

The Key Skills qualification was made available from September 2000 and is designed to allow students to demonstrate and improve their proficiency in up to six different areas. The three main Key Skills are:

- Communication
- Application of Number
- Information Technology.

Together these make up the Key Skills qualification. The three wider Key Skills are:

- Working with Others
- Improving own Learning and Performance
- Problem Solving.

The first three Key Skills are available at different levels (1 to 5) with each level representing a progression from one to the next. The last three Key Skills are available from Levels 1 to 3.

Key Skills may be obtained from NVQs, GNVQs, GCE AS/A-Levels or the International Baccalaureate. This handbook is concerned with the Application of Number Key Skill at Level 3.

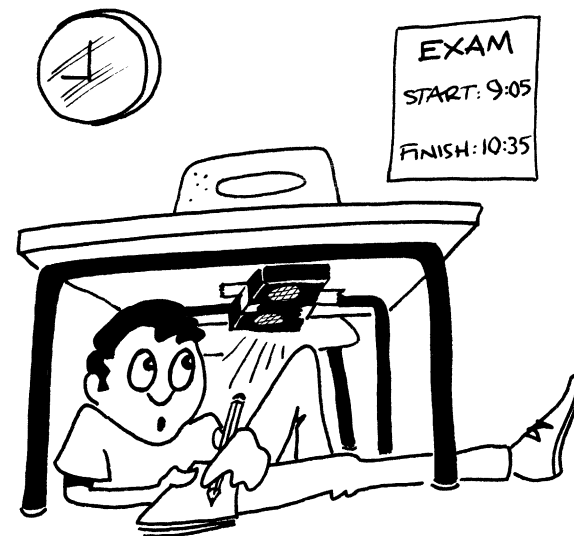
Obtaining your certificates

In order to secure this qualification, you will need to provide evidence, either through specially designated tasks, or through tasks in courses you are already studying. This evidence should then be collected together in a clearly indexed portfolio.

There will be an internal assessment of your portfolio. It will be assessed by your teachers and verified (checked) by the examination board.

When your portfolio material reaches a satisfactory standard, it will be signed off by the Standards Moderator (external examiner) and you will receive a Unit Certificate.

You will also need to pass an externally-verified examination, lasting 90 minutes. This is called an External Assessment Instrument (EAI). The test will consist of questions equivalent to Level 7 of the National Curriculum (ie about Grade C GCSE). When you pass an EAI, you receive a Test Certificate.



'Your assignment, should you choose to accept it...'

Using this handbook

This handbook is presented via four main parts:

- *Part 1* explains Application of Number and how you need to apply your number skills.
- *Part 2* explains what is needed for your portfolio in order to obtain your Unit Certificate. It offers a sample assignment to show you how a portfolio can be put together.
- *Part 3* offers revision notes.
- *Part 4* offers a sample examination and advice to help you with the Test Certificate.

Using ICT

Your assignment provides an ideal way to use Information and Communication Technology (ICT).

ICT can be used for your graphs and diagrams. It will allow you to present information in attractive visual form. However, you must always justify your choice of graph. The information provided must be **meaningful**. Don't use a computer image unless it shows the data in a clear, easy-to-understand form.



Checking accuracy

If you use Information and Communication Technology to produce graphs, diagrams and charts, you must fully explain them and check their accuracy.

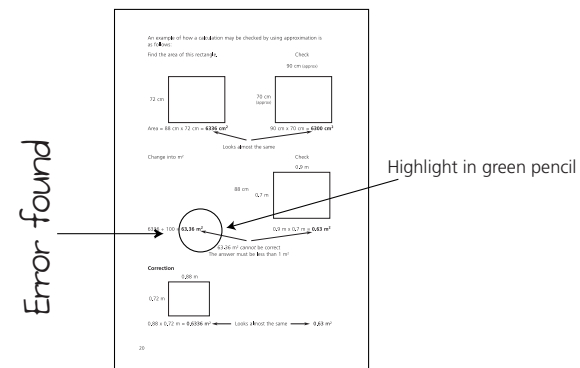
Suppose you use ICT to produce a pie chart, you must also show how to calculate the angles at the centre of the pie chart (see page 97).

Checking your work

You must show evidence of checking your work. This can be difficult. You should use either method 1 or 2.

Method 1

If you check your work and find an error, write 'Error found' on the side of the paper.



Highlight the error in coloured pencil.

Add an extra page at this point in your assignment explaining how you found your error and corrected it.

See page 47 of the sample assignment for an example.

Method 2

If you check your work and find an error, rewrite the page with the correct maths. Put a note saying 'See Appendix A'.

Add an appendix (ie a short section at the end of your assignment) entitled 'Errors'. In the 'Errors' appendix place all of your mistakes and explain how you checked, found and corrected them.

