to be taken. It aims to interest and excite learners in order to develop an interest in furthering their study of the subject, or giving them the basic core knowledge to consider entering into employment in the textile industry.

The unit has been designed to encourage practical handling and analysis of fibres and fabrics, as the sensory and practical nature of textiles is key to learners gaining a greater understanding. Where possible, engagement with local industry can provide materials, guidance and real life experiences.

The unit also aims to encourage group work, discussion and develop presentational skills, all of which will help to develop essential work skills.

National unit support notes (cont)

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Learners who complete this unit will be able to:

- ◆ understand the different sources of fibres and the affect these have on the final textiles.
- ◆ have gained knowledge of a range of textile structures and the effect on function.
- ◆ have an understanding of production methods used in the manufacture of textiles.
- ◆ have gained awareness of the environmental considerations of the textile industry.
- ◆ undertake independent study and present personal and group findings in a portfolio.

Guidance on approaches to delivery of this unit

Centres should ensure that a brief introduction to the unit is given, which will enable learners to understand what is fully required and the approaches to be adopted. It is important that those responsible for the delivery of the unit specify where opportunities arise to develop employability skills and practical skills.

Each outcome will determine how the teaching is approached and learners may be helped by:

- ◆ handling samples and deconstructing textiles and fibres.
- ◆ devising testing charts to be completed with individual and group observations, replicating standard testing.
- ◆ researching manufacturing processes both on line and in text books, particularly for illustrations of fibres and constructions.
- ◆ communication with industry wherever possible.
- ◆ working individually to present findings in a portfolio.
- ◆ presenting findings to the class, individually or as a group and participating in discussion.
- ◆ using technical publications, video, images, internet searches and books to find the most suitable information for each outcome.
- ◆ being encouraged to extend the level of research according to ability and time available.

Guidance on approaches to assessment of this unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

National unit support notes (cont)

Unit title: Textile Technologies (National 5)

Evidence can be generated using different types of assessment. Assessors should use their professional judgement, subject knowledge and experience, and understanding of their learners, to determine the most appropriate ways to generate evidence and the conditions and contexts in which they are used.

Where possible, learners should experience a wide range of learning opportunities including group work, individual research, shared projects, practical experiments and presentations.

The range of suggested methods of assessment is designed to develop life and work skills in the following areas:

- ◆ Time management — meeting deadlines and completing tasks
- ◆ Analytical and interpretative skills — analysing data and collecting information
- ◆ Presentation skills — producing information to be shared with other learners
- ◆ Independent learning - producing individual portfolio work, observations and analysis
- ◆ Responsibility — taking charge of their learning and producing the outcomes required
- ◆ Confidence — working and presenting information to classmates as well as meeting individuals from industry
- ◆ Citizenship — making contact with industry and understanding the environmental impact of textiles

The outcomes can be assessed by creating a portfolio of work that brings together the learners findings from the work carried out by undertaking each performance criteria.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

Opportunities for e-assessment

E-assessment may be appropriate for some assessments in this unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the evidence requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at www.sqa.org.uk/e-assessment.

National unit support notes (cont)

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Opportunities for developing Core Skills

Oral communication at SCQF level 4

The delivery and assessment of this unit may offer opportunities to develop this core skill. Oral Communication at SCQF level 4 involves using suitable language in a clear manner to express information, opinions or ideas in a logical way. Presentation can be incorporated into Outcome 1 or 2, where a practical demonstration of findings would be suitable. Expressing ideas and observations clearly in a verbal format and using practical examples, could meet this criteria.

Written Communication (Reading) at SCQF level 4

The delivery and assessment of this unit may offer opportunities to develop this Core Skill. Written Communication (Reading) at SCQF level 4 involves giving an accurate account of important ideas or significant information in a written communication of non-fiction. This can be demonstrated in Outcome 3, where students are required to research areas of environmental impact and the improvements industry are making.

Written Communication (Writing) at SCQF level 5

The delivery and assessment of this unit may offer opportunities to develop this Core Skill. Written Communication (Writing) at SCQF level 5 involves presenting all ideas/information and supporting detail in a logical and effective order. This can be demonstrated in Outcome 4, where students have to clearly express the textile construction of selected Smart and Modern textiles and this would best be done in a written format with diagrams/illustrations.

Using Number at SCQF level 4

The delivery and assessment of this unit may offer opportunities to develop this Core Skill. Using Number at SCQF level 4 involves working confidently with basic numerical notation. This can be demonstrated in Outcome 1, where students research the different behavioural characteristics of fibres and fabrics. The differences in performance can be measured in mathematical terms, eg percentage, weight, lengths of fibres, etc and presented in a chart format with clear comparisons.

Accessing information at SCQF level 5

The delivery and assessment of this unit may offer opportunities to develop this Core Skill. Accessing Information at SCQF level 5 involves using a variety of sources and methods to draw together information on a selection of individual topics. This can be demonstrated in research in Outcomes 2, 3 and 4, where the students are required to research before they can draw conclusions and present their work.

Critical Thinking at SCQF level 5

The delivery and assessment of this unit may offer opportunities to develop this Core Skill. Critical Thinking at SCQF level 5 involves identifying the factors involved in a situation and issue. This can be demonstrated in Outcome 2, with the analysis of why the textile construction is suited to the product's function. In Outcome 3, students are

required to undertake research on the environmental impact of the textile industry and research areas of work to minimise environmental damage.

General information for learners

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This section will help you decide whether this is the unit for you by explaining what the unit is about, what you should know or be able to do before you start, what you will need to do during the unit and opportunities for further learning and employment.

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The unit is an introduction to textile technologies, looking at fibres, construction and manufacturing.

The unit involves practical investigation, research and observation, team work as well as individual study and presentation of findings. Handling fibres, fabrics and testing performance is an engaging method of learning. Whenever possible, visits to textile manufacturing sites will show the processes in practice. Knowledge about the ways in which textiles are developed to meet the needs of the end product can increase awareness of textiles in everyday and specialist use.

This unit will provide you with knowledge that will enhance your employability opportunities and will help you to develop essential skills that are beneficial for further study.

The unit develops an understanding of where textiles are used daily, not only in the clothes we wear but in the objects we handle, as well as those that are essential to specific activities.

Learning in the context of group work, study and practical investigation develops skills for life, learning and work. It develops organisational, communication, research and analytical skills, as well as the ability to present individual work. Learning through a combination of practical, observational, shared and individual activities can develop personal confidence as well as knowledge based skills.

Administrative information

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Superclass: WH

History of changes to National unit specification

Version	Description of change	Authorised by	Date

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