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Supporting the Professional
Learning of School Leaders
and Teachers

Session 3

Creating an inclusive classroom:
SEN in Computer Science

Curriculum planning





By the end of this session

Participants will be enabled to:

- develop an understanding of Inclusion, SEN and current policy and recognise the broad range of guidelines and resources available
- make the link with Leaving Certificate Computer Science
- bring inclusive teaching practices for CS back to the classroom
- develop a shared understanding of the challenges and possible strategies for a wide range of SEN categories
- engage collaboratively to develop a curriculum plan for the coming weeks/months guided by the LCCS specification



What is inclusion?

Some perspectives...

"Technology should be a vehicle by which students reflect and demonstrate understanding of their intersectional identities."

"Inclusion is creating space for nurturing and caring relationships."

"Different forms of assessment privilege different forms of understanding."

Shuchi Grover

"[Our classrooms contain] ... minoritised learners, rather than minority learners."

Professor Tia Madkins



Inclusion: Warm-up Activity



What does an inclusive classroom look like?

What does inclusion mean to you?



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Current policy





Current Policy

Special Educational Needs are defined as:

"A restriction in the capacity of the person to participate in and benefit from education on account of an enduring physical, sensory, mental health or learning disability, or any other condition which results in a person learning differently from a person without that condition."

The EPSEN Act recognises that special educational needs may arise from four different areas of disability: • physical • sensory • mental health • learning disability.

EPSEN Act, 2004

Current Policy



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“It is the responsibility of the classroom teacher to ensure that each student is taught in a stimulating and supportive classroom environment where all students feel equal and valued.”

