An Assessment through Teaching Approach for the Identification of Specific Learning Difficulties

Pupil and School Support
& Educational Psychology Service
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Pupil and School Support

Acknowledgments

Many thanks to all the members of Pupil and School Support Service who have been involved in the development of this guidance. This document makes reference to and builds on the Dyslexia Pathway Guidance Published: October 2015, Revised: December 2016 published in partnership with the Educational Psychology Service.

Contents

Purpose and Principles

The purpose of this document is to:

- promote a shared and coherent rationale and understanding of dyslexia and dyscalculia
- promote the inclusion of children and young people (CYP) with specific learning difficulties in local mainstream schools ensuring equality of opportunity for all children and young people within Birmingham settings.
- provide clarity regarding the current definitions and terminology of dyslexia and dyscalculia
- clarify the roles and responsibilities of all concerned, in supporting and recognising those children and young people (CYP) requiring formal identification of their specific learning difficulties.
- promote the active participation of children/young people and their parents/carers
- Adopt a common approach to the early identification and provision for pupils with specific learning difficulties through the use of a graduated approach.
- Signpost sources of information
- Provide advice on classroom strategies and advice on adapting classroom practice, approaches and access strategies, appropriate intervention and learning environments to facilitate the Local Authority's (LA) commitment to raising the level of attainment and progress for all pupils with SEND

The principles within this guidance are as relevant to dyslexia and dyscalculia as they are to other types of Special Educational Needs & Disability (SEN/D) and include:

- CYP with special educational needs should ordinarily have their needs met in mainstream schools or settings. This applies to those with a specific learning difficulty (SpLD).
- CYP with a SpLD should be offered full access to a broad, balanced and relevant education, with additional intervention and support, as appropriate.
- The views of CYP should always be included when support and assessment are being considered.
- Parents and carers have a vital role to play in supporting their CYP's education.

This guidance is based on the principles of the SEND Code of Practice which:

"…provides a set of fundamental guiding principles and a framework of support for pupils with special educational needs, including specific learning difficulties which affect one or more specific aspects of learning. This encompasses a range of conditions such as dyslexia, dyscalculia and dyspraxia/DCD. The majority of pupils' needs can be met within their educational settings at SEN Support, but some pupils may have more significant and complex needs that require an Education, Health and Care Plan."

(SEND Code of Practice (CoP), DfE, 2015)

It is recognised that there are many overlaps between specific learning difficulties (SpLDs) and that CYP with dyslexia and dyscalculia may often have co-occurring difficulties.

Introduction

The purpose of this document is to outline Birmingham's approach to identifying dyslexia and dyscalculia, and how to meet the needs of children and young people with SpLDs. Where there are concerns regarding Developmental Coordination Disorder (Dyspraxia) please refer to a paediatrician as this can only be diagnosed by medical professionals.

The intended audience is all those who work with and support children and young people including parents/carers, governors, support services, other professionals and the children and young people themselves.

This document builds on the original Dyslexia Guidance (2011), Educational Psychology Practice Guidance for the Assessment of Dyslexia (February 2012) and the Dyslexia Pathway Guidance (Published: October 2015, Revised: December 2016) and has been compiled following a review of literature and current research, taking into account national initiatives and guidance and recognising good practice from other Local Authorities (LAs). Regard is given to the Equalities Act 2010 and to the 0-25 SEND Code of Practice 2015.

Dyslexia

What is Dyslexia?

The SEND Code of Practice 2015 states that “specific learning difficulties (SpLD) affect one or more specific aspects of learning”. This is an umbrella term used to describe a variety of learning differences. These include dyslexia, dyspraxia and dyscalculia.

The term dyslexia is derived from two Greek words, ‘dys’ meaning ‘difficulty’ and ‘lexia’ from the root ‘lexis’ meaning ‘words or language’. The literal meaning is therefore ‘difficulty with words’.

Despite considerable scientific and educational research, a wide variety of terminology and definitions of dyslexia remain. Worldwide there is no single, commonly accepted definition or an agreed cause.

Recent Research:

Recent research points to expert views largely agreeing on the following points:

a) The discrepancy model is discredited:

Practitioners should:

> *“…*shift the focus of their clinical activities away from emphasis on psychometric assessment to detect cognitive and biological causes of a child’s reading difficulties for purposes of categorical labelling in favour of assessment that would eventuate in educational and remedial activities tailored to the child’s individual needs”
>
> (Vellutino *et al.,* 2004, p.31)

- One of the biggest myths associated with dyslexia is that it should be defined in relation to intelligence (Elliot and Grigorenko, 2014).
- The so called ‘discrepancy definition’ of dyslexia recognises as genuine dyslexics only those whose level of reading is significantly worse than would be expected on the basis of their intelligence (typically measured by an IQ test). Research over the past twenty years has demonstrated the folly of this belief. Puzzlingly, while the discrepancy model has been discredited (and is no longer advocated by

dyslexia lobby groups), it is still widely employed by clinicians (Elliot and Grigorenko, 2014)

b) The importance of phonological skills:

- Phonemic awareness is the strongest predictor of children's word reading skills (Elliott and Grigorenko, 2014).
- At the present time, the phonological deficit hypothesis provides the only clear-cut evidence of causal links with reading failure (Snowling, 2006).

c) Identification should be carefully considered:

- It is important for children to have sufficient experiences of literacy-based activities and interventions prior to an identification of dyslexia being sought. Children who have not had sufficient experiences could present as being dyslexic, when in fact they have simply not had enough exposure to first quality teaching (Catts, Petscher, Schatschneider, Bridges and Mendoza, 2009).
- It is better to delay the identification process until a more accurate assessment can be made following a period of High Quality Teaching (Fletcher et al, 2002; Hurford, Potter and Hart, 2002)

d) Specialist support helps pupils progress, regardless of the cause of reading delay:

- Differentiation of intervention based upon whether an identification has been made or not is not essential (Elliott and Grigorenko, 2014).
- Whilst an identification of dyslexia should not be made too early, it is critical that difficulties in learning to read are identified as early as possible and that targeted support is given, regardless of the cause (Torgesen, Foorman and Wagner, 2010).
- It is not useful, from an educational point of view to differentiate between the dyslexic and other poor readers as the techniques used to teach both dyslexic and other struggling readers are the same (UK Commons Science and Technology Committee, 2009).

"Where a pupil continues to make less than expected progress, despite evidence based support and interventions that are matched to the pupil's area of need, the

school should consider involving specialists including those secured by the school itself or from outside agencies"

(SEND CoP, 2015 page 102, para6.58)

"A school should always involve a specialist where a pupil continues to make little or no progress or where they continue to work at levels substantially below those expected of pupils of a similar age, despite evidence based SEN support delivered by appropriately trained staff."

(SEND CoP, 2015, para 6.59)

e) It is helpful to differentiate between difficulties:

- During an assessment it is useful to distinguish between co-occurring difficulties, if there are any, in order to ensure that the intervention planned can take these into account (Sumner et al., 2009; Sexton et al.,2012)
- The pupil's word reading and or spelling skills have developed very incompletely so that these word-level difficulties are apparent with: 1) accuracy or 2) accuracy and fluency (Rose, 2009; Elliot and Grigorenko, 2014).

"It is important to differentiate between children who have decoding difficulties and those who, while accurate and fluent readers, struggle with other reading-related problems such spelling and comprehension." (Elliott and Grigorenko, 2014, p 161)

Relevant Definitions:

Both the British Psychological Society (1999) and the comprehensive report provided by Jim Rose 2009 provide useful definitions.

