

Numeracy

Student Introductory Guide

[HIGHER]

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What this unit is about

This core skills unit seeks to develop your ability to interpret and also to produce a wide range of graphs, charts and other methods of illustrating data as part of the process of analysing it. It also hopes to develop, or perhaps introduce, a wide variety of the numerical concepts or processes that are part of the portfolio of skills required for everyday problem solving at lower management level posts in business, administration and technician occupations.

Outcomes

1. Analyse and interpret graphical forms
2. Select and use graphical forms
3. Apply a wide range of numerical and statistical skills

On completion of this unit you should be able to

- interpret a very wide variety of graphical forms, and if you come across one you haven't seen before, not to be afraid of it
- select and produce a graphical form appropriate to the data it is to illustrate
- carry out a wide variety of numerical tasks.

Prior experience

While entry is at the discretion of the centre, you would normally be expected to have attained Numeracy (Intermediate 2).

Progression

At the time of publication this is the highest level of Numeracy which is assessed by SQA.

Core skills

Core skills are the skills you need to cope with life both at home and, more importantly, at work. They are not new. But if we don't use some of them for a long time we forget them, and so we need to brush them up occasionally as well as develop and extend them. The material in this study package will build on the good work you've already done at school, or previously in college, or as part of your employment.

Employers, colleges and universities are giving more and more weight to the importance of core skills. Learning them doesn't begin or end with National Qualifications, but for the record, the core skills covered in National Qualifications are:

- Communication
- Information Technology

- Numeracy
- Problem Solving
- Working With Others

As you see, these skills are applicable to many disciplines and types of work. They are, or should be, transferable. For example, the problem-solving skills you pick up in one job should stand you in good stead if you transfer to another job which is totally different.

The attainment of this unit will lead to the automatic award of

- Numeracy at Higher

This pack consists of a Student Introductory Guide and **two** Study Sections as indicated below. Each Study Section is based on a different outcome(s).

Student Introductory Guide

Pages: 14

Study time: 1 hour

**Outcome 1/2: Interpreting Graphical Information and
Using Graphical Information**

Pages: 54

Study time: 15-20 hours

Outcome 3: Numerical Skills

Pages: 143

Study time: 20-25 hours

How to use this pack

This pack has been designed to cover the syllabus requirements for the SQA National Unit, Numeracy (Higher). It is worth spending a little time making yourself familiar with the materials. Read through this introductory guide, even though it may be a bit boring, and then have a scan through the first Study Section.

Unit Study Sections

Each Study Section of this pack contains the following:

- Contents page
- An introduction to the section
 - what the section is about
 - the objectives of the section
 - other resources required which are not included in the package
- Assessment information
 - this will have to be communicated by the tutor

- Subject content, including
 - Self Assessed Questions (SAQs) and Tutor Assignments (TAs)
 - answers to exercises

Approximate study time

The notional design length for this course is 40 hours, but this will depend very much on how much you already know, and also on how much time you can devote to studying. The study times quoted should be used as a very rough guide.

Activities

An activity is a short piece of work for you to carry out or think about. It is generally less demanding than an SAQ. You should check the answers/comments for the activity before carrying on with the study section.

Symbols used in the pack

This learning pack allows you to work on your own with tutor support. As you work through the course, you'll encounter certain symbols which indicate that something follows that you're expected to do. An explanation of these symbols follows:

Self Assessed Questions



This symbol is used to indicate a Self Assessed Question (SAQ). SAQs are most commonly used to check your understanding of the material that has already been covered in the Study Sections.

This type of assessment is self-contained, that is to say that everything is provided within the Study Section to enable you to check your understanding of the materials.

The process is simple:

- You are set SAQs throughout the Study Section. These will take the form of e.g. short-answer questions, etc. You respond to these, usually by writing in your own notebook.
- On completion of the SAQ, you turn to the back of the section to compare the SAQ responses to yours.
- If you're not satisfied after checking out your responses, turn to the appropriate part of the Study Section and go over the topic again.

Remember – the answers to SAQs are contained within the study materials. You're not expected to 'guess' at these answers.

