Skills for Life
Professional Development Centre

Advanced Numeracy for Teachers

LOCN Certificate level 3

Scheme handbook

LEWISHAM COLLEGE

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EUROPEAN UNION
European Social Fund

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Section 1 General Information

1.1 Introduction

The Skills for Life Teacher Training team would like to welcome you to the Advanced Numeracy for Teachers course. This is a new course and we are a new team who look forward to working with you over the next two terms.

This handbook is designed to give you vital information and guidance about the course and provide you with a number of forms that you will need to photocopy and use throughout the year. The forms will also be available on the college VLE, Blackboard and you will be able to access them from any computer that has internet access 24/7.

This is a working document and may be added to/amended during the year. Your feedback on the value and practicability of this handbook will be very useful for future improvements.

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1.2 Your role and status

When you join this course, you will be both a student and a teacher, with entitlements as a student and also responsibilities for the learning and welfare of others. This is increasingly common in Life Long Learning and most of us are currently both teachers and learners. It is a developing and changing role and the course is designed to accommodate this. As the course progresses you will be expected to assume autonomy and increasingly take the initiative and be creative as an independent, self-evaluating and confident teacher.

It is important that you feel comfortable with your professional colleagues (fellow students and tutors) and are able to raise issues or question them in a supportive and constructive manner. Your comments and observations will be of great value to tutors and fellow course members if they lead to positive debate and personal or professional development. Negative and unhelpful criticism will be generally discouraged.

We live in a society in which communication is driven by stereotypes that very often embody prejudice and result in inequality. As a course, tutors and course members together, we will always strive to challenge prejudice and inequality as part of the teaching and learning process. We trust that you will share this commitment.

1.3 Your entitlements

- You will be entitled to a tutorial meeting with your tutor at least once a term.

- You will be offered opportunities for discussion about academic or professional problems that may affect your progress and professional development.

- You may see any reports written about you or your work which relate to the course and you will have the opportunity to discuss with the tutors concerned their accuracy and relevance.

- You will be referred to assistance as soon as any learning support needs you may have are identified.

- You will normally receive written feedback for assignments handed in on time within 2 weeks of submission.

1.4 Your responsibilities

- Keep your tutors and the college campus office informed about any changes to your personal contact information.

- Make sure that any personal information is recorded, health or otherwise, that might affect your involvement with the course or your teaching responsibilities.

- Observe the policies, rules and conventions of the college in relation to your status as a student and as a teacher.

- Actively work to further your understanding of teaching and learning in your specialist area.

- Complete the full teaching requirements of the course and keep an accurate log of the extent and nature of your class contact time.

- Recognise your professional responsibility to colleagues on the course by making an active contribution to the teaching and learning activities and reporting information to them accurately and appropriately.

- Attend all your classes punctually. Provide reasons for failure to attend any classes.

- Observe appropriate professional confidentiality in matters related to students, colleagues and fellow course members.

- You will be expected to have basic IT skills for the course. If you feel you need some development with these skills please talk to your tutor who should be able to arrange this for you.

- Provide appropriate feedback to the course team to support the general development of the course.

1.5 Professionalism, attendance and punctuality.

The Advanced Numeracy for Teachers is a professional development course and therefore you will be expected to demonstrate a professional commitment to your teaching and learning activities and responsibilities.

You will be expected to attend all of the sessions. There is an 80% minimum attendance requirement for completion. Failure to meet this may result in failure of that unit.

You are expected to be punctual and attend all teaching sessions and tutorials at the stated times.

1.6 Assignments, deadlines and referrals

All assignments have a deadline date. A deferral request form can be found in this handbook.

Each submitted assignment must include an Assignment Feedback Sheet.

When submitting an assignment it is your responsibility to ensure the tutor signs your Assignment Tracking Form as evidence of submission.

An assignment may be referred with guidance on further work required. When the work is re-submitted it must include the original version with its feedback as well as the amended version of the assignment. Assignments may only be re-submitted twice. All re-submitted work needs to include an Assignment Re-submission Sheet.

