



## Dyslexia and the impact of co-occurring dyscalculia

- Formal definitions
- Similarities and differences
- Resources to support students

www.amanda-keen.com

SEND Group

1

---

---

---

---

---

---

---

---

## Delphi definition of dyslexia



www.amanda-keen.com

SEND Group

2

---

---

---

---

---

---

---

---

## Introducing a New Definition of Dyslexia\*

\*SASC (2024) found at <https://www.patoss-dyslexia.org/news/introducing-a-new-definition-of-dyslexia>

- Dyslexia is primarily a set of processing difficulties that affect the acquisition of **reading** and spelling.
- In dyslexia, some or all aspects of literacy attainment are weak in relation to age, standard teaching and instruction, and level of other attainments
- Across languages and age groups, difficulties in **reading** and spelling fluency are a key marker of dyslexia.

www.amanda-keen.com

SEND Group

3

---

---

---

---

---

---

---

---

## Introducing a New Definition of Dyslexia\*

\*SASC (2024) found at <https://www.patoss-dyslexia.org/news/introducing-a-new-definition-of-dyslexia>

- The nature and developmental trajectory of dyslexia depends on multiple genetic and environmental influences.
- Dyslexic difficulties exist on a continuum and can be experienced to various degrees of severity.
- Dyslexia can affect the acquisition of other skills, such as mathematics, reading comprehension or learning another language.



[www.amanda-keen.com](http://www.amanda-keen.com)



4

---

---

---

---

---

---

---

---

## Introducing a New Definition of Dyslexia\*

\*SASC (2024) found at <https://www.patoss-dyslexia.org/news/introducing-a-new-definition-of-dyslexia>

- The most commonly observed cognitive impairment in dyslexia is a difficulty in phonological processing (i.e. in phonological awareness, phonological processing speed or phonological memory). However, phonological difficulties do not fully explain the variability that is observed.



[www.amanda-keen.com](http://www.amanda-keen.com)



5

---

---

---

---

---

---

---

---

## Introducing a New Definition of Dyslexia\*

\*SASC (2024) found at <https://www.patoss-dyslexia.org/news/introducing-a-new-definition-of-dyslexia>

- Dyslexia frequently co-occurs with one or more other developmental difficulty, including developmental language disorder, dyscalculia, ADHD, and developmental coordination disorder.



[www.amanda-keen.com](http://www.amanda-keen.com)



6

---

---

---

---

---

---

---

---

## Current definition of dyscalculia



7

---

---

---

---

---

---

---

---

## Definition of Developmental Dyscalculia\*

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

\*BDA/SASC (2019)

8

---

---

---

---

---

---

---

---

## Definition of Developmental Dyscalculia

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 maths issues due to the severity of difficulties with number sense, including subitising, symbolic and non-symbolic magnitude comparison, and ordering.

9

---

---

---

---

---

---

---

---

## Maths is like a foreign language

- 一足す一歩に
- 四掛ける五は虹湯
- 五引く三は二
- 二割る二は



www.amanda-keen.com



10

---

---

---

---

---

---

---

---

## Definition of Developmental Dyscalculia

It can occur singly but often co-occur with other specific learning difficulties, mathematics anxiety and medical conditions.