These definitions are as follows:

British Psychological Society (BPS):

Dyslexia is evident when accurate and fluent word reading and/or spelling develops very incompletely or with great difficulty. This focuses on literacy learning at the 'word level' and implies that the problem is severe and persistent despite appropriate learning opportunities. It provides the basis for a staged process of assessment through teaching.

Rose Report Definition:

Dyslexia is a learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling.

Rose also indicates professional agreement around the following:

1) Characteristic features of dyslexia are difficulties in phonological awareness, verbal memory and verbal processing speed.

2) Dyslexia occurs across the range of intellectual abilities.

3) Dyslexia is best thought of as a continuum, not a distinct category, and there are no clear cut off points.

4) Co-occurring difficulties may be seen in aspects of language, motor coordination, mental calculation, concentration and personal organisation but these are not, by themselves, markers of dyslexia.

5) A good indication of the severity and persistence of dyslexic difficulties can be gained by examining how the individual responds or has responded to well-founded intervention.

The foundation to Birmingham's identification process:

We have taken into account the most up-to-date research and the BPS and Rose report definitions in order to agree that dyslexia occurs at the word level in terms of either:

1) incomplete reading and/or spelling accuracy

2) incomplete accuracy and fluency in reading and/or spelling

(Rose, 2009; BPS, 1999)

Birmingham Services are also basing the identification process on the following:

These difficulties are persistent and severe despite appropriate learning opportunities within an assessment through teaching approach (BPS, 1999) and pupils have made less than expected progress following targeted interventions and the involvement of specialist support that has been tailored to pupils' individual needs (SEND CoP, 2015).

For example: if a child is having a continuing difficulty with remembering spelling patterns and how to write and use them, they should have received an intervention such as Direct Phonics. If this was shown not to be effective other interventions will have been tried e.g. Cued Spelling. Despite this, the young person will still have severe difficulties.

Whilst recognising that word level reading and or spelling difficulties occur across a continuum from mild to severe (Rose, 2009), Birmingham services will focus on identifying pupils who have persistent and severe difficulties as having dyslexia. Around 4 to 8% of the school population is estimated to have dyslexia (Butterworth & Kovas, 2013) and a similar estimate of prevalence is quoted by Snowling (2013). For the purpose of identification Birmingham Services will identify dyslexia within this range where word level difficulties continue over a period of time, **despite appropriate intervention at the specialist level** of the Assessment Through Teaching Approach. Therefore, before dyslexia is considered as a possible cause for observed difficulties, it is imperative that steps have been taken and provision made to address them.

Pupils with milder reading and or spelling difficulties i.e. above the 4 to 8 percentile should continue to access support through High Quality Teaching and appropriate differentiation. Children with complex, general learning difficulties should continue to access targeted or specialist support through a graduated approach.

The Role of Schools

Birmingham services support the view of the Department for Education (2012) that children with dyslexia and other learning difficulties learn and make progress most effectively by being taught and supported in a familiar environment by their teachers and teaching assistants through good 'High Quality Teaching'.

This is reflected in the 0 to 25 SEND Code of Practice (April 2015) which describes a graduated approach which begins with High Quality Teaching and follows an 'assess, plan, do and review' process.

The National Curriculum Framework (2014) states that all teachers:

- Set suitable learning challenges

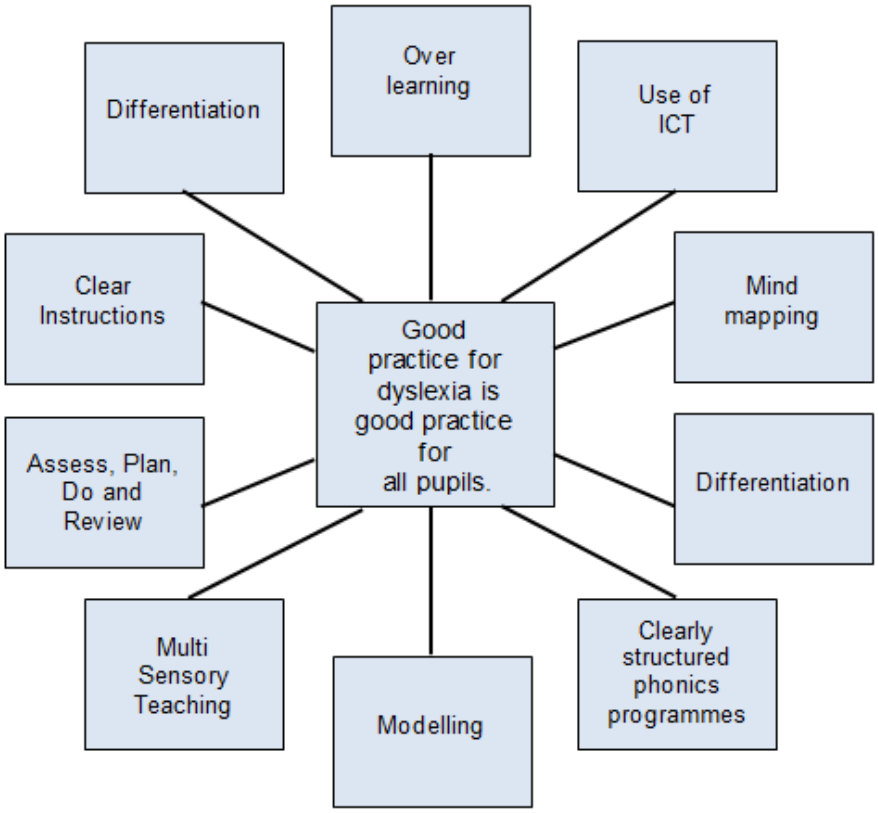
- Overcome barriers to learning
- Respond to pupils' diverse needs

High Quality Teaching and Dyslexia Friendly Practice

There are certain teaching methods and practical approaches which are particularly effective to promote access to learning for all children, including those with dyslexia. For the most part these strategies should just be part of HQT rather than being something additional.

The following diagram shows some of the common features of HQT / dyslexia friendly strategies. In addition please refer to the Birmingham Literacy Toolkit Teaching and Learning Ideas.

Diagram 1: Common features of High Quality Teaching and dyslexia friendly strategies.



Information for Parents/Carers

Appendix 1a contains information, which schools are encouraged to share with parents/carers who might be concerned about whether their child has difficulties consistent with the definition of dyslexia. It also incorporates further information about the kind of support that is available in schools.

Additionally, PSS can offer further advice to parents and carers regarding how best to support their child.

Appendix 2 contains answers to frequently raised questions.

Appendix 3 contains the relevant permission slip that should be used to gain parent/carer informed consent for a PSS professional to work with their child or young person.

Assessment of Dyslexia

It is important to note that current research clearly indicates that the identification of dyslexia does not take place through a one-off assessment. Services within Birmingham identify dyslexia when difficulties at the word level are evident over time and are persistent despite universal, targeted and specialist support through the graduated approach (SEND CoP, 2015).

Screening Tests

There are many different types of screening tests. Some are delivered by computer, others need to be administered by a teacher. Some claim to give an estimate as to whether the child/person is likely to have dyslexic difficulties. However, they are based on a discrepancy model that has been widely discredited so therefore screening tests cannot identify dyslexia and should not be used as predictors because other techniques are better.