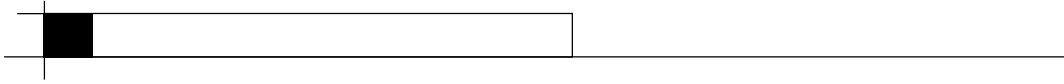
Tutor Assignment



This symbol indicates a Tutor Assignment (TA). These are usually found at the end of each Study Section. The aim of the TA is to cover and/or incorporate the main topics of the Study Section and prepare you for unit (summative) assessment for the outcome.

The normal procedure is that you should send the solutions to each Tutor Assignment to your tutor. Your tutor will mark them, then give you feedback about your performance.

This is usually done before you attempt an actual assessment. Hopefully the types of questions you see in the TA won't be a million miles away from the type and style for questions you will meet in the assessment.



Doing well in any assessment involves:

- being clear about how you will be assessed
- knowing when your learning will be assessed
- as an open learning student, knowing where learning will be assessed.

How you will be assessed

Throughout each Study Section of this learning pack, a series of Self Assessed Questions (SAQs) and exercises has been developed to provide you with 'on the spot' feedback about your progress within the relevant section. If you haven't arrived at the correct responses to SAQs and exercises, you should return to the relevant areas for further study, before progressing within the section.

Upon successful completion of all SAQs and exercises, you'll be asked to attempt a Tutor Assignment (TA). Each Section usually finishes with a TA and each Assignment has been devised as a means of assessing your progress on the knowledge and understanding required for your SQA unit. Generally, the requirements of the TAs closely match the outcomes of the unit.

If you're in any doubt about the completion of TAs or any aspect of assessment, you should contact your tutor for help.

When and where you will be assessed

When you feel you are thoroughly familiar with the learning materials, and have worked through the SAQs, exercises and TAs, you will undertake unit (summative) assessments. These unit assessments will be set and marked by your tutor.

Unit assessments may be undertaken at your school/college, or elsewhere, under supervision. The results of unit assessments are recorded by your tutor and form the basis of your final results within this unit. Your tutor will organise all the necessary paperwork and inform you of your successful completion of the unit.

Your tutor will help you decide whether or not you are fully prepared for your assessment and what procedures should be followed.

What you have to achieve

All outcomes have to be assessed and the objective of this 40-hour unit is that you will achieve Outcomes 1, 2 and 3 of SQA unit D01C 12 Numeracy (Higher).

Opportunities for reassessment

If you don't achieve the required standard for the award of 'pass' within any assessment you'll be informed of this and arrangements will be made for you to be reassessed on the particular elements of the assessment which need improving.

Other resources required

You will need a good calculator. Good does not necessarily mean expensive. What you are looking for is a scientific calculator, not because of all the trigonometric functions, which you won't be using, but because of the way it works. A basic '4 rules and percentage' calculator is not really the most suitable at this level. A scientific calculator can cost well under £10.

You might even consider buying a good scientific calculator with statistical functions (look for regression in the description) or even a graphic calculator. A good graphic calculator will set you back no more than £30 at the time of writing and might be a lot less by the time you read this. In fact, an increasing number of scientific (but non-graphic) calculators now contain some very sophisticated statistical functions.

And try to get in the habit of paying attention to graphs, charts and tables when you read the newspapers. You'll be surprised how many you'll find when you start looking for them.

If you are working with numeracy at Higher level, you are probably familiar with computer-generated graphs, either at home, at school or as part of your employment. Outcome 1 allows you the use of this facility if you wish it.

PART 4

When you enrol for this unit you'll either be given a timetable or you'll receive details of your tutor and contact information, i.e. the day, time, telephone/e-mail number where you can make contact.

For easy reference, this information may be recorded on the Tutor Details Form below.

Tutor Details Form

Tutor's name: _____

Address (for correspondence and assignments):

Telephone number: _____

Fax number: _____

E-mail address: _____

Times available for contact: Day/Evening: _____

Times: _____

Attendance requirement if applicable: _____

Remember – your tutor is your main support throughout your course, so if you have any problems, don't hesitate to get in touch.

