

Unit 18: Support Numeracy Development

Unit code: A/601/7716

QCF Level 3: Specialist

Credit value: 3

Guided learning hours: 18

Unit aim

This unit provides the knowledge, understanding and skills to support numeracy development. This includes understanding national and organisational frameworks for mathematics and using skills and techniques to support learners in developing numeracy skills and using and applying mathematics.

Unit introduction

The unit focuses on supporting pupils, individually and in groups, to improve their standards of numeracy and enable pupils to use and apply aspects of mathematics to solve problems.

The unit aims to develop learner understanding of how numeracy skills develop and how to positively influence the development of mathematical concepts and skills. Learners will also explore current national initiatives for developing pupils' numeracy. Learners will investigate a range of different approaches for supporting pupils' numeracy development before they go on to support the needs of pupils.

Learners will gain an understanding of how to help pupils participate in class and to work on individual activities for numeracy development. This involves identifying and applying appropriate learning activities. Learners should gain experience of working with individual or small groups of pupils. Learners will need to be clear as to their role and should be able feed back to the teacher on the success of learning activities and progress of individual pupils.

Learners will understand the policies relevant to the development of literacy at both a national and school level and have an understanding of how they are age related and have developed over time, for example engaging in dialogue with pupils using the appropriate subject-specific language and a range of symbols or mathematical diagrams. Learners will be able to prompt and question pupils and provide guidance on the use of the correct or appropriate mathematical techniques and resources to solve problems.

Learning outcomes and assessment criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

On completion of this unit a learner should:

Learning outcomes	Assessment criteria
1 Understand current national and organisational frameworks for mathematics	1.1 Explain the aims and importance of learning provision for numeracy development 1.2 Summarise the national curriculum framework for mathematics including age-related expectations of learners as relevant to the setting 1.3 Summarise the organisation's policy and curriculum framework for mathematics 1.4 Explain the teacher's programme and plans for mathematics teaching and learning
2 Be able to support learners in developing numeracy skills	2.1 Use a range of strategies for supporting learners to develop numeracy skills 2.2 Select and use support strategies to meet the individual needs and learning targets of learners
3 Be able to support learners in using and applying mathematics	3.1 Use a range of strategies for supporting learners to use and apply mathematics to solve problems 3.2 Select and use support strategies to meet the individual needs and learning targets of learners 3.3 Encourage learners to pursue their own lines of enquiry and find their own solutions to mathematical problems

Unit content

1 **Understand current national and organisational frameworks for mathematics**

Learning provision for numeracy: as appropriate for age, stage and abilities eg numbers, counting, patterns, calculations, shape, space, patterns, estimating, mental arithmetic, quantities

National curriculum framework: National Numeracy Strategy eg Primary Framework for Literacy and Mathematics, the Framework for Secondary Mathematics; policies and practices applicable to the learner's home country

Organisational framework: policies and practices eg support for numeracy, curriculum plans, practices for the assessment of pupil achievement and progress in numeracy

Teacher's programme: guidance for numeracy; vocabulary eg mathematical, curriculum or subject specific, numeracy

2 **Be able to support learners in developing numeracy skills**

Supporting pupils to develop numeracy skills: strategies eg numeracy development in children and young people, age-related expectations, learning through various means

Select and use: range eg support strategies as appropriate to individual pupil needs and/or learning styles, recognising problems or obstacles that might occur, quality of learning resources or learning activities, adapting inadequate learning resources, support eg from dyscalculia advisers

3 **Be able to support learners in using and applying mathematics**

Strategies to use and apply: presenting numerical information in accordance with numeracy conventions eg presentation of numerical statements, graphs and charts

Meeting learning targets of pupils: strategies eg knowing appropriate methods and roles in assessment of numeracy, resources as appropriate for age and abilities, time for working through mathematical problems

Lines of enquiry and solutions: encouragement eg praise and constructive feedback; experimentation; communicating mathematical concepts accurately; alternative methods for resolving the same problem