1.7 Plagiarism

All work submitted by the student must be his/her own work. The student must ensure:

- Phrases, sentences and passages taken verbatim from a published work are placed in quotation marks, or identified, and the source is acknowledged
- Paraphrasing, ideas and arguments taken from a published work are clearly referenced.
- The inclusion of any other intellectual property, for example, illustrations, diagrams, proofs, designs, computer software, in written text or project work is clearly identified and acknowledged.
- The inclusion of material from electronic sources is carefully referenced and only web sites freely accessible to the marker must be used.
- The use of the work of others is not of such volume or importance to the submitted work as to compromise the student's ownership of the work.
- No significant collaboration has occurred where the student is required to submit the work as an individual piece.

1.8 Student Complaints Procedure

If you have any complaints about the College, you must follow the stages within the Complaints Procedure as set out in the Students Complaints Procedure booklet. Copies are available from the Campus Office.

Section 2 Course Information

Timetable

AUTUMN TERM 2005

Week	Unit	Topic	Assessment information
1 27/9/05	1	• Course induction/intro • Unit 4 introduction • Learning Styles • Maths history	• Handout assignment 1
2 4/10/05	1	• Self assessment checklist for Unit 1 • Commutative, associative and distributive laws • Factors, multiples, order relations, LCM. • Fractions, decimals and percentages. Teaching focus: Teaching place value / fractions	• Hand out assignment 2
3 11/10/05	1	• Ratios, proportion and scales. • Squares, square roots, negative indices and standard form. • Rules of estimation. Teaching focus: Diagnostic assessment	
4 18/10/05	1	• Barriers to learning and learning styles. • Common learners' errors. Teaching focus: Managing ILPs	Take in assignment 1 Handout Assignment 3
Half term			
5 1/11/05	1	• Area and volume of circles and spheres • Geometric proofs. • Draw out plans and elevations Teaching focus: Managing group work	Take in assignment 2
6 8/11/05	1	• Pythagoras' Theorem • Trigonometry Teaching focus: Planning for learning styles	• Take in assignment 2

Week	Unit	Topic	Assessment information
7 15/11/05	1	• Terminology of polygons, symmetry and tessellations. • Transformations. Teaching focus: Using powerpoint	• Take in assignment 3
8 22/11/05	1	• Complex percentages • Direct and indirect proportions using proportionality constant • Revision session Teaching focus: Using art and nature to create a resource for a specific learner	• Hand out Assignment 4
9 29/11/05	1	• Test on unit 1.	• Assessment 1
10 6/12/05	1	• Review of assessment. • Individual tutorials and action plans.	• Take in assignment 4
11 13/12/05	2	• Self assessment for unit 2. • Formulae in real-world situations. • Number sequences and patterns. Teaching focus: To what extent does algebra come into the core curriculum	
Xmas			
12 10/1/06	2	• Solving linear equations. • Simultaneous equations Teaching focus: Writing an ILP from a diagnostic assessment	
13 17/1/06	2	• Triangular number investigation • Plotting graphs using excel Teaching focus: Writing an ILP from a diagnostic assessment	Hand out assignment 5

Week	Unit	Topic	Assessment information
14 24/1/06	2	• Factorising algebraic expressions. • Solveing quadratic equations • Recognise and solve a parabola Teaching focus: Writing an ILP from a diagnostic assessment	
15 31/1/06	2	• Solve quadratic equations; factorisating and formula. • Solve linear equations Teaching focus: Using excel	
16 7/2/06	2	• Writing an algebraic report • Solving an algebra investigation • Plotting graphs using excel / omnigraph Teaching focus: Writing a framework for assignments	
Half term break			
17 21/2/06	2	• Barriers to learning and learning styles. • Common learners' errors. Teaching focus: Carousel of activities	• Hand out Assessment 2
18 28/2/06	2	• Revision session	
19 7/3/06	2	• Test on unit 2.	• Assessment 2 • Take in assignment 5
20 14/3/06	2	• Review of assessment. • Individual tutorials and action plans.	
21 21/3/06	3	• Self-assessment for unit 3 • Handling continuous and discrete data • Distribution of data and normal distribution • Central tendencies Teaching focus: Different ways of teaching averages	