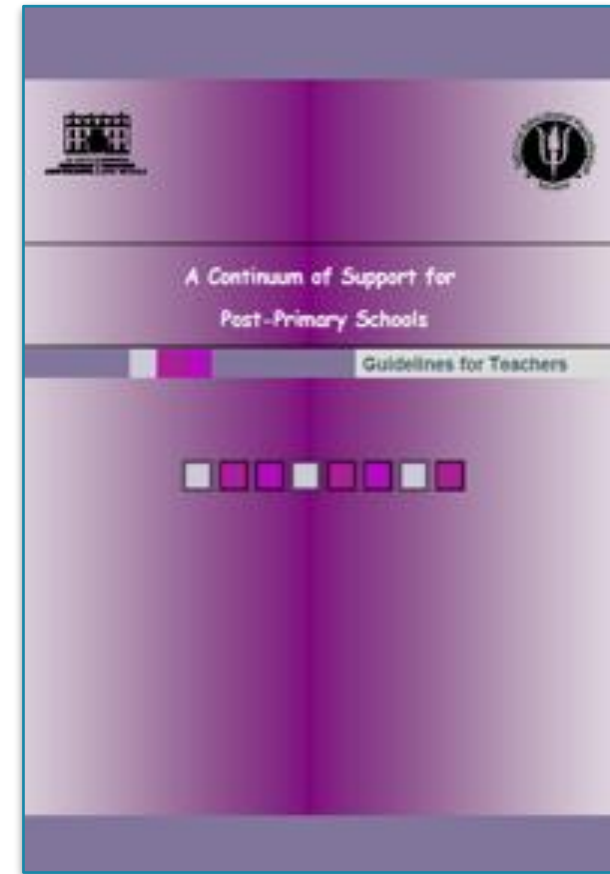
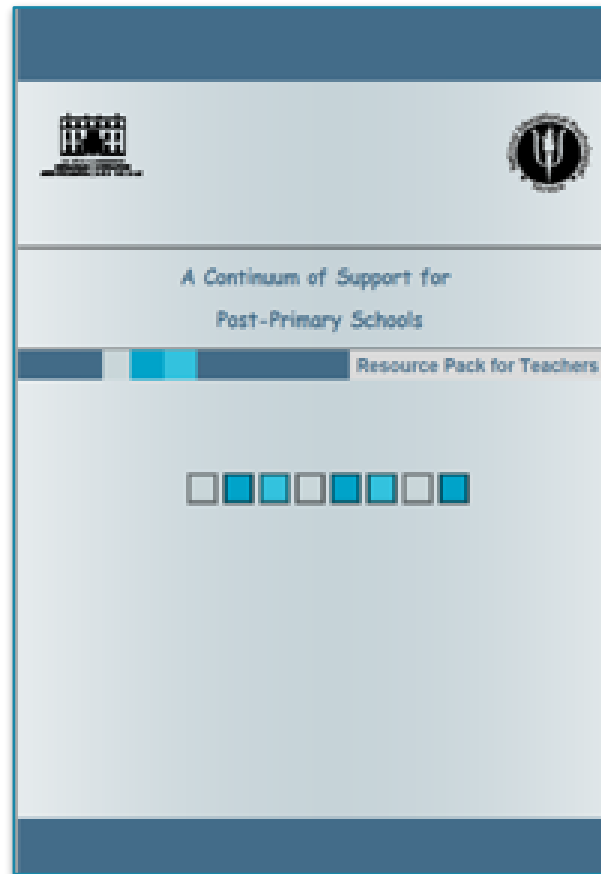
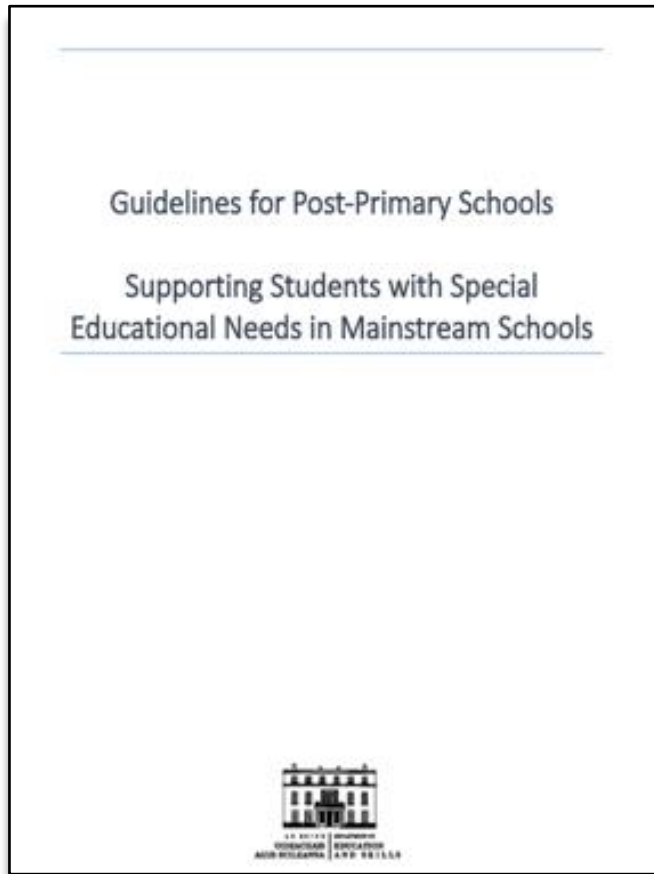
13. The Role of the Classroom Teacher

