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Numeracy Policy

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Numeracy

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Introduction:

Numeracy is a proficiency which is developed not only in Mathematics but also in other subjects across the curriculum. It is more than an ability to do basic arithmetic. It involves developing confidence and competence with numbers and measures. It requires understanding of the number system, a repertoire of mathematical techniques and an inclination and ability to solve quantitative or spacial problems in a range of contexts. Numeracy also demands understanding of the ways in which data is gathered and presented.

Purpose:

The purpose of the Numeracy policy at CCYD is to raise, maintain, develop and enhance numeracy skills across the whole school, regardless of the age and ability of the learner. To facilitate this the policy will:

- Ensure consistency of practice including methods, vocabulary, notation etc.
- Indicate areas for collaboration between subjects
- Familiarise all staff with the key Numeracy strategies used to enhance learners' skills and make them aware of their responsibilities and contributions to the development of learner Numeracy in their area.
- Assist in the transfer of learners' knowledge, skills and understanding between subjects and encourage learners to explore Numeracy in other contexts.
- Raise the profile of Numeracy taught in other curricular areas.
- Develop learners' confidence and in particular those identified as a risk of underachieving.

Aim(s):

All staff should:

- Be aware, through data, of the Numeracy needs of the classes they teach.
- Address Numeracy issues in their planning, teaching and assessment.
- Be familiar with the strategies for developing Numeracy skills in their subject.
- Implement the Numeracy policy consistently.

Team leaders should:

- Ensure that key subject documentation identifies Numeracy as a focus.
- Include Numeracy on departmental agendas
- Encourage good practice within the department.

Wider school aims/ethos:

Cluster

Numeracy coordinator and transition coordinator to liaise with all cluster primaries:

- to ensure consistent messages are delivered to staff, learners and parents regarding content and process.
- to assist in the delivery of lessons across ability areas in years 5 and 6.
- to facilitate development of resources and policies.
- to ensure Numeracy data is transferred as part of the transition process.

Consultation:

- Numeracy coordinator to liaise with deputy Headteacher responsible for primary school links.

Procedures and practice:

All Team leaders and staff to:

- contribute to numeracy starters as an alternative to literacy starters in lessons.
- include their allocated strands from the LNF into their Write On tasks in KS3. (see point 1 at the end of policy for allocated strands)
- contribute to numeracy skills development through age/ability appropriate tasks within lessons and to identify these within PoLs.

Named departments to:

- incorporate a Numeracy element within their NRT/NNT homework tasks in KS3. (see point 2 at the end of policy for named departments)

All form teachers to:

- deliver the numeracy elements within Thought for the Week, to be monitored by HoCs with support from Numeracy coordinator and SLT link.

Numeracy coordinator to:

- prepare NNT papers, mark schemes and support material for mathematics staff to utilise with learners in lessons.
- prepare NNT papers for learners to use in mock examinations.
- prepare learners for online testing by providing opportunities for learners to sit online practice/mock tests.
- analyse NNT mock data and share findings with learners, mathematics staff, SLT and parents.
- support parents with their child's Numeracy by utilising the school website, sharing information in parent information evenings, delivering parental workshops and ensuring a Numeracy comment and target is included in KS3 Mathematics reports.
- ensure staff, learners and parents have access to Numeracy booklets prepared by maths staff to show agreed common procedures for completing tasks such as multiplication and percentages.
- Support Team leaders with incorporating suitable Numeracy within PoLs, including the year 7 Challenge Curriculum PoLs.

BKSB (Basic and Key Skills Builder) Numeracy intervention programme (See end of policy point 4 for Estyn Supplementary Guidance and point 5 for BKSB level explanation)

Numeracy coordinator and Numeracy LSO work together to ensure:

- all KS3 learners are fully assessed on BKSB yearly to measure progress.
- the delivery of short term targeted Numeracy lessons for learners on Entry level 3, with a focus on their Numeracy skill gaps.
- that eFSM learners not reaching level 1 are targeted for support.
- that learners receiving intervention are reassessed at the end of the cycle of lessons to measure progress.
- that learners on Entry level 2 receive long term intervention under the direction of the ALNCO.

- that BKS data and lists of learners receiving support are shared with all interested parties.

Calculators

CCYD expects all learners to bring their own scientific calculator to lessons. Mobile phones are not a suitable substitute for a scientific calculator. Phones are not allowed to be used in examinations and phones perform algorithms in a different way to a calculator. Scientific calculators are included on the list of items required by new learners to CCYD and can be purchased from the Mathematics department if desired.

All staff should ensure that:

- The learners first resort should be mental methods.
- learners have sufficient understanding of the calculation to decide the most appropriate method: mental, pen and paper or calculator.
- learners have the technical skills required to use the basic facilities of a calculator constructively and efficiently, the order in which to use keys, how to enter numbers as money, measures, fractions etc.
- when using a calculator, learners are aware of the processes required and are able to say whether their answer is reasonable (eg. of a sensible size)
- learners can interpret the calculator display in context (eg. 5.3 is £5.30 in money calculations)
- learners use the correct order of operations, such as $(3.2 - 1.65) \times (15.6 - 5.77)$.

Vocabulary

All staff should ensure that they they:

- use a variety of words that have the same meaning. (eg. add, sum, plus, total).
- encourage discussion about words that have different meanings.
- encourage learners to be less dependent on simple words. (eg. expose them to the words multiply or product as a replacement for times).
- highlight word sources so that learners can use them to help remember meanings (eg. quad meaning 4).