Week	Unit	Topic	Assessment information
22 28/3/06	3	• Sampling techniques • Standard deviation • Determine appropriate averages and measure of dispersion to evaluate data Teaching focus: Using excel	• Handout assignment 6
Easter			
23 18/4/06	3	• Collection and tabulation of data • Class intervals • Cumulative frequency curve and a box and whisker diagram Teaching focus: Encouraging students to gain a feeling and interpret data	
24 25/4/06	3	• Reading a statistical report • Scatter graphs Teaching focus: Structuring a statistical report	
25 2/5/06	3	• Probability rules • Probability scales. • Tree diagrams. Teaching focus: Designing activities for a lesson plan	
26 9/5/06	3	• Sample space diagrams • Dependent/independent events. Teaching focus: Designing activities for a lesson plan	
27 16/5/06	3	• Revision session Teaching focus: Feedback on activities for a lesson plan	

Week	Unit	Topic	Assessment information
Half term			
28 6/6/06	3	• Assessment 3	• Take in assignment 6 • Assessment 3
29 13/6/06	3	▪ Review of assessment ▪ Individual tutorials to complete action plans	
30 20/6/06	3	• Portfolio work and course evaluation	

Section D: Units of assessment

Unit title	Techniques for teaching aspects of numeracy to adult learners				
Level	3	Credit value	1	Unit code	

Learning outcomes	Assessment criteria
The learner will:	*The learner has demonstrated the ability to:*
1. Understand formal and informal learning of numeracy/literacy	1.1 Record a critical analysis of the content and the learning process of your previous formal and informal learning of numeracy.
2. Understand the laws of arithmetic operations and rules of precedence in simplifying arithmetic expressions to aid learners of numeracy.	2.1 Identify and analyse how the arithmetic laws can be used to aid learning and overcome barriers to learning numeracy. 2.2 Apply the laws in a range of multi-stage calculations using a variety of strategies to aid learners improve their mental maths.
3. Understand how to deliver and assess learner error analysis to aid the learning of proportional reasoning.	3.1 Identify and analyse common errors 3.2 Analyse indicators of numeracy processing disorders in the work of numeracy learners and create resources to aid learning.
4. Understand the concepts and properties of geometry as a means of describing the physical world.	4.1 Explain how using the natural world and art to teach the properties of geometry can aid numeracy learning.

Section D: Units of assessment

Unit title	Working with algebra				
Level	3	Credit value	1	Unit code	

Learning outcomes	Assessment criteria
The learner will:	*The learner has demonstrated the ability to:*
1 Solve linear and simultaneous equations using algebraic manipulation and graphs.	1.1 Explain the most efficient ways of solving a variety of linear and simultaneous equations. 1.2 Obtain the gradient to solve problems, intercept and construct the equation of straight line graph.
2 Solve quadratic equations.	2.1 Solve quadratic equations using factorisation and the quadratic formula. 2.2 Construct quadratic graphs from equations 2.3 Solve quadratic equations from graphs
3 Convert practical situations and statements into appropriate algebraic symbols and equations and verify the results.	3.1 Plot a straight line graph, identify variables and construct equations. 3.2 Manipulate and solve algebraic equations and interpret results as practical outcomes. 3.3 Test conjectures and analyse results
4 Represent straightforward and real-world situations using graph plotting software and scientific calculators.	4.1 Use spreadsheets and/or graph plotting software to verify results of algebraic equations from real world examples. 4.2 Use memory and function keys on a standard scientific calculator

Section D: Units of assessment

Unit title	Probability and Statistics				
Level	3	Credit value	1	Unit code	

Learning outcomes	Assessment criteria
The learner will:	*The learner has demonstrated the ability to:*
1. Use concepts associated with the term probability.	1.1 Identify different types of events eg independence, exclusivity, conditional. 1.2 Use a probability scale to express outcomes. 1.3 Represent outcomes in tables and tree diagrams.
2. Understand measures of location and measures of dispersion.	2.1 Organise, analyse and interpret raw and group data, using appropriate statistical tools to include: - mean, median, mode and percentiles - standard deviation - upper, lower and interquartile range
3. Recognise and construct appropriate forms of diagrammatic representations.	3.1 Use accurately a range of complex modes of presentation and diagrammatic representations
4. Make enquiries and inferences and evaluate arguments based on data.	4.1 Evaluate methods of data collection. 4.2 Analyse data and highlight any inappropriate and misleading data. 4.3 Compare methods used to interpret data and justify personal choice of statistical tool.
5. Use calculators and spreadsheet functions to perform appropriate statistical tasks.	5.1 Use a scientific calculator to calculate mean, standard deviation, sum of values and correlation and linear regression. 5 .2 Use spreadsheet functions to record data in tables, calculate values from data, and calculate linear regression, plot graphs and draw statistical diagrams.

