Level 2

Standards for adult numeracy

Understanding and using mathematical information

At this level, adults can:

read and understand

mathematical information used for different purposes and independently select and compare relevant information from a variety of graphical, numerical and written material

specify and describe

a practical activity, problem or task using mathematical information and language to increase understanding and select appropriate methods for carrying through a substantial activity

An adult will be expected to:

- use numbers, fractions, decimals and percentages in the context of measures, estimating amounts and proportions, and make accurate observations
- use shape and space to record relevant measurements and make accurate observations
- use discrete and continuous data from tables, charts, diagrams and line graphs
- collect and record discrete and continuous data in tests and observations
- design appropriate methods
- select and use appropriate mathematical tests, skills or concepts
- recognise that substantial activities should be broken down into smaller, more manageable tasks

Calculating and manipulating mathematical information

At this level, adults can:

generate results

to an appropriate level of accuracy using methods, measures and checking procedures appropriate to the specified purpose

An adult will be expected to:

use whole numbers

- to read, write, order and compare positive and negative numbers of any size in a practical context, *eg loss in trading, low temperatures*
- to carry out calculations with numbers of any size using efficient methods
- to calculate ratio and direct proportion, *eg 3:2*
- to evaluate expressions and make substitutions in given formulae in words and symbols to produce results, *eg area of a room from l x w*

use fractions

- to order and compare amounts or quantities
- to identify equivalencies with decimals and percentages
- to evaluate one number as a fraction of another
- to add and subtract amounts or quantities

use decimals

- to order, approximate and compare decimals when solving practical problems
- to add, subtract, multiply and divide decimals up to three places

use percentages

- to order and compare percentages and understand percentage increase and decrease, *eg VAT or 20 per cent reduction in a sale*
- to find percentage parts of quantities and measurements
- to evaluate one number as a percentage of another

use measures

- to calculate with sums of money and to convert between currencies
- to calculate, measure and record time in different formats
- to estimate, measure and compare length, weight, capacity and temperature using metric and, where appropriate, imperial units, *eg scales to given levels of accuracy, including reading between divisions*
- to calculate with units:
  - within the same system
  - between systems using conversion tables and scales, and approximate conversion factors, *eg 1kg = 2.2lbs, 1in = 2.54cm*
- to understand and use given formulae for finding:
  - perimeters and areas of regular shapes, *eg rectangular and circular surfaces*
  - areas of composite shapes, *eg non-rectangular rooms or plots of land*
  - volumes of regular shapes, *eg cuboid or cylinder*
- to work out dimensions from scale drawings, *eg 1:20*

use shape and space

- to recognise and use common 2-D representations of 3-D objects, *eg in maps and plans*
- to solve problems involving 2-D shapes and parallel lines, *eg in laying down carpet tiles*

use data and statistical measures

- to extract discrete and continuous data from tables, charts, diagrams and line graphs
- to collect, organise and represent discrete and continuous data in tables, charts, diagrams and line graphs
- to find the mean, median and mode and use them as appropriate to compare two sets of data
- to find the range and use it to describe the spread within sets of data

use probability

- to identify the range of possible outcomes of combined events and record information using diagrams or tables

use electronic or mechanical aids

- to calculate efficiently using whole numbers, fractions, decimals, percentages
- to check calculations

Interpreting results and communicating mathematical information

At this level, adults can:

present and explain results

clearly and accurately using numerical, graphical and written formats appropriate to purpose, findings and audience

An adult will be expected to:

- use whole numbers, common fractions, decimals and percentages to present results
- select and use measures and units of measure to define quantities
- use tables, charts, diagrams and line graphs to draw conclusions and present results, *eg for amounts, sizes, scales and statistics*
- use approximation to corroborate and confirm results
- select and use appropriate methods and forms to present and explain outcomes

Guidance and examples

Numeracy level 2

Numeracy plays a fundamental part in adult life. Numeracy is the ability to represent ideas, problems or situations using numerical or mathematical information, work with this information and then present results as solutions or conclusions. Effective numeracy skills support independent living and broaden the choices and opportunities available to individuals.

The examples listed below broadly indicate the types of contexts and situations where adults with skills at this level will be able to use them efficiently.

These activities and applications are given only as guidance. Each adult is different and in real life contexts and situations the range of skills required may vary. It is recognised that not all of these examples will be relevant to each individual's experience, interests and aspirations. For this important reason the guidance should not be seen as definitive or prescriptive of how, when or where skills should be developed, practised or applied.

Examples

Citizen and community

- understanding the relevance of information about local council and government expenditure
- understanding and interpreting data published by the local council and government, *eg on health, housing, crime, unemployment or schools*
- carrying out a survey and presenting information for a local campaign, *eg on street lighting or lower speed limits*

Economic activity, including paid and unpaid work

- comparing products and services and working out 'best buy'
- comparing costs of different methods of payment for goods and services, *eg cash, direct debit or monthly payments*
- comparing financial services offered by banks, building societies and brokers, *eg loans, credit facilities*
- understanding and interpreting data used in advertising
- working out the real cost of items when prices are given excluding VAT

Domestic and everyday life

- working out a personal or family budget
- working out how many tiles are needed to tile an area
- working out quantities required and the cost of materials for home decoration, *eg paint, wallpaper*
- understanding and using nutritional information on food packages, particularly for children, pregnant women and the elderly

Leisure

- converting distances on road signs from kilometres to miles when travelling abroad
- drawing a map for others that shows how to find a location, *eg a cinema or restaurant*
- laying out templates on material to minimise wastage, *eg from diagrams, plans or patterns*

Education and training

- using a calculator to confirm or provide accurate solutions to an appropriate level of accuracy
- using measuring instruments that are essential for training, *eg a micrometer in engineering*
- interpreting numerical data that is specific to occupational sectors, *eg hospitality and catering*

Using ICT in social roles

- using a spreadsheet model to make and test predictions
- using software to draw charts and graphs from data
- formatting data and documents using different software packages, *eg row and column sizes, positioning images, setting margins*

At this level adults are confident and capable of selecting and using a variety of communication strategies appropriately and effectively in a range of familiar and unfamiliar contexts and situations. Adults are also able to adapt their speech and written communications to medium and context using a range of strategies.

Access statement

Adults with a disability may have special learning requirements and be unable to demonstrate certain of the capabilities or skills specified in the standards. As a reasonable adjustment and to aid access, it is recommended that alternative methods are investigated to allow individuals to demonstrate their abilities.

Curriculum developers and qualification designers are expected to produce guidance for centres on recognising special learning requirements. This guidance should be supported by a framework for identifying and adopting appropriate alternative approaches.