Additionally, as they are a one-off assessment and do not take account of interventions or progress over time, they should not be used to identify dyslexia.

Dyscalculia

What is dyscalculia?

The term dyscalculia is derived from two Greek words, ‘dys’ meaning ‘difficulty’ and ‘calculia’ from the Latin calculare to calculate. It is a difficulty in learning or comprehending arithmetic, such as difficulty in understanding numbers, learning how to manipulate numbers, and learning facts in mathematics.

Despite considerable scientific and educational research, a wide variety of terminology and definitions of dyscalculia remain. Worldwide there is no single, commonly accepted definition or an agreed cause.

The core feature of dyscalculia is a domain specific deficit in sense of number. This manifests as difficulties with subitising, symbolic and non-symbolic magnitude comparison, and ordering (cardinality, ordinality).

Therefore, dyscalculia occurs when pupils have persistent and significant difficulties in the areas of:

- Number sense
- Subitising
- Symbolic and non-symbolic magnitude comparison
- Ordering

Individuals may be able to perform procedures that have been learned by rote (often using single unit counting strategies) but will not understand the underlying concepts or be able to use alternative strategies or adapt to new problems (Chinn 2020). They are unlikely to be able to recognise or check whether their answers are sensible, even when the answer is wildly inaccurate.

While a dyscalculic and a dyslexic student may initially present similar incorrect answers to a calculation, the dyslexic student is more likely able to try alternative strategies, while the dyscalculic student is more likely to resort to counting, guessing, or give up. On producing an answer which is wildly inaccurate (e.g. 100 times too large), both students may initially fail to notice this, but on prompting, the dyslexic

student is likely to realise that the answer is not sensible, whereas the dyscalculic student is not.

People with dyscalculia will also have a wide range of other mathematics difficulties. Understanding of number is essential to development of arithmetic skills and arithmetic is the first stage of mathematics teaching, so difficulties in this area have a negative impact upon children's subsequent mathematics learning trajectories. Longitudinal research by Jordan et al (2009) reveals a clear link between number competence at kindergarten stage and later arithmetic ability, regardless of socioeconomic status, demonstrating the importance of early number competence for setting children's learning trajectories in school mathematics.

Because mathematics is developmental, any insecurity or uncertainty in early topics will impact on later topics, therefore there is a need to ensure that the child or young person has had opportunities to establish firm foundations in basic mathematical understanding.

Dyscalculia can occur on its own but can also co-occur with other SpLDs (Landerl et al 2009). Statistics on co-occurrence vary widely dependent upon definitions of dyscalculia, but there is consistent evidence that there is some co-occurrence between dyslexia, severe mathematics difficulties, ADHD and Dyspraxia. (Aster and Shalev 2007, Kaufman et al 2013, Landerl et al 2013, Wilson et al 2015, Chinn and Ashcroft, 2017).

Dyscalculia Definition

Dyscalculia is a specific and persistent difficulty in understanding numbers which can lead to a diverse range of difficulties with mathematics. It will be unexpected in relation to age, level of education and experience and occurs across all ages and abilities.

Mathematics difficulties are best thought of as a continuum, not a distinct category, and they have many causal factors. Dyscalculia falls at one end of the spectrum

and will be distinguishable from other mathematics issues due to the severity of difficulties with number sense, including subitising, symbolic and non-symbolic magnitude comparison, and ordering. It can occur singly but can also co-occur with other specific learning difficulties, mathematics anxiety and medical conditions. (Agreed by both the SASC/STEC and BDA Working Groups on Dyscalculia 2019)

Belfast Study July 2018

A study in the British Journal of Psychology is the first to estimate the prevalence of specific learning disorder in maths (SLDM)/dyscalculia in primary school age children using contemporary criteria (as outlined by the American Psychiatric Association).

The research is based on nearly 2,500 children, aged 7 to 13, from 19 rural and urban schools in Northern Ireland. The data are averages of several years' standardised test results of the children's maths, reading and IQ, together with background demographic information and notes on any diagnoses of other developmental problems.

Historically, diagnosis of SLDM/dyscalculia took a child's IQ into account, such that a specific problem with maths was only diagnosed if their maths ability was low relative to their IQ – the so-called "discrepancy criterion". The newer diagnostic criteria (in DSM 5) abandon this principle. Now a persistent, significant problem with maths counts as SLDM/dyscalculia even if it occurs alongside comparably low IQ or other learning problems. Based on the new criteria, Kinga Morsanyi and her colleagues at Queen's University Belfast, estimated the relevance of SLDM/dyscalculia in primary school children at around 5.7 per cent.

Identification should be carefully considered*:*
It is important for children and young people to have sufficient experiences of mathematical-based activities and interventions prior to an identification of a specific mathematical difficulty and/or dyscalculia being sought. CYP who have not had sufficient experiences could present as having dyscalculia, when in fact they have simply not had enough exposure to high quality teaching.
It is better to delay the identification process until a more accurate assessment can be made following a period of high quality teaching

Specialist support helps pupils progress, regardless of the cause of mathematical delay:

- Differentiation of intervention based upon whether an identification has been made or not is not essential (Elliott and Grigorenko, 2014).
- Whilst an identification of a specific mathematical difficulty and/or dyscalculia should not be made too early, it is critical that difficulties in learning mathematical skills are identified as early as possible and that targeted support is given, regardless of the cause.
- It is not useful, from an educational point of view to differentiate between dyscalculia and other poor mathematicians as the techniques used to teach both are the same

"Where a pupil continues to make less than expected progress, despite evidence-based support and interventions that are matched to the pupil's area of need, the school should consider involving specialists including those secured by the school itself or from outside agencies"

(SEND CoP, 2015 page 102, para6.58)

"A school should always involve a specialist where a pupil continues to make little or no progress or where they continue to work at levels substantially below those expected of pupils of a similar age, despite evidence-based SEN support delivered by appropriately trained staff."

(SEND CoP, 2015, para 6.59)

It is helpful to differentiate between difficulties:

- During an assessment it is useful to distinguish between co-occurring difficulties, if there are any, in order to ensure that the intervention planned can take these into account (Sumner et al., 2009; Sexton et al.,2012)
- It is important to identify prior mathematical experiences, language levels and reading levels.
- During an assessment it is important to identify whether pupils 'number sense' skills have developed incompletely.
- During assessment it is important to identify difficulties with short term and working memory, as well as processing speeds.

- It is important to differentiate those pupils who have learnt processes and procedures without full understanding.
- It is important to recognise those pupils who have maths anxiety.

What is maths anxiety?

Maths anxiety is a situation-specific anxiety which can be described as “an emotion that blocks a person’s reasoning ability when confronted with a mathematical situation” (Spicer, 2004). It is thought to affect up to 85% of students (Perry, 2004) with 26% having moderate to high levels (Jones, 2001). The fear is thought to primarily stem from negative learning experiences with maths in the past and whilst someone is in a state of anxiety, effective learning cannot occur.

Symptoms of maths anxiety include:

1. Emotional symptoms: feeling of helplessness; lack of confidence; fear of getting things wrong.

2. Physical symptoms: heart racing; irregular breathing; sweatiness; shakiness; biting nails; feeling of hollowness in stomach; nausea.