You must also check by using approximation. This section should be called 'Checking procedures'. You must show a couple of checks for each section, ie:

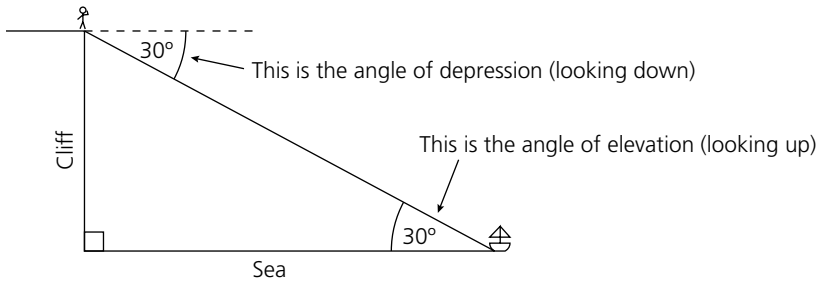
- amounts and sizes
- scales and proportion
- handling statistics
- rearranging and using formulae.



He was carefully checking his work!

Trigonometry: Solving problems

This diagram shows a man at the top of a cliff looking down at a boat.



Note: The angle of depression from the top of the cliff is equal to the angle of elevation from the boat.

Angles of depression and angles of elevation are measured from the horizontal.

Answering questions

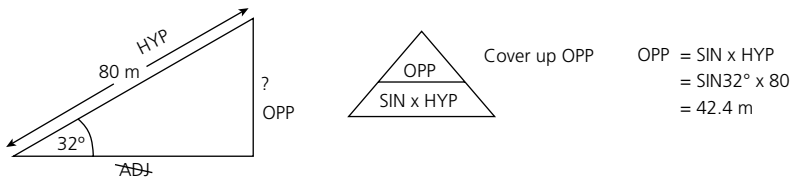
- 1 Read the question carefully.
- 2 It may help to visualise what is required. You can use objects such as pencils, rubbers, rulers to make a model of what is required.
- 3 Draw a diagram. Remember you need a right-angled triangle.
- 4 Read the question again. Check that your diagram is correct.

Question

Sarah is flying a kite. The string is 80 m long and the angle of elevation is 32° . How high is the kite?

Answer

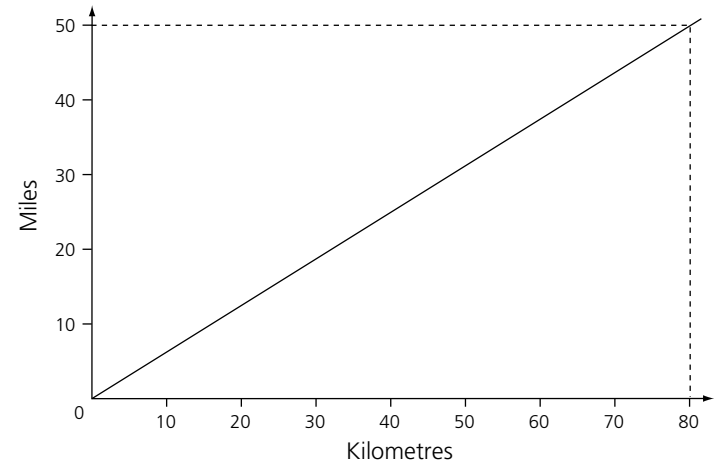
Draw a diagram.



Tables and graphs

Information can be obtained from graphs. You need to know how to extract the information you need.

This is a conversion graph for changing miles into kilometres.



Examples

- 1 The distance from Exeter to Dorchester is 50 miles. How far is this in kilometres?
Method: Find 50 miles on the graph. Draw a dotted line from the 50 mile mark to the conversion line. Draw a dotted line from the point it meets the conversion line to the kilometres scale. The distance is 80 kilometres.
- 2 Convert 300 kilometres into miles.
Method: The scale does not have 300 kilometres. Use 30 kilometres instead. 30 is about 19 miles. Therefore 300 kilometres is about 190 miles.

Questions

- 1 Convert 50 kilometres into miles.
- 2 Convert 30 miles into kilometres.

Answers

- 1 31 or 32 miles
 - 2 48 kilometres
- Your answers need not be exact.

Examination advice

Read the following advice before taking the sample examination on pages 101 to 110.

- Make sure you take the following equipment to the exam: pen, pencil, ruler, rubber, pair of compasses, protractor, and scientific calculator.
- Read all instructions.
- Read each question. Make sure you understand what you are required to do.



Students often drop pints by misreading the question!

- Show all working. Marks are given for working.
- Check your answers to make sure they are sensible.
- If you cannot do a question, move on. Return to it later.
- Make sure you answer all of the questions.
- Do not spend too much time on any single question in part 1.
- You should spend about 45 minutes on part 1 and 45 minutes on part 2.
- If you finish early, go back and check your answers.
- Learn these formulae:

$$\text{SIN} = \frac{\text{OPP}}{\text{HYP}}$$

$$\text{COS} = \frac{\text{ADJ}}{\text{HYP}}$$

$$\text{TAN} = \frac{\text{OPP}}{\text{ADJ}}$$

Pythagoras' theorem
 $a^2 = b^2 + c^2$



Circumference of a circle = $2\pi r$

Area of a circle = πr^2

Area of a triangle = $\frac{1}{2}$ base x height

Sample examination

Key Skills Level 3 Application of Number

A scientific calculator should be used.

Time allowed: 90 minutes

Write clearly so that your work can be easily understood.

You should show all working.

You should answer all of the questions.

There are two parts to the examination:

- Part 1: Short answer questions (25 marks).
- Part 2: Extended answer question (25 marks).

Space is allowed within this book for answering the questions in Part 1.