Essential guidance for tutors

Delivery

It is essential that learners have an accurate grasp of the mathematical concepts needed to support pupils. A useful way of establishing learners' level of competence in using numeracy skills could be to introduce the unit through a series of activities which learners complete collaboratively. The activities could address a range of numeracy concepts and problems, and be similar to those that might be used in their work with pupils. Problem-solving strategies adopted by the class could form the basis of a discussion on different techniques and skills. Learners who may have specific needs could be supported in the first instance through individual tutorials and by specialist additional support if necessary. Discussion of learner experiences of being taught mathematics themselves could raise awareness of how strategies and approaches change over time and of the range of factors that can influence attitudes to and perceptions of abilities and confidence in using numeracy skills.

Understanding how mathematical concepts are learned will require some input from the tutor. Building a resources catalogue, through learners sharing information on the resources they have encountered in their work experience, could be a useful means of extending learner awareness of the different resources available for different mathematical concepts, Key Stages and abilities. Short presentations to their peers about numeracy activities that were carried out successfully with pupils in school could be a good way for learners to develop their ability in communicating numeracy concepts, supported by feedback from the tutor. Role play of giving instructions, for example on how to draw a chart, could be useful to consolidate learner understanding before they work with pupils in a setting. Information about roles and practices in the assessment of pupil achievement in numeracy could be included in this. This could be supplemented by the opportunity to research resources available for supporting numeracy development, for example via the internet, which would be particularly useful for those learners who do not have permanent access to a setting or who have limited access to a setting.

Learners should be aware of relevant strategies and policies applicable to teaching and learning in their home country, for example (in England) Every Child Matters and its goals for improving numeracy standards. Policies at a national and school level may be age related so learners will need to develop an awareness of these. Learners would also benefit from exploring approaches to supporting the development of pupils' numeracy in a multicultural setting where bilingual and/or multilingual pupils are being supported.

Assessment

As part of this unit learners will need to engage in some form of professional discussion or performance review with a class teacher or line manager in the workplace. The learner will need to think about their practice and set targets for personal development.

Assessment criteria 2.1, 2.2, 3.1, 3.2 and 3.3 must be assessed in the workplace.

Suggested assessment activities

To satisfy learning outcome 1 learners should describe current national policies or practices for supporting numeracy development in pupils. They should also describe the organisational policies or practices used in an educational setting. These policies and practices will be those used in the setting in which learners work or where they have experienced supporting numeracy development as part of a work placement.

Learners will need to explain the importance of organisational and national policies in a report to fellow learners that could be in the form of a short presentation. This would develop their confidence in talking about numeracy and also facilitate the sharing of knowledge about approaches to numeracy across a number of organisational settings.

Learning outcomes 2 and 3 could be assessed together in a single task where a learner has access to an appropriate setting and can work with pupils who have specific numeracy needs. Learners could develop a portfolio to illustrate how they have developed the numeracy skills of a group of pupils and introduced activities to enable the pupils to use and apply the skills learned.

Within the portfolio learners should demonstrate how they adapted the materials to meet the needs of individuals and enabled the group to meet the learning outcomes. All learners, therefore, will need to be provided with an opportunity to have their competence assessed in the workplace setting.

Essential resources

As this is a work-based programme, all learners will either be directly involved in pupil support or have access to situations or schools/organisations running teaching and learning activities. All learners will need an opportunity to observe others supporting numeracy in different teaching and learning environments.

It is strongly recommended that this unit is taught by a tutor with an appropriate qualification for supporting numeracy.

Indicative resource materials

Websites

Various websites are available with assessment-related content, some of which will depend on the specific sector, market and organisation. An indicative range of general websites is given below.

www.bis.gov.uk	Department for Business Innovation and Skills
www.cipd.co.uk	Chartered Institute of Personnel and Development
www.edexcel.co.uk	Edexcel
www.education.gov.uk	Department for Education
www.ento.org.uk	ENTO
www.gtce.org.uk	General Teaching Council of England
www.tda.gov.uk	The Training and Development Agency for Schools
www.teachernet.gov.uk	Teachernet