3. Frustration from trying to do maths and not being successful.

4. Not knowing where to start with questions or never getting the right answer.

5. Confused and just wanting to quit and go home.

6. Very stressed before and during exams.

7. Begin to shut down and stop listening in class.

Effects on memory:

Maths anxiety has measurable effects on parts of the brain used to understand maths. Working memory is important for solving mathematical problems. Maths anxiety decreases working memory because the brain is too busy worrying about maths instead of doing it (Young, 2012). This means that whilst someone is in a state of anxiety, they will struggle to understand the maths being taught or attempt questions. Bad experiences with maths in the past mean that the brain sometimes associates maths with pain, so the regions of the brain associated with pain

processing are activated when thinking about maths (Lyons and Beilock, 2012). This only occurs when thinking about the maths but doesn't occur when the brain is doing maths. The brain can also see maths as a threat, so the natural response is to 'run' away from maths in a similar way as one would run from a tiger.

It is important to note that dyscalculia is a learning difference that affects maths skills and maths anxiety is an emotional issue involving self-doubt and the fear of failing; the signs may overlap.

Maths and Language

Pupils who are experiencing difficulties in acquiring or using language, or who have delayed language skills can find mathematics particularly difficult. The symbols are used to support our communication, rather than be the mathematics itself. At times, the language of maths can prove to be a barrier to making progress in maths. The National Curriculum for Teaching Mathematics (DfES, 2014) acknowledges English provides the means for children to think about mathematics, as well as to express that thinking. If children are not supported to develop mathematical English, they are less likely to be able to participate fully in mathematics lessons, and so will have fewer opportunities to make progress in the subject. The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof. They must be assisted in making their thinking clear to themselves as well as others, and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

The Foundation to Pupil and School Support's Identification Process:

The Birmingham Support services have taken into account the most up-to-date research and the BDA definitions.

Dyscalculia is a specific and persistent difficulty in understanding numbers which can lead to a diverse range of difficulties with mathematics. It will be unexpected in relation to age, level of education and experience and occurs across all ages and abilities.

Pupil and School Support are also basing the identification process on the following:

These difficulties are persistent and severe despite appropriate learning opportunities within an assessment through teaching approach (BPS, 1999) and pupils have made less than expected progress following targeted interventions and the involvement of specialist support that has been tailored to pupils individual needs (SEND CoP, 2015). For example: if a child is having a continuing difficulty with recalling number facts, they should have received a targeted intervention using manipulatives and representations. If this was shown not to be effective specialist interventions will have been tried. This would occur alongside use of the Birmingham SEN Toolkits. Please refer to the teaching and learning ideas for clarification of approaches and intervention. If the pupil still makes little or no progress then they will be considered to have severe and persistent difficulties.

Whilst recognising that recall of number bonds occur across a continuum from mild to severe, Pupil and School Support will focus on identifying pupils who have persistent and severe difficulties as having dyscalculia. Therefore, before dyscalculia is considered as a possible cause for observed difficulties it is imperative that steps have been taken and provision made to address them.

The Role of Schools

The SEND Code of Practice (April 2015), which describes a graduated approach, begins with High Quality Teaching and follows an 'assess, plan, do and review' process.

The National Curriculum Framework (2014) states that all teachers:

- Set suitable learning challenges
- Overcome barriers to learning
- Respond to pupil's diverse needs

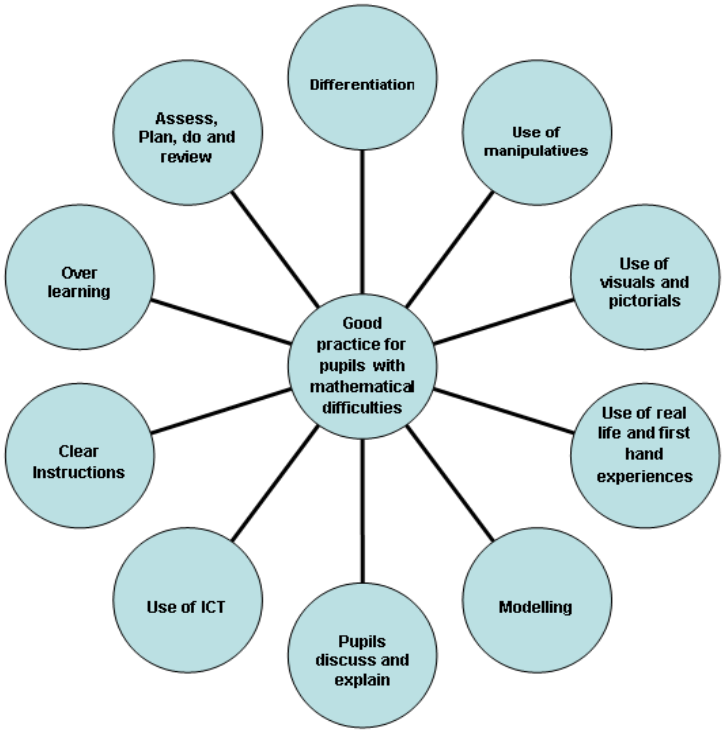
High quality teaching and 'dyscalculia friendly' practice

There are certain teaching methods and practical approaches which are particularly effective to promote access to learning for all children, including those with

dyscalculia. For the most part these strategies should just be part of high-quality teaching (HQT) rather than being something additional.

The following diagram shows some of the common features of HQT / mathematical difficulties friendly strategies. In addition please refer to the Birmingham Mathematic Toolkit Teaching and Learning Ideas.

Diagram 1: Common features of high quality teaching and dyscalculic friendly strategies.



Information for parents/carers

Appendix 1b contains information, which schools are encouraged to share with parents/carers who might be concerned about whether their child has difficulties consistent with the definition of dyscalculia. It also incorporates further information about the kind of support that is available in schools.

Appendix 2 contains answers to frequently raised questions.

Appendix 3 contains a permission slip that should be used to gain parents informed consent for Pupil and school Support professionals to work with their child.

Additionally, Pupil and School Support can offer support to parents and carers.

Assessment of dyscalculia

As with the identification of dyslexia, it is important to note that current research clearly indicates that the identification of dyscalculia does not take place through a one-off assessment. Pupil and School Support identifies dyscalculia when difficulties occur in:

- Number sense
- Subitising
- Symbolic and non-symbolic magnitude comparison
- Ordering

Assessments take place over time and difficulties are persistent despite universal, targeted and specialist support through the graduated approach (SEND CoP, 2015).

Screening for Dyscalculia

The following lists provide schools with examples of suggested initial checklists and screening tools which could be used as part of the process of identifying dyscalculia and other maths-related difficulties. There are many different types of screening tests: Some are delivered by computer, others need to be administered by a teacher. It is important to note that these tests cannot be used to give a formal identification and are not 100% accurate, as they are a one off assessment, without prior knowledge of the child or young person's experiences, whether their language skills affect access or whether they have received high quality teaching using appropriate methods. Please consult your PSS teacher for further advice and information.