Evidence Record Sheet

Unit 1: Techniques for teaching aspects of numeracy to adult learners

Assessment criteria	Portfolio evidence (page number)	Date of completion	status		
			Not submitted	referred	passed
1. Understand formal and informal learning of numeracy/literacy					
2. Understand the laws of arithmetic operations and rules of precedence in simplifying arithmetic expressions to aid learners of numeracy.					
3. Understand how to deliver and assess error analysis to aid the learning of proportional reasoning.					
4. Understand the concepts and properties of geometry as a means of describing the physical world					

Evidence Record Sheet

Unit 2: Working with algebra

Assessment criteria	Portfolio evidence (page number)	Date of completion	status		
			Not submitted	referred	passed
1. Solve linear and simultaneous equations using algebraic manipulation and graphs.					
2. Solve quadratic equations.					
3. Convert practical situations and statements into appropriate algebraic symbols and expressions and verify the results.					
4. Represent straightforward and real-world situations using graph plotting software and scientific calculators.					

Evidence Record Sheet

Unit 3: Probability and statistics

Assessment criteria	Portfolio evidence (page number)	Date of completion	status		
			Not submitted	referred	passed
1. Use concepts associated with the term probability.					
2. Understand measures of location and measures of dispersion.					
3. Recognise and construct appropriate forms of diagrammatic representations.					
4. Make enquiries and inferences and evaluate arguments based on data.					

PERSONAL DEVELOPMENT ACTION PLAN				
UNITS	**What aspect of this unit do I need to develop further?**	**How could this development happen? (eg. Reading, Day seminar, short course, liaison with basic skills staff)**	**Who do I need to consult about this?**	**Timescale**
Unit One				
Unit Two				
Unit Three				

Reflection for the teaching focus to be filled out each week

Topic: _____

Date: _____

Describe the group of learners you are working with, (eg. Age range, gender and levels)

What were your plans for the session and did you achieve it?
Resources Used:

Book List

Some of these books are recommended for the Level 4 course. These are asterisked*.

Edexcel GCSE Mathematics Higher Course	(Heinemann) 2001
Modular Mathematics for Edexcel AS and A level – Pure Mathematics	***Geoff Mannall, Michael Kenwood*** *(Heinmann) 2000*
Murderous Maths - The Essential Arithmetricks.	***Kjartan Poskitt*** *(Scholastic) 1999*
****Adults Count Too: Mathematics for Empowerment***	***R.Benn*** *NIACE 1997*
****It Doesn't Get Any Better: The Impact Of Poor Basic Skills on the Lives of 37 Year Olds***	***J.Bynner and S. Parsons*** *BSA 1997*
A Fresh Start- Improving Literacy and Numeracy (The Moser Report)	*DfES 1999*
Adult Numeracy Core Curriculum	*BSA 2001*
****Overcoming Maths Anxiety***	***S.Tobias*** *Norton 1978*
Dictionary of Mathematics	***E.J. Borowski and J.M Borwein*** *Harper-Collins 1989*
Mathematics Explained for Primary Teachers	***Haylock, Derek*** Sage Publications Ltd, 2001
Mathematics for Dyslexics	***Chinn, S. and Ashcroft, J.*** Whurr,1993,

Assignment feedback sheet

Name: Assignment:

Feedback:

Action points:

PASS REFER

Signed ……. Date ……

Assignment **re-submission** sheet

Name: Assignment:

Feedback: **Have the previous action points been addressed?**

Further action points:

PASS REFER

Signed …… Date……

Request for assignment deadline extension.

Name ……..

Group (Day of week/venue) ……..

I wish to request an extension for assignment No.……

Reason for request:

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Signed …….. Date……

Request Agreed

Denied

Signed (Tutor)…….. Date……