www.amanda-keen.com



11

---

---

---

---

---

---

---

---

## Similarities and differences



www.amanda-keen.com



12

---

---

---

---

---

---

---

---



13

---

---

---

---

---

---

---

---



14

---

---

---

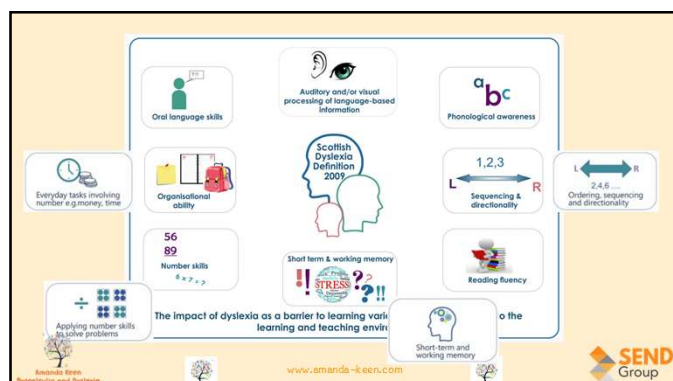
---

---

---

---

---



15

---

---

---

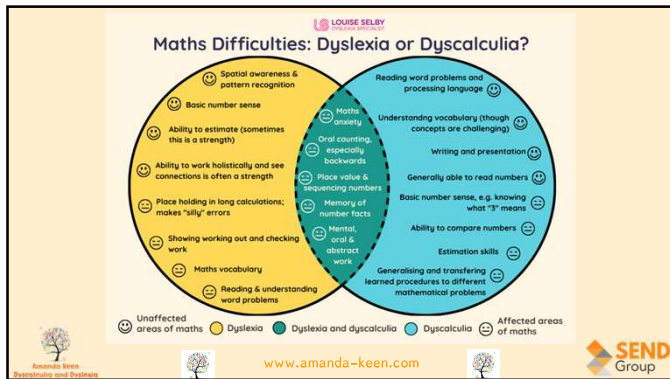
---

---

---

---

---



16

---

---

---

---

---

---

---

---



17

---

---

---

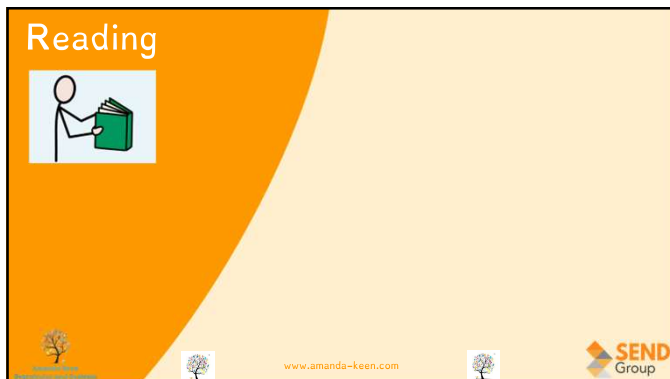
---

---

---

---

---



18

---

---

---

---

---

---

---

---



19

---

---

---

---

---

---

---

---



20

---

---

---

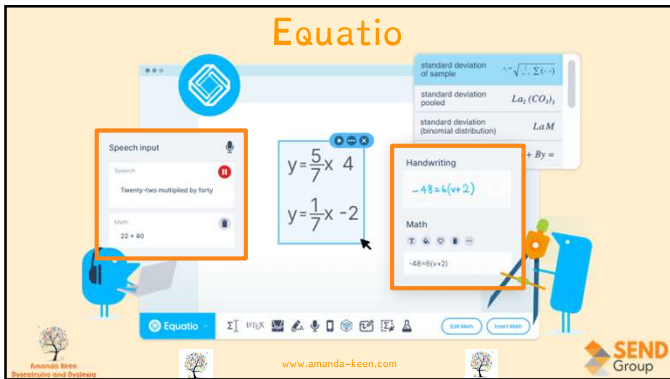
---

---

---

---

---



21

---

---

---

---

---

---

---

---



22

---

---

---

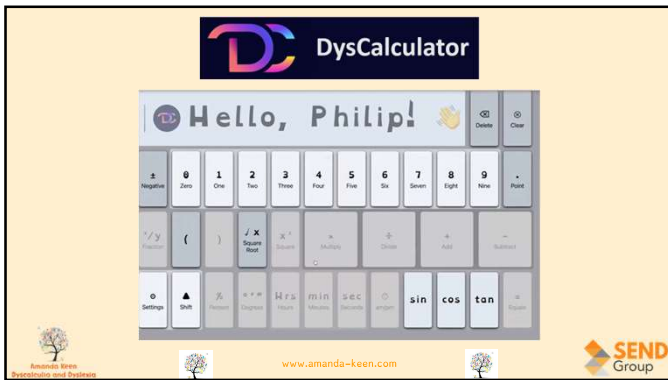
---

---

---

---

---



23

---

---

---

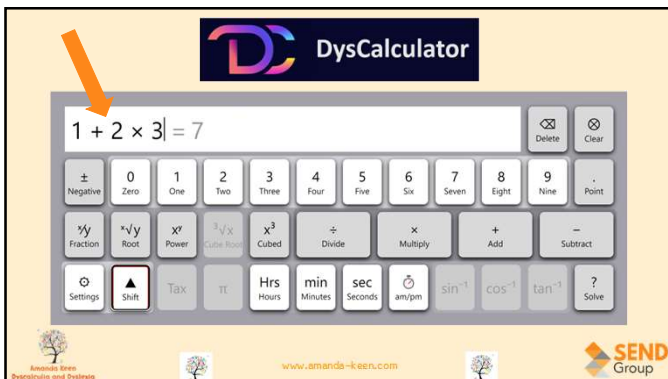
---

---

---

---

---



24

---

---

---

---


---

---

---

---



DysCalculator

1 + 2 × 3 = 7

2 × 3

6

1 + 6


7


Delete


Clear

Close

Show desktop

Amanda Keen  
Specialist and Educator

www.amanda-keen.com

SEND  
Group

25

---

---

---

---

---

---

---

---

DysCalculator

1/3

Delete

Clear

± Negative

0 Zero

1 One

2 Two

3 Three

4 Four

5 Five

6 Six

7 Seven

8 Eight

9 Nine

.

1/x Fraction

(

)

√x Square Root

x² Square

÷ Divide

× Multiply

+

- Subtract

⚙ Settings