Initial checklists

- S. Chinn – Dyscalculia checklist (2019) and activities from 'More Trouble with Maths' (2017) http://www.stevechinn.co.uk/dyscalculia/the-dyscalculia-checklist
- SNAP SpLD - https://www.hoddergibson.co.uk/subjects/general/products/second-level-ages-11–14/snap-spld-(special-needs-assessment-profile)-subscription
- British Dyslexia Association Neuroprofiler – two available: one for primary aged and another for secondary https://www.bdadyslexia.org.uk/advice/educators/teaching-for-neurodiversity
- British Dyslexia Association – Dyscalculia Checklist

Screening tests

- Dyscalculia Screener (GL assessment) – online screening tool with tests assessing subitising, number sense etc. (minimum purchase 10 tests) https://www.gl-assessment.co.uk/products/dyscalculia-screener-and-guidance/
- Fiefer Assessment of Mathematics – the screening element comprises three key subtests
- Dynamo Maths Profiler – For subscribing schools, this provides a tailored programme of intervention post-test https://www.dynamoprofiler.co.uk
- Diagnostic Assessment of Maths Skills (DANS) – for KS1 and KS2 only https://www.senbooks.co.uk/product/diagnostic-assessment-of-numeracy-skills-dans-

NB. Several of the tests listed above are only to be administered by those with specialist teacher status. Please ensure you check this when selecting assessments to use.

Assessment through teaching

Birmingham has developed an **assessment through teaching approach** that describes the process towards an identification of a specific learning difficulty or co-occurring difficulties. It is designed to help ensure that, as well complying with the requirements of the SEND Code of Practice 2015, it ensures that children and young people receive the support they need.

Assessment Through Teaching: A Graduated Approach for the identification of Specific Learning Difficulties

Graduated Approach

Step 1 High Quality Teaching
School delivers High Quality Teaching.
Has progress been made? If yes continue appropriate level of provision.

Y

N

Step 2 Universal Support
Class teacher/parent has concerns re progress; provide Universal Support with personalised targets. **Has progress been made**? **If yes** continue appropriate level of provision.

Y

N

Step 3 Targeted Support
Concerns continue so school involves SENCo/school based specialist; provide Targeted Support.
Has progress been made? If yes continue appropriate level of provision.

Y

N

Step 4 Specialist Support
Concerns continue so school should involve specialist services to provide assessment and consultation that considers a general difficulty or a specific difficulty.
Has a general difficulty been identified? If yes, continue with targeted and specialist support to address all areas of difficulty.

Y

N

Evidence Needed

School able to evidence High Quality Teaching and Universal Support, voice of young person and parent e.g. ITP, PCR approaches, use of concrete and pictorial supports

School able to evidence Targeted Support, voice of young person and parent e.g. see above, plus evidence of small group interventions.

School able to evidence Specialist Support. Appropriate professional can support with assessment to ascertain if it is a general difficulty.

Y

Targeted and Specialised Support delivered. Decision to be made in consultation with professional. If progress is being made continue with specialist support. If progress plateaus or slows review as to whether a **period of intensive support is appropriate.**

Y

N

Step 5a Period of intensive Support: Schools to discuss what has worked and has not worked as part of a graduated approach in consultation with the schools' visiting professionals. Specialist support will be planned together to include a standardised pre- and post- assessment carried out PSS and/or a specialist assessor, a specialist intervention carried out by schools.

Step 5b Pre-assessment of skills: Standardised assessments completed by appropriate professionals.

Step 5c Intensive Personalised Specialist Support:
At least 6-months of specialist support implemented, and adaptations made as recommended by professional. If moving forward as possible co-occurrent difficulties both literacy and mathematics interventions to be implemented

School able to evidence Specialist Support, voice of young person and parent/carer.

Step 5d Post-assessment of skills: Standardised assessments completed by appropriate professional.

Step 6 Review of all evidence to inform report.
Possible Outcomes:
1) Progress has been made: continue appropriate level of provision.
2) **Despite all of the above, there is a persistent difficulty:** specific learning difficulties can be identified. Continue with personalised specialised support to address all areas of difficulty. Ongoing review of progress and recommendations by appropriate professional.

Step 1: High Quality Teaching

The ATT approach and indeed provision for **all** pupils begins with **high quality teaching (HQT)**. The SEND Code of Practice (2015) states "class and subject teachers, supported by their senior leadership team, should make regular assessment of progress for all pupils. These should seek to identify pupils making less than expected progress given their age and individual circumstances" (page 95, point 6:17). Whatever type of provision young people receive, HQT should underpin it all and be on-going.

HQT has the following features:

- highly focused lesson design with sharp objectives
- high demands of pupil involvement and engagement with their learning
- high levels of interaction for all pupils
- appropriate use of teacher questioning, modelling and explaining
- an emphasis on learning through dialogue, with regular opportunities for pupils to talk both individually and in groups
- an expectation that pupils will accept responsibility for their own learning and work independently
- regular use of encouragement and authentic praise to engage and motivate pupils.

Personalised Learning: A Practical Guide (DCSF, 2008)

- dyslexia friendly strategies
- regular use of manipulatives, real life experiences and applications, visual/pictorial supports

Step 2: Universal Support

For those children and young people for whom HQT does not result in sufficient progress **universal support** should be given. This means that as well as providing HQT, the teacher will make adaptations to classroom practice and use support strategies to enable children to learn inclusively and meaningfully alongside their peers, such as the use of writing slope, word banks, manipulatives and visual supports independently and freely accessed, as well as identifying gaps and next steps in their learning. Most pupils with dyslexia and maths difficulties can be supported effectively at this level of provision.

Step 3: Targeted Support

If progress is still insufficient, then in addition to HQT and universal support, the child/young person will receive additional support that is specific, time limited and evidence based from well trained staff who are highly effective. **This is called 'targeted support'** (examples can be found in the Toolkit teaching and learning ideas) and can be delivered individually or in a group depending on the intervention being used. Settings may choose to request advice from PSS or P EPS at this point regarding interventions and strategies to support in class.

Step 4: Specialist Assessment

If progress is still insufficient, there will be a need to establish whether or not a pupil's difficulties with literacy and / or mathematics are: general (with or without difficulties in the identified areas) or specific (within the identified areas). A referral at this stage should be made to an outside agency for a formal assessment and consultation to establish the range of needs and next steps for the pupil.

At this point in the graduated approach, schools should ensure that they are secure in their knowledge that factors such as wider language needs, difficulties associated with dyslexia, dyscalculia or Developmental Language Disorder (e.g. poor working memory, sequencing or recording skills), or sporadic attendance, for example, are not the cause of the pupil's difficulties acquiring literacy and/or numeracy skills.

If general Literacy or Mathematical difficulties are identified, then High Quality Teaching, Universal and Targeted Support will continue, following recommendations from outside agencies. This specialist provision will include one or more evidence-based interventions (**see the Birmingham SEN Toolkit Teaching and Learning ideas**) to meet the range of needs presented.

If word level or Numbersense difficulties are present at this stage either with or without other general difficulties, it may be recommended by the professional involved that there is a period of intensive support. The decision will largely depend on the response to intervention and will need to be part of the professional consultation process.

Gaining relevant feedback from parents/carers would also be expected at this point e.g. health and

At each level of support, it is vital, as prescribed in the SEND Code of Practice, that parents are involved in the process. In addition, the views of the young person should also be sought and considered.

Who should be considered for an identification of specific learning difficulties?

1. Following an initial assessment and advice from the relevant professional, consideration will be given as to whether the evidence suggests that the child/young person has a wide range of difficulties, and an identification of specific

learning difficulties may not be appropriate. An assessment for specific difficulties should only be considered if difficulties are present despite consistent provision.

2. If evidence suggests a more specific difficulty (or co-occurring difficulties) has been identified, then a period of specialist support will be implemented which will include pre and post assessments of skills and targeted intervention supported by outside agencies. This will confirm if the presenting difficulties are severe and persistent in line with current definitions of dyslexia and/ or dyscalculia.