Circular No 0014/2017

Current Policy



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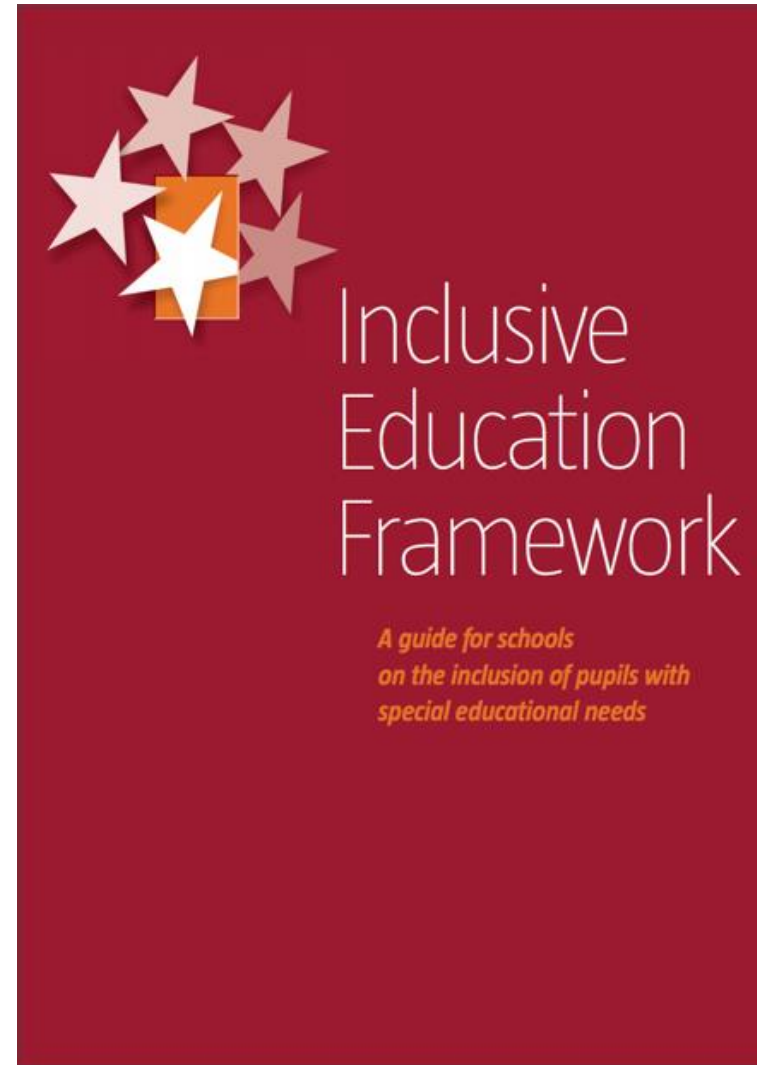
Current Policy



An Chomhairle Náisiúnta um Oideachas Speisialta
National Council for Special Education



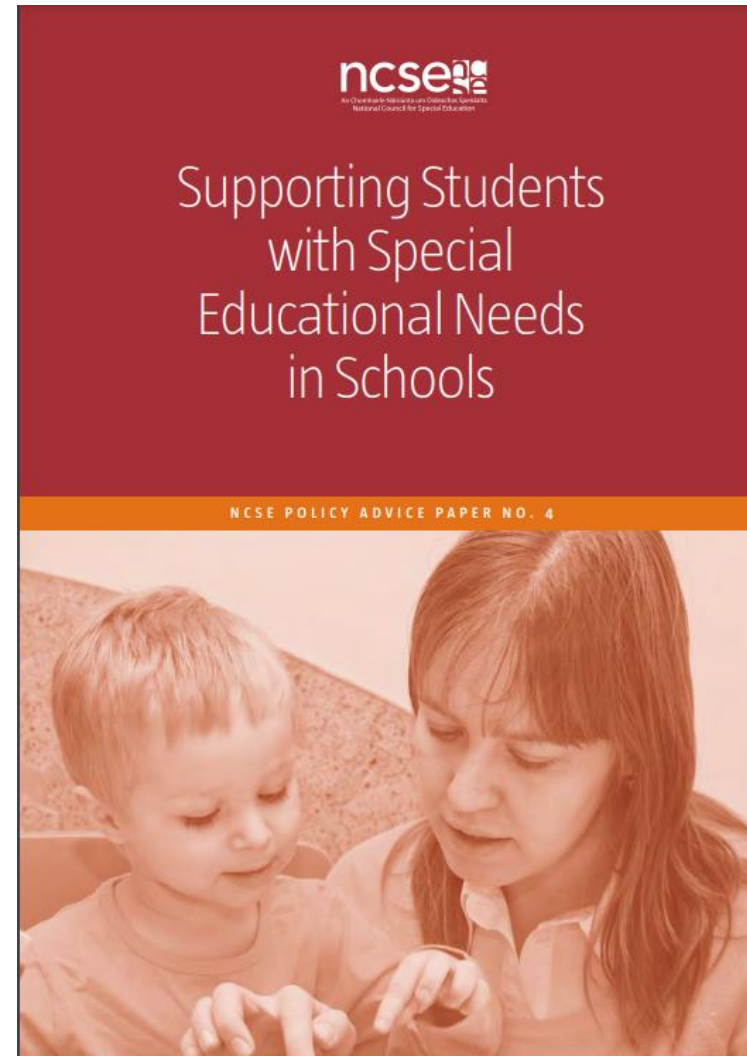
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Current Policy



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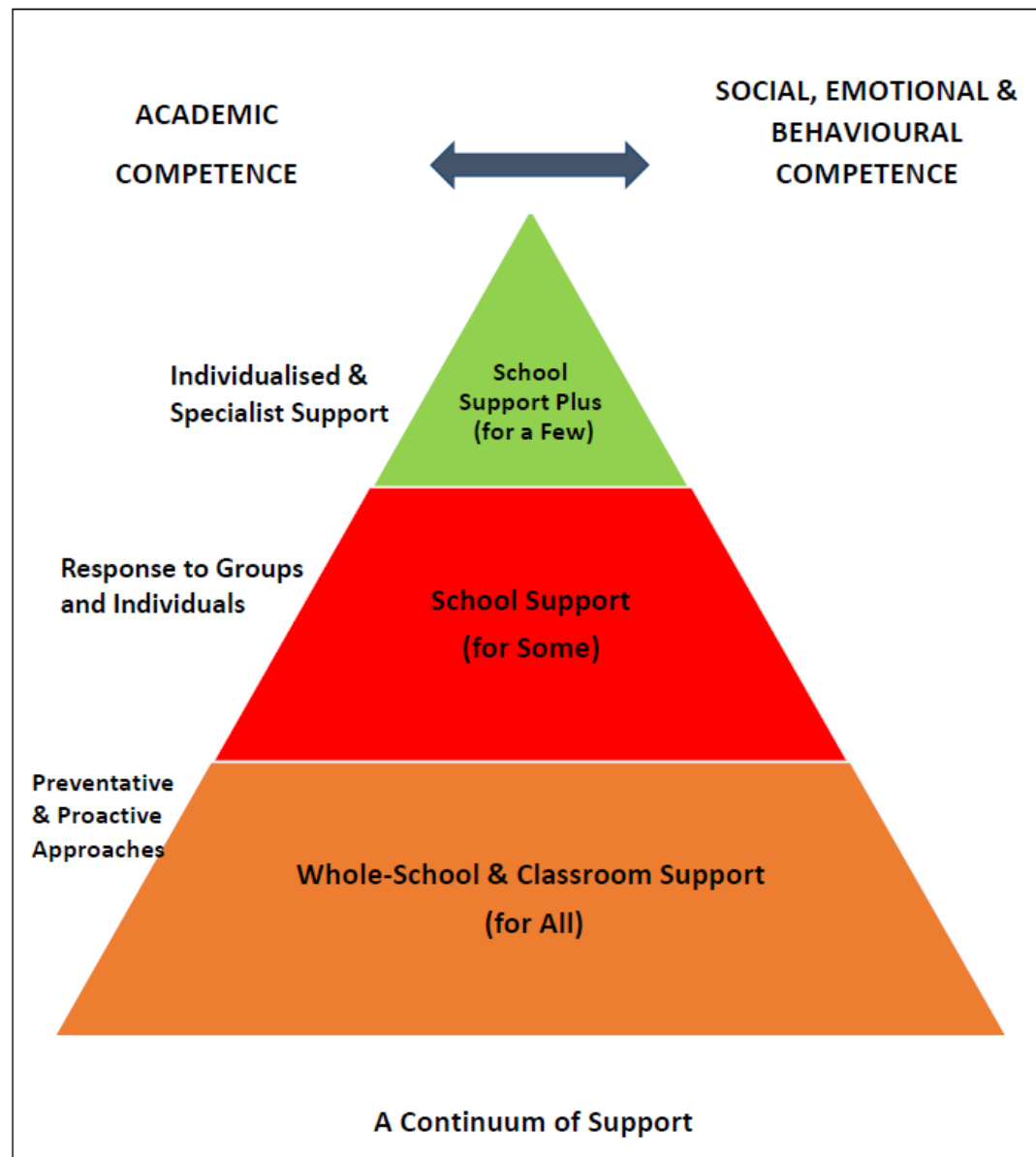
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Continuum of Support



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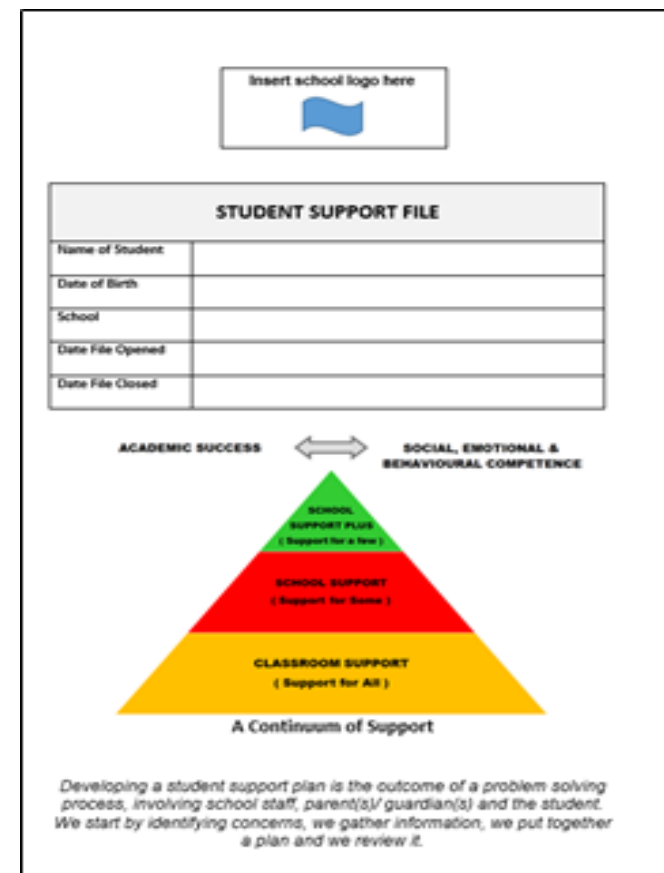
The Student Support File

Highlights a student's particular Strengths and Needs.

Sets a small number of goals and targets for the year/term.

Gives teachers insight into areas of skills/interests for the student.

Allows teachers to create specific supports to help meet students' current needs/targets.





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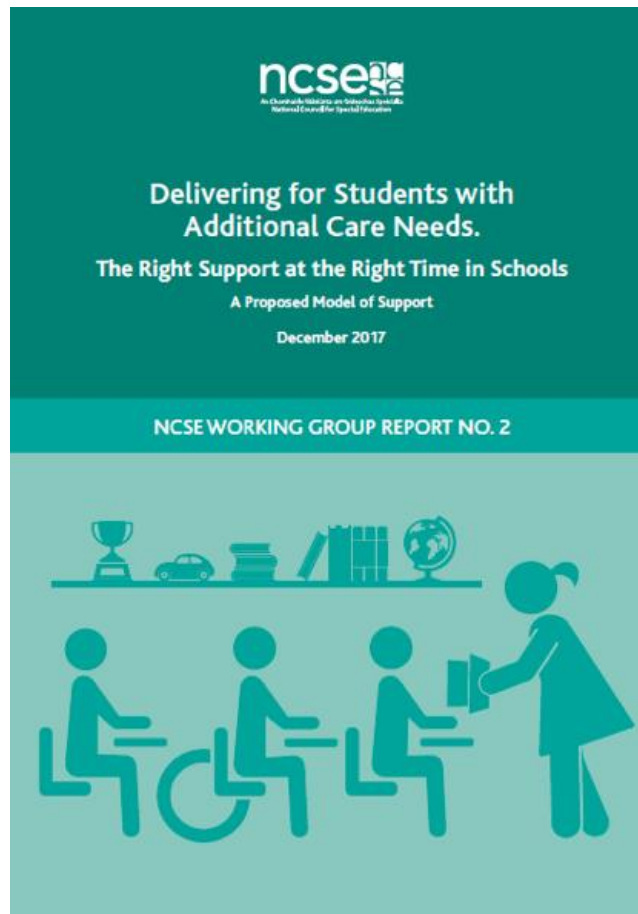
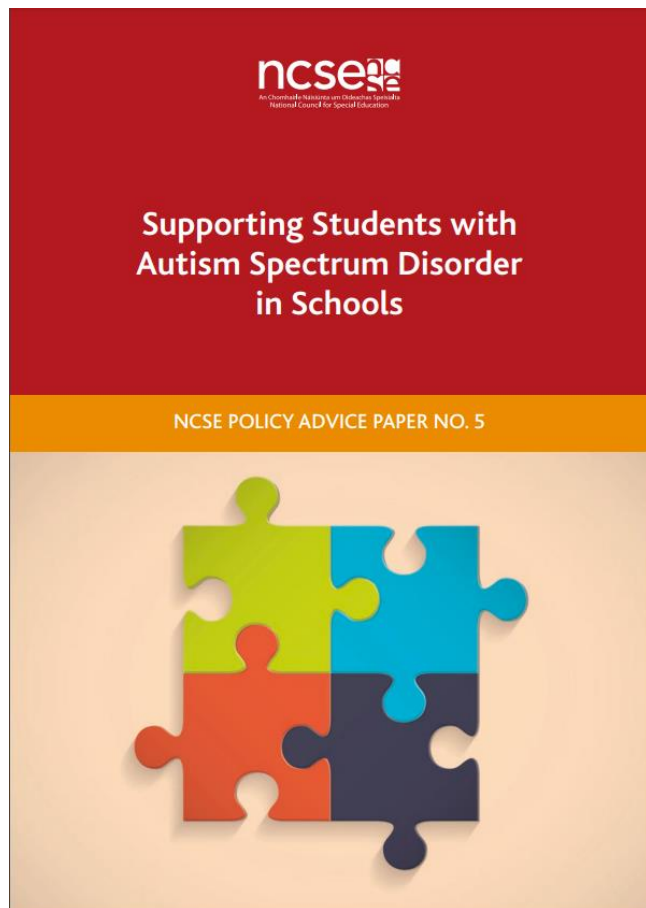
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SEN Guidelines & Resources



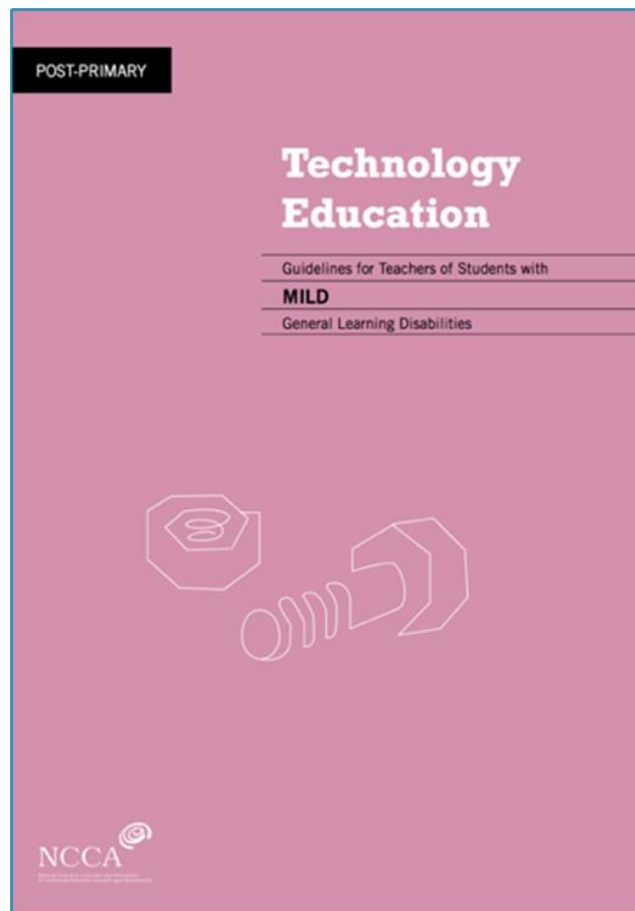