▲ Shift

% Percent

° Degrees

Hrs Hours

min Minutes

sec Seconds

am/pm

sin

cos

tan

= Equals

Amanda Keen  
Specialist and Educator

www.amanda-keen.com

SEND  
Group

26

---

---

---

---

---

---

---

---

DysCalculator

09:00am

Delete

Clear

± Negative

0 Zero

1 One

2 Two

3 Three

4 Four

5 Five

6 Six

7 Seven

8 Eight

9 Nine

.

1/x Fraction

√y Root

x^y Power

√[3]{x} Cube Root

x³ Cubed

÷ Divide

× Multiply

+

- Subtract

⚙ Settings

▲ Shift

Tax

π

Hrs Hours

min Minutes

sec Seconds

am/pm

sin⁻¹

cos⁻¹

tan⁻¹

? Solve

Amanda Keen  
Specialist and Educator

www.amanda-keen.com

SEND  
Group

27

---

---

---

---

---

---

---

---

<https://dyscalculianetwork.com/a-calculator-for-dyscalculia/>

Dyscalculia Network  
Unlocking Numbers

DysCalculator Webinar

Hello, Friend!

Watch on YouTube

Amanda Keen  
Dyscalculia and Dyslexia

www.amanda-keen.com

SEND Group

28

---

---

---

---

---

---

---

---

Verbal short-term and working memory

Amanda Keen  
Dyscalculia and Dyslexia

www.amanda-keen.com

SEND Group

29

---

---

---

---

---

---

---

---

**Multisensory Strategies**

Multisensory strategies are a component of multisensory structural language education which focuses on the structured, systematic, direct teaching of the organization of language. Multisensory strategies **combine two or more** of the senses **simultaneously**.