Step 5: Specialist support

Specialist support will include:

a) Standardised and diagnostic pre-assessment of skills

b) Specialist intervention for at least 6-months, addressing any gaps in skills and areas identified to meet criteria of specific learning difficulties.

c) Standardised and diagnostic post-assessment of skills

NB: A period of 6-months must pass to ensure that any identified difficulties are persistent.

The Post-assessment of skills is a comprehensive diagnostic assessment carried out by an appropriately qualified professional who has undergone dyscalculia and/or dyslexia specific professional development. Settings can request an assessment from their allocated or additionally purchased hours.

Possible outcomes:

1. If evidence collected reflects accelerated progress, as identified by the specialist support service involved, an identification of SpLD should not be considered. This is because the difficulty will have been shown as **not** 'persistent or severe, despite appropriate provision'. If this is the case, then the level of provision needed by the young person is likely to decrease or be maintained.

2. If evidence collected indicates severe and persistent difficulties, despite a high level of intervention a formal identification will be given.

Step 6: Review of all evidence to inform the report.
If the assessment does reinforce the submitted evidence then an identification of Specific Learning Difficulties will be given. A report will be written detailing the results of the assessment, recommendations of further appropriate strategies/interventions and confirmation that the young person has dyslexia/dyscalculia or co-occurring difficulties.

Documents to support the process

In the appendix you will find the following documents to support the implementation of the Assessment Through Teaching approach:

Appendix 1a: Information for Parents – Dyslexia

Appendix 1b: Information for Parents - Dyscalculia

Appendix 2: Answers to frequently asked questions

Appendix 3: Parent/carer consent form for the identification of Specific Learning Difficulty

Appendix 1a: Information for parents - Dyslexia

Most children learn to read and write easily, others take longer and may need extra help. However, a few children find the process of learning to read and spell particularly hard and it can then become a barrier to learning. Such children may have underlying problems that, despite appropriate teaching, affect their ability to learn these skills. This can sometimes be referred to, particularly by professionals, as a 'Specific Learning Difficulty' (SpLD) or dyslexia.

The SEND Code of Practice 2015, states that "specific learning difficulties (SpLD), affect one or more specific aspects of learning". This is an umbrella term used to describe a variety of learning differences. These include dyslexia, dyspraxia and dyscalculia.

The term dyslexia is derived from two Greek words, 'dys' meaning 'difficulty' and 'lexia' from the root 'lexis' meaning 'words or language'. The literal meaning is therefore 'difficulty with words'.

There is no single identified underlying cause for dyslexia or one single definition. This can lead to difficulties when trying to identify it.

Despite the use of different definitions of dyslexia, expert views largely agree on two basic points:

1. It is now widely accepted that dyslexia exists.

2. Identifying dyslexia and developing ways to support dyslexic learners should be the focus of the way forward (Rose Report 2009 p9).

Birmingham, in line with current thinking and research, accepts and recognises the need for the following definition:

Rose Report Definition:

Dyslexia is a learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling and in addition:

Characteristic features of dyslexia are difficulties in phonological awareness, verbal memory and verbal processing speed. Dyslexia occurs across the range of intellectual abilities.

This definition recognises that, for an identification of dyslexia to be made, the appropriate provision must first have been made. Without this provision it would not be possible to tell whether or not the difficulties are ‘persistent and severe’. This is why, when the school is requesting an assessment of dyslexia, they will be asked to submit evidence of what provision has been made to date to address the observed and assessed difficulties.

Birmingham has taken into account the most up-to-date research and the BPS and Rose report definitions in order to agree that dyslexia occurs at the word level in terms of either:

1) incomplete reading and/or spelling accuracy

2) incomplete accuracy and fluency in reading and/or spelling

(Rose, 2009; BPS, 1999)

Birmingham is also basing the identification process on the following:

These difficulties are persistent and severe despite appropriate learning opportunities within an assessment through teaching approach (BPS, 1999) and pupils have made less than expected progress following targeted interventions and the involvement of specialist support that has been tailored to pupils individual needs (0 to 25 SEND Code of Practice, 2015).

However, dyslexia is not all about difficulties. Children and young people may have strengths in the following areas:

- problem solving
- music
- art
- sport
- ICT
- discussion/explanations

It helps to discover and celebrate strengths and to work with the school to develop them. It is also important to keep a child’s confidence and self-esteem high. If you feel that your child’s difficulties with reading and spelling are affecting their progress at school, this may be the time to talk to your child’s class-teacher

and discuss your concerns. Schools have copies of the Assessment Through Teaching Guidance (2023) for further information and support.

What can the school do to support my child?

Teachers regularly assess a child's progress to help them plan new work and identify areas of strength and any difficulties that a child may be presenting. If teachers are concerned about progress they can look at how they can adapt their teaching and/or the environment to help the child learn; this may include making small changes to the way a lesson is taught, the materials that are used, or the support given to a child or to a group of children in some lessons.

For more detailed, specific information about what your child's school provides see the school SEND Information Report. This is something that the SEND Code of Practice 2014 requires schools to publish on their websites. It is updated annually. It will also provide a link to the Local Authority's Local Offer. This gives information about what provision is available across the city. To go straight to the Local Offer, please see the following link:

https://www.localofferbirmingham.co.uk/

The levels of support given to children and young people are defined in the 0 to 25 SEND Code of Practice 2015 as Universal, Targeted and Specialist.

Universal Support: In addition to Quality First Teaching, the class teacher will make creative adaptations to classroom practice and use support strategies to enable children to learn inclusively and meaningfully alongside their peers e.g. use of a writing slope, word banks and so on. The vast majority of pupils with dyslexia can be supported effectively with this level of support.

Targeted Support: In addition to Quality First Teaching (and probably Universal support too) the child/young person will receive additional support that is specific, time-limited and evidence-based from well-trained staff who are highly effective. An example of such an intervention is Cued Spelling. Targeted support can be individual or in a group depending on the intervention being delivered.

Specialist Support: Quality First Teaching and Universal Support are likely to continue but the young person's needs are such that they require the skills of a specialist teacher or group of professionals to be involved. The majority of the

pupil's time is spent in the mainstream classroom but their 'additional to and different from' provision is highly personalised and very closely monitored. The class or subject teachers should be clear on how to encourage independence and boost confidence.

Appendix 1b: Information for parents - Dyscalculia

Most children learn to count and calculate easily, others take longer and may need extra help. However, a few children find the process of learning to count and calculate particularly hard and it can then become a barrier to learning. Such children may have underlying problems that despite appropriate teaching affect their ability to learn these skills. This can sometimes be referred to, particularly by professionals, as a 'specific maths difficulty' or dyscalculia.

The SEND Code of Practice 2015, states that "specific learning difficulties (SpLD), affect one or more specific aspects of learning". This is an umbrella term used to describe a variety of learning differences. These include dyslexia, developmental co-ordination disorder DCD (dyspraxia) and dyscalculia.

The term dyscalculia is derived from two Greek words, 'dys' meaning 'difficulty' and 'calculia' from the Latin calculare to calculate. It is a difficulty in learning or comprehending arithmetic, such as difficulty in understanding numbers, learning how to manipulate numbers, and learning facts in mathematics.

There is no single identified underlying cause for dyscalculia or one single definition. This can lead to difficulties when trying to identify it.