Measure

Measure is an area of weakness identified on the diagnostics from the National Numeracy test for many learners, at both KS2 and KS3. The Design and Technology department traditionally work with millimeters, whilst the mathematics department use metres and centimetres. This can complicate the issue for learners.

All staff should ensure that they:

- support learners when working with measurements so that they can confidently use and convert between m, cm and mm.

- support learners with having a sense of relative size and help them to visualise what a particular dimension looks like using real life examples.

Handling data

At CCYD Handling Data is more than colouring columns on graph paper.

All staff should ensure that learners:

- collect data from a variety of sources
- process and represent data in a variety of ways that suit the ability of the learner (eg. pie charts instead of bar charts)
- make use of ALNST to ensure all key aspects of a graph are present
- interpret and discuss their findings.

Raising standards

In order to evaluate the learners' ability to transfer mathematical skills into other subject areas and apply techniques to problem solving, the Numeracy coordinator will:

- analyse KS2 and KS3 NNT data
- analyse KS2 and KS3 BKSB data
- carry out work sampling in line with whole school work sampling, with a particular focus on the Estyn supplementary guidance (see point 6 at the end of the policy)
- carry out learner voice in line with whole school work sampling, with a particular focus on the Estyn supplementary guidance (see point 3 at the end of the policy)
- consider the strengths/weaknesses from Team Leader analysis of lesson observations and Teaching and Learning group analysis of whole school learning walks.

The Numeracy coordinator will take appropriate action on the findings from the above to plan next steps in order to ensure Numeracy standards are raised.

Roles and responsibilities:

SLT:

SLT link for Numeracy

Numeracy coordinator

Other documents and appendices:

- 1) **Departments allocated strands from the LNF (to be incorporated into Write On! tasks) are:**

- Mathematics:

- English: KS 3.10
- Science: KS 3.11, KS 3.14, 7N15, 7N15a, 8N15, 8N15a, 9N15, 9N15a, 7M1, 7M3, 8M3, 7D2, 7D4, 7D4a, 8D4, 8D4a, 9D2, 9D4.
- Design Technology: KS 3.2, KS 3.5,
- Geography: 7N11, 8N11, 9N11, 8M3a, 7M6, 8M6, 7M8, 8M8, 9M8, 7M11, 8M9, 9M9, 7D3, 8D3, 9D3.
- History: KS 3.19
- Welsh: KS 3.16
- French: 7N12, 8N12, 9N12, 9N18,
- RPE: KS 3.21
- PE: 7M5, 8M5, 9M3

2) Named departments allocated strands for the NNT homeworks are:

- Mathematics
- Science
- Geography
- Design Technology

3) ESTYN Numeracy Supplementary Guidance for Learner Voice

Learners in Key Stage 3

Are you making progress in improving your numerical skills? How do you know?

What is your attitude towards numeracy? Do you think it's important to have good numeracy skills? Why?

Do you know what you have to do to improve your numerical skills further?

Examples

How often do you use your number work in other subjects?

Can you think of examples where you have used mathematics such as number work, graphs, shape, etc. in subjects other than mathematics?

How easy or difficult has this work been e.g are you able to use a calculator when unsure?

Do you think that subjects other than mathematics help you reinforce and develop your number skills?

Do teachers let you explore on your own or with your peers how you might want to use different methods for calculating solutions to your problem?

If you get a calculation wrong, do you have the opportunity to discuss this with your teacher and peers, and to correct/improve your work? Can you show me some examples?

4) ESTYN Numeracy Supplementary Guidance for evaluating intervention programmes

Points to consider when evaluating numeracy intervention programmes:

- How does the school identify the learners who need support to improve their numeracy skills?
- How effective are intervention strategies in helping learners catch up with their peers?
- What training do teaching assistants who deliver the intervention programme receive?
- What is the format and frequency of the sessions?

- How is the progress of learners on the intervention programmes communicated to managers and other staff?
- How does the school ensure that classroom teachers are aware of the teaching and learning strategies and the resources used in the intervention programmes?
- What strategies does the school use to make sure teachers use similar strategies and resources in their lessons?

5) BKSBS KS3 Guidance

Level 2	Ability of KS4 - learner are MAT
Level 1	Ability of KS3 - learners skills are at required level or better
Entry Level 3	Ability of KS2 - learners skills are not at required level
Entry Level 2	Ability of KS1 - learners skills are very much underdeveloped

6) ESTYN Numeracy Supplementary Guidance when looking at learners' work

Points to consider when looking at learners' work:

- Do learners use a range of appropriate number skills (for example four rules of number, place value, estimation and simple fractions and percentages)?
- Do learners use a range of appropriate measuring skills (for example working with scales, units of measurements, time, temperature)?
- Do learners use and appropriate range of data handling skills (for example gather information in a variety of ways, recording, interpreting and presenting it in charts or diagrams, identifying patterns in data and conveying appropriate conclusions, selecting an appropriate graph to display the data, using an appropriate and accurate scale on each axis, and being able to tell the 'story of a graph')?
- Do learners apply these skills in different contexts effectively to solve real-life problem (points to consider are relevance, challenge, planning, processing and reasoning)?
- Are learning activities purposeful and do they build successfully on what pupils know?
- Is there clear evidence of appropriate differentiation?
- Does feedback help learners to improve their work?