**V** visual  
**A** auditory  
**K** kinesthetic/motor  
**T** tactile

THE DYSLEXIA CLASSROOM

Amanda Keen  
Dyscalculia and Dyslexia

www.amanda-keen.com

SEND Group

30

---

---

---

---

---

---

---

---

## Memory

www.amanda-keen.com

SEND Group

31

---

---

---

---

---

---

---

---

## Memory aids Fact cards

Double  
**9**

Half of  
**18**

$8 + \_ = 10$

$8 + 2 = 10$

Area of a circle

$\pi r^2$

www.amanda-keen.com

SEND Group

32

---

---

---

---

---

---

---

---

## Memory

Use Our Flashcards

Make Your Own

www.amanda-keen.com

SEND Group

33

---

---

---

---

---

---

---

---

## Overlearning



34

---

---

---

---

---

---

---

---

## Games and Apps



35

---

---

---

---

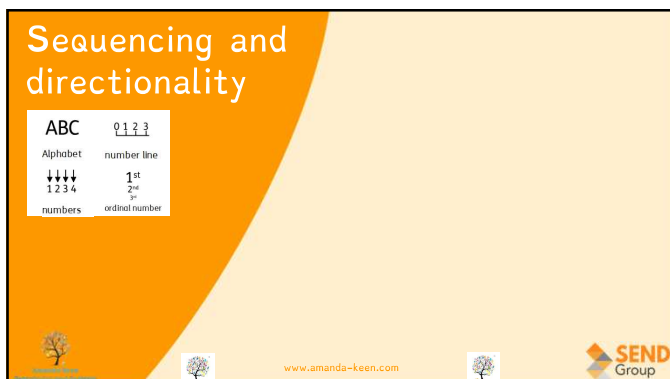
---

---

---

---

## Sequencing and directionality



36

---

---

---

---

---

---

---

---



37

---

---

---

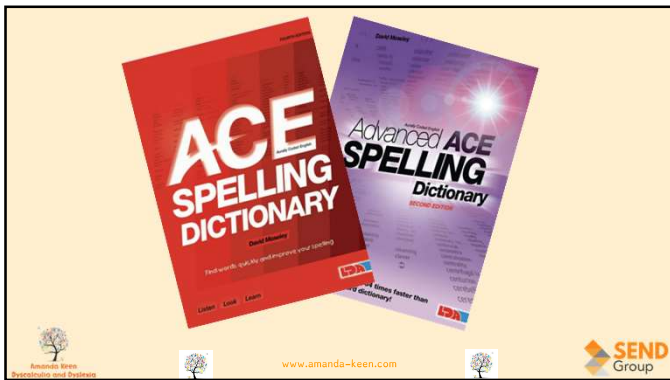
---

---

---

---

---



38

---

---

---

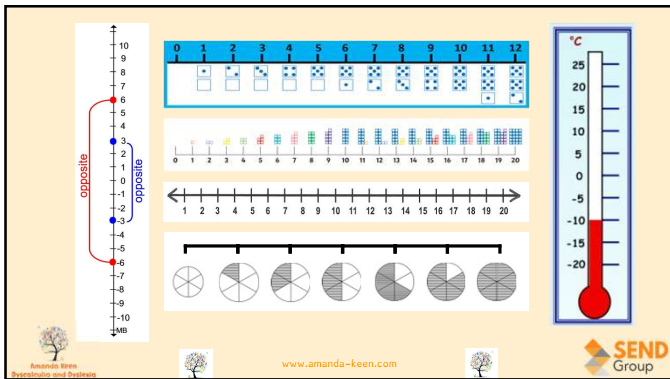
---

---

---

---

---



39

---

---

---

---

---

---

---

---

Organisational  
ability





40

---

---

---


---


---




---

---

---







41

---

---

---

---

---

---

---

---









42

---

---

---

---

---

---

---

---



43

---

---

---

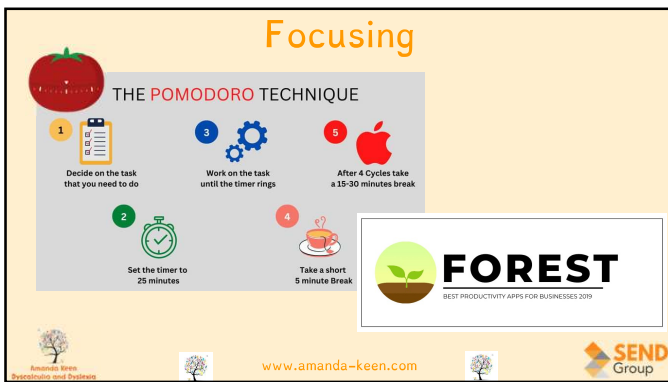
---

---

---

---

---



44

---

---

---

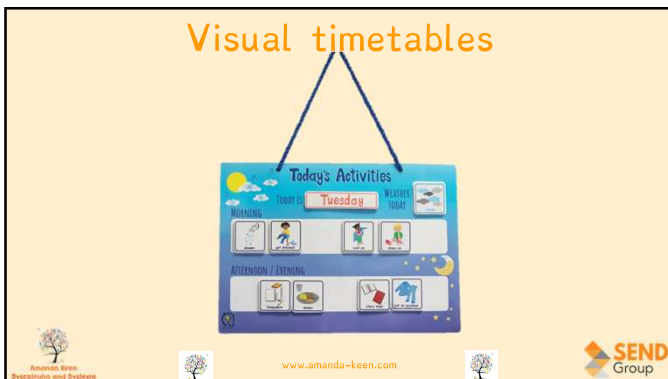
---

---

---

---

---



45

---

---

---

---

---

---

---

---

## Dual coding



When using Widgit, it is important to be concise and consistent.

When using Widgit, it is important to be concise and consistent.



[www.amanda-keen.com](http://www.amanda-keen.com)



46

---

---

---

---

---

---

---

---

## Organisational app



[www.amanda-keen.com](http://www.amanda-keen.com)



47

---

---

---

---

---

---

---

---

## General support at home and in school



[www.amanda-keen.com](http://www.amanda-keen.com)



48

---

---

---

---

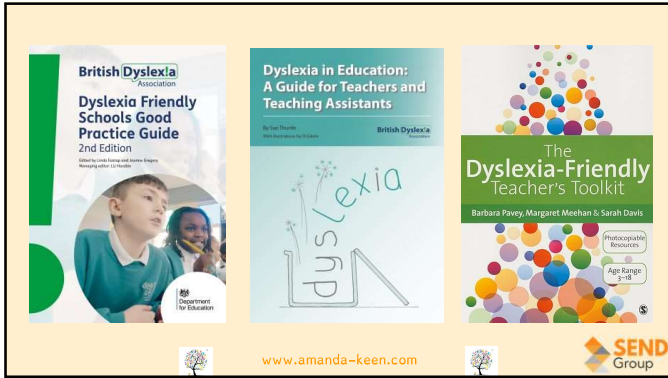
---

---

---

---





49

---

---

---

---

---

---

---