Despite the use of different definitions of dyscalculia, expert views largely agree that pupils/young people will have significant and persistent difficulties with:

- Estimation and number sense
- Counting backwards.
- Remembering 'basic' facts, despite many hours of practice/rote learning.
- Understanding place value and the role of zero in the Arabic/Hindu number system.
- Performing calculations, tending to be slower as struggle to develop strategies to compensate for lack of recall, other than to use counting.

Pupil and School Support, in line with current thinking and research, accepts the following definition:

Dyscalculia Definition

Dyscalculia is a specific and persistent difficulty in understanding numbers which can lead to a diverse range of difficulties with mathematics. It will be unexpected in relation to age, level of education and experience and occurs across all ages and abilities.

Mathematics difficulties are best thought of as a continuum, not a distinct category, and they have many causal factors. Dyscalculia falls at one end of the spectrum and will be distinguishable from other mathematics issues due to the severity of difficulties with number sense, including subitising, symbolic and non-symbolic magnitude comparison, and ordering. It can occur singly but can also co-occur with other specific learning difficulties, mathematics anxiety and medical conditions.

(Agreed by both the SASC/STEC and BDA Working Groups on Dyscalculia 2019)

As definitions and diagnoses of dyscalculia are in their infancy and sometimes contradictory, it is difficult to suggest a prevalence, but research suggests it is around 6%. However, 'mathematical learning difficulties' are certainly not in their infancy and are very prevalent and often devastating in their impact on schooling, further and higher education and jobs.

Developmental Dyscalculia often occurs in association with other developmental disorders such as dyslexia or ADHD/ADD. Co-occurrence of learning disorders appears to be the rule rather than the exception. Co-occurrence is generally assumed to be a consequence of risk factors that are shared between disorders, for example, working memory. However, it should not be assumed that all dyslexics have problems with mathematics, although the percentage may be very high, or that all dyscalculics have problems with reading and writing. This latter rate of co-occurrence may well be a much lower percentage.'

The SEND Code of Practice 2015, states:

> 'Specific learning difficulties (SpLD), affect one or more specific aspects of learning. This encompasses a range of conditions such as dyslexia, dyscalculia and dyspraxia.' This is the only reference within the document.

For an identification of dyscalculia to be made, **the appropriate provision must first have been made**. Without this provision it would not be possible to tell whether the difficulties are 'persistent and severe'. Therefore, when the school is requesting an assessment, they will be asked to submit evidence of what provision has been made to date to address the observed difficulties.

Pupil and School Support are also basing the identification process on the following:

These difficulties are persistent and severe, and pupils have made less than expected progress following targeted interventions and the involvement of specialist support that has been tailored to pupils' individual needs (SEND CoP, 2015).

However, specific mathematical difficulties are not all about deficits. Children and young people may have strengths in the following areas:

- problem solving
- music
- art
- sport
- ICT
- discussion/explanations

It helps to discover and celebrate strengths and work with the school to develop them. It is also important to keep a child's confidence and self-esteem high. If you feel that your child's difficulties with mathematics are affecting their progress at school, this may be the time to talk to your child's class or subject teacher and discuss your concerns. Schools have copies of Birmingham's Assessment Through Teaching Guidance (2023) for further information and support.

What can the school do to support my child?

Teachers regularly assess a child's progress to help them plan new work and identify areas of strength and any difficulties that a child may be presenting. If teachers are concerned about progress, they can look at how they can adapt their teaching and/or the environment to help the child learn; this may include making small changes to the

way a lesson is taught, the materials that are used, or the support given to a child or group of children in some lessons.

For more detailed, specific information about what your child's school provides see the school SEND Information Report. This is something that the SEND Code of Practice 2015 requires schools to publish on their websites. It is updated annually. It will also provide a link to the Local Authority's Local Offer. This gives information about what provision is available across the city. To go straight to the Local Offer please see the following link:
https://www.localofferbirmingham.co.uk/
The levels of support given to children and young people are defined in the SEND Code of Practice 2015 as universal, targeted and specialist.

Universal Support: In addition to high quality teaching, the class teacher will make creative adaptations to classroom practice and use support strategies to enable children to learn inclusively and meaningfully alongside their peers e.g. use of manipulatives, visuals, sentence frames to support oral explanations. Most pupils with mathematical difficulties can be supported effectively with this level of support.

Targeted Support: In addition to high quality teaching the child/young person will receive additional support that is specific, time limited and evidence based from well trained staff who are highly effective. Targeted support can be individual or in a group depending on the intervention being delivered.

Specialist Support: High quality teaching and universal support are likely to continue but the young person's needs are such that they require the skills of a specialist teacher or group of professionals to be involved. Most of the pupil's time is spent in the mainstream classroom but their 'additional to and different from' provision is highly personalised and very closely monitored. The class or subject teachers should be clear on how to encourage independence and boost confidence.

Appendix 2: Frequently asked questions

Q. Is dyslexia or dyscalculia hereditary?

A. There is substantial evidence to support the view that dyslexia is evident in generations of families (Ott, 1993). It could often skip a generation or be present in the extended family such as uncles or cousins, as well as in siblings. Another study which followed the development of children born to parents with dyslexia revealed a heightened risk of literacy impairment (Snowling & Frith, 2003). There is also evidence that dyscalculia may have a biological rooting as indicated in studies of genetics (Ludwig et al. 2013).

Q. Why use the term dyslexia or dyscalculia instead of Specific Learning Difficulties?

A. Dyslexia and dyscalculia are examples of a Specific Learning Difficulty (other examples include developmental coordination disorder (dyspraxia). Therefore, the terms dyslexia and dyscalculia are used to help us to understand the learning profile of the young person and the skills and difficulties they may have.

Q: What is dyslexia?

Dyslexia is a learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling. The most up-to-date research and the BPS and Rose report definitions agree that dyslexia occurs at the word level in terms of either:

1) incomplete reading and/or spelling accuracy

2) incomplete accuracy and fluency in reading and/or spelling

(Rose, 2009; BPS, 1999)

These difficulties are persistent and severe despite appropriate learning opportunities within an assessment through teaching approach (BPS, 1999). Therefore pupils with dyslexia will have made less than expected progress following targeted interventions and the involvement of specialist support that has been tailored to pupils' individual needs (SEND CoP, 2015).

Q: What is dyscalculia?

A: You may hear the terms “specific maths difficulty,” “specific learning difficulty in maths” or “dyscalculia.” These terms all refer to a type of disorder that significantly impacts a person’s ability to learn and perform in maths. There is no single profile of dyscalculia. The signs of dyscalculia will vary from person to person, and they will affect people differently at different times in their lives. Difficulties in maths are often missed in the early years because children are learning many basic skills through memorisation. Children with dyscalculia may be able to memorise and recite their 1-2-3s, but they may not be building the “number sense” that is essential to future maths learning.

Q. Can dyslexia or dyscalculia occur across the full range of abilities?

A. Yes. Dyslexia and dyscalculia affect children across the range of intellectual abilities (Rose Report p10 and SASC 2019 dyscalculia definition).

Q. How do parents get their child’s dyslexia and /or dyscalculia acknowledged?

A. The best place to start is in school. If parents/ carers have any worries about their child’s literacy or maths development, they should talk to the class/form teacher and possibly the SENCO who can share information about the graduated Assessment Through Teaching approach.

Q. Who can identify that a child has dyslexia and/or dyscalculia?

A. In Birmingham we prefer to use the term identification rather than diagnosis. This is because the term diagnosis implies a medical condition.