Before moving on to the Study Sections, you may want to check your general understanding of the open learning materials for your unit. You can do this by attempting the following activity.

A For this activity, you will need to refer to this Introductory Guide to your course.

(Tick boxes where appropriate.)

- 1 The title of the unit I am about to study is: _____

- 2 The unit number is: _____
- 3 This unit should take me: 40 hrs 80 hrs
to complete, although I may complete before or after this.
- 4 I will require to undertake 2 3 4 5 More outcome
assessments successfully in order to receive my SQA certificate.
- 5 I have checked out from the Introductory Guide to my unit what form my
assessments will take. Yes No
- 6 My tutor's name is: _____
- 7 I can contact my tutor on: Day/Evening: _____
from: Time: _____ Tel no: _____
E-mail address: _____
- 8 I feel happy about starting to study my unit. Yes No
- 9 If not, I will contact my tutor or learning centre for further information before
I begin. Yes No
- 10 I will make myself thoroughly familiar with the requirements of this unit before
moving on. Yes No

Many of the responses to this activity will be unique to you, but if you're still unsure about any of the above you should contact your tutor.

Good luck with your studies!

PART 5

Your school or college is very interested in the views of students who have used these learning materials. Your feedback and comments will assist us in evaluating and, where necessary, improving this package for future student use.

We would be grateful if you would spend a little time completing and returning this form to your tutor.

Please answer all of the questions as fully and frankly as possible. Please rate the materials by placing a tick in the appropriate box and adding relevant comments in the space provided.

Thank you for your assistance.

- | | | | | | |
|---|---|---|-----------------------------------|--------------------------------------|--|
| 1 | Sufficient advice was given in the materials on how to use the pack | Agree
Strongly
<input type="checkbox"/> | Agree
<input type="checkbox"/> | Disagree
<input type="checkbox"/> | Disagree
Strongly
<input type="checkbox"/> |
| 2 | The content was set at an appropriate level for me | Agree
Strongly
<input type="checkbox"/> | Agree
<input type="checkbox"/> | Disagree
<input type="checkbox"/> | Disagree
Strongly
<input type="checkbox"/> |
| 3 | The language used was at an appropriate level for me | Agree
Strongly
<input type="checkbox"/> | Agree
<input type="checkbox"/> | Disagree
<input type="checkbox"/> | Disagree
Strongly
<input type="checkbox"/> |
| 4 | I understood clearly what was expected of me for each Study Section | Agree
Strongly
<input type="checkbox"/> | Agree
<input type="checkbox"/> | Disagree
<input type="checkbox"/> | Disagree
Strongly
<input type="checkbox"/> |
| 5 | The content of each section was enough to allow me to meet these expectations | Agree
Strongly
<input type="checkbox"/> | Agree
<input type="checkbox"/> | Disagree
<input type="checkbox"/> | Disagree
Strongly
<input type="checkbox"/> |

contd overleaf

STUDENT EVALUATION QUESTIONNAIRE

- 6 There were enough appropriate exercises in the pack Agree Strongly Agree Disagree Disagree Strongly
- 7 There were enough appropriate Self Assessed Questions in the pack Agree Strongly Agree Disagree Disagree Strongly
- 8 Feedback to exercises and SAQs was included to let me monitor my progress Agree Strongly Agree Disagree Disagree Strongly
- 9 All the information I required regarding assessment was included Agree Strongly Agree Disagree Disagree Strongly
- 10 Advice was included to assist me if I was having any problems Agree Strongly Agree Disagree Disagree Strongly
- 11 The pack was organised in such a way that it was easy to follow Agree Strongly Agree Disagree Disagree Strongly
- 12 This pack is appropriate for use with a minimum of contact with my tutor Agree Strongly Agree Disagree Disagree Strongly
- 13 Overall I would rate this pack as Very Good Good Poor Very Poor

Name _____ School/College _____ Date _____

Thank you once again for your assistance. Please give completed forms to your tutor.