---



50

---

---

---

---

---

---

---

---



51

---

---

---

---

---

---

---

---

# Formal support available





[www.amanda-keen.com](http://www.amanda-keen.com)



52

---

---

---

---

---

---

---


---





Disabled Students' Allowance (DSA) is support to cover the study-related costs you have because of a mental health problem, long-term illness or any other disability.

This can be on its own or in addition to any student finance you get.

The type of support and how much you get depends on your individual needs - not your household income.

You do not need to pay back DSA.





[www.amanda-keen.com](http://www.amanda-keen.com)



53

---

---

---

---

---

---

---

---





Access to Work can help you get or stay in work if you have a physical or mental health condition or disability.

The support you get will depend on your needs. Through Access to Work, you can apply for:

- a grant to help pay for practical support with your work
- support with managing your mental health at work
- money to pay for communication support at job interviews



[www.amanda-keen.com](http://www.amanda-keen.com)



54

---

---

---

---

---

---

---

---

# WORKPLACE NEEDS ASSESSMENT

Workplace Needs Assessments are designed to provide an overview of any challenges employees might face at work, as a result of neurodiversity or disability. We will work closely with each employee to understand the specific barriers being faced in day-to-day work, that have an impact on confidence, wellbeing and productivity. We can then make recommendations for adjustments or support that can help your employee reach their potential. This might be anything from using Assistive Technology to having access to a quiet place to work. We will support you as the employer and your employee to ensure any changes can be made effectively and smoothly.

[www.amanda-keen.com](http://www.amanda-keen.com)

55

---

---

---

---


---




---

---

---

# For more information



[www.amanda-keen.com](http://www.amanda-keen.com)

56

---

---

---

---

---

---

---

---