In order to make a formal identification of dyslexia or dyscalculia, the assessor must hold a suitable qualification. They must be either a registered Educational Psychologist or hold an appropriate Postgraduate Diploma and are also be accredited by the British Dyslexia Association (BDA) and hold current AMBDA accreditation (Associate Member of the British Dyslexia Association).

Q. What is the best test for dyslexia and/or dyscalculia?

A. There is no single test for dyslexia or dyscalculia. This is because a one-off test can only ever give a snap-shot of a child’s performance at a single point in time. It

does not take into account whether or not appropriate support and provision has been given to address any difficulties. This is important in order to be able to identify whether or not the difficulties are ‘severe and persistent’ (see the previously mentioned definitions of dyslexia and dyscalculia).

Q. How does Birmingham assess for dyslexia and/or dyscalculia?

A. There is no single test for dyslexia and/or dyscalculia; Birmingham uses the assessment through teaching approach. This involves observing and assessing how a child / young person responds to provision that is put in place by the school / setting at the universal, targeted and specialist stages as detailed in the SEND Code of Practice 2015.

Standardised tests are used to support professional judgement in identifying literacy difficulties at the word level and maths difficulties that are severe and persistent over time.

Q. What is specialist dyslexia or dyscalculia teaching?

A. Teaching to support dyslexia/dyscalculia is high quality literacy/maths teaching that addresses the needs of the individual and is usually delivered in the classroom; however some schools may have access to a specialist dyslexia/dyscalculia teacher who has attained accredited specialist qualifications usually at a post graduate level.

Q. How many children experience dyslexia or dyscalculia?

A. Around 4 to 8% of the school population is estimated to have dyslexia (Butterworth & Kovas, 2013) and a similar estimate of prevalence is quoted by Snowling (2013). For the purpose of identification Birmingham will identify dyslexia within this range where word level difficulties continue over a period of time, despite appropriate specialist intervention.

The BDA (2019) consider the incidence of dyscalculia to be around 5%. Morsanyi et al. (2018b) suggest a similar figure of 5.7%. Butterworth et al. (2011) estimate a prevalence of 5 – 7%.

Q. Can dyslexia or dyscalculia occur in all gender and ethnic groups?

A. Yes, dyslexia and literacy difficulties can be identified in males and females across languages, ethnic and socio economic groups (Rose Report p36).

Dyscalculia and maths difficulties can be identified in males and females (Morsanyi et al. 2018b).

Q. If a child is identified as having dyslexia and/or dyscalculia; will this always be the case?

A. Yes – dyslexia and dyscalculia are severe and persistent conditions that will require ongoing appropriate strategies and intervention for any literacy or maths based activities.

Q: **Why might a child have difficulty with counting?**

A: When children don't have a well-developed number sense, they often approach maths tasks by guessing and hoping their answers are correct. They lack a basic understanding of how numbers work and how they can be used to solve problems in school and in life.

Number sense is the underlying ability to understand numbers and work with them in fluid and flexible ways. Number sense allows you to perform mental maths, so you don't have to count every time you want to solve a problem. It also allows you to tell how one amount compares to another, how things rank in order and how things compare in size and measurement.

If counting is the area of weakness, number sense could be a good place to focus attention. The child will likely benefit from targeted instruction and lots and lots of practice.

Q: What is the difference between dyscalculia and maths anxiety?

A: Dyscalculia and maths anxiety often go hand in hand but are not necessarily co-occurring. Maths anxiety is a situation-specific anxiety which can be described as "an emotion that blocks a person's reasoning ability when confronted with a mathematical situation".

Symptoms of maths anxiety include:

1. Emotional symptoms: feeling of helplessness; lack of confidence; fear of getting things wrong.

2. Physical symptoms: heart racing; irregular breathing; sweatiness; shakiness; biting nails; feeling of hollowness in stomach; nausea.

3. Frustration from trying to do maths and not being successful.

4. Not knowing where to start with questions or never getting the right answer.

5. Confused and just wanting to quit and go home.

6. Very stressed before and during exams.

7. Begin to shut down and stop listening in class.

Q: What's the difference between dyscalculia and maths difficulties associated with dyslexia and developmental co-ordination disorder DCD (dyspraxia)?
A: Imagine a chart with three columns, labelled dyslexia, developmental co-ordination disorder DCD (dyspraxia) and dyscalculia. In each column are listed the specific types of difficulties associated with it.

What you would notice right away is that there's some overlap among the columns. Some symptoms only appear in one column, whilst others appear in more than one. Each of these conditions is different in some significant way, but there's a lot of overlap.

You can use taking notes in maths class or copying from the board as an example:

- Children with dyslexia may struggle to listen to the teacher and write at the same time. They may struggle with spelling. They might write important terms incorrectly, making it impossible for them to use their notes at home to complete maths homework assignments or study for maths tests.
- Children with developmental co-ordination disorder DCD (dyspraxia) may also struggle with writing and copying tasks. They may struggle to keep within the lines and columns while doing calculations or drawing figures. They may have poor visual-spatial skills. This leads to trouble with organizing work in ways that

demonstrate what they know. If you have concerns regarding DCD please refer to medical services such as a paediatrician.

- Children with either dyslexia or dyscalculia will likely have trouble with the “language” of maths. This makes it difficult to figure out the question they're being asked. It also makes it hard to understand the nature of the problem that needs to be solved.

Keep in mind that whist children might struggle with maths for different reasons, the provision might be similar or even the same. What helps students with these issues? The right types of instruction, targeted intervention and feedback, and opportunities to self-correct their work. Appropriate accommodations are also crucial. With these supports, individuals with any of these issues can almost always overcome their troubles in maths.

Q: Is dyscalculia just the same as dyslexia?

A: Although dyscalculia is sometimes referred to as “maths dyslexia,” that’s just a nickname. Dyscalculia and dyslexia are separate conditions that have some overlapping symptoms. Children dealing with both tend to have difficulty with language-based maths issues, such as solving word problems and learning maths vocabulary.

Support Available for Parents:

Special Educational Needs and Disability Information Advice and Support Service (SENDIASS)

Opening hours 8.45am to 5pm, Monday to Friday.

Lancaster Circus
PO Box 16289
Birmingham
B2 2XN
Telephone: 0121 303 5004
Email: sendiass@birmingham.gov.uk

Appendix 3: Parent/carer consent form for the identification of SpLD

Your child has been receiving support through an 'assessment through teaching' approach that has been delivered in school over a period of time. This graduated approach follows the statutory guidance for supporting children who are experiencing difficulties in learning (SEND Code of practice 2015).

As part of this approach, advice has been sought from outside agencies, who have assessed your child and recommended a period of targeted intervention, followed by a reassessment.

As a school we now wish to make a referral to a Pupil and School Support teacher with a specialist qualification in Specific Learning Difficulties. The PSS teacher will review the evidence presented to establish whether your child has specific difficulties which are 'severe and persistent' in line with the Assessment Through Teaching guidance. As a result, your child may or may not be identified as having dyslexia and/or dyscalculia.

Your permission is required to enable the PSS teacher to review the evidence and discuss your child's learning and progress with the school SENCO and other professionals already involved.

The PSS teacher will keep records of their involvement and will produce a written record of the consultation. Please note this information may be shared electronically.

I give permission for the Pupil and School Support Service to review and discuss evidence of the assessment through teaching approach that has been undertaken with my child.

School:……

Child's Name:……

Date of Birth:…….

Name of parent/carer:…….

Signed:……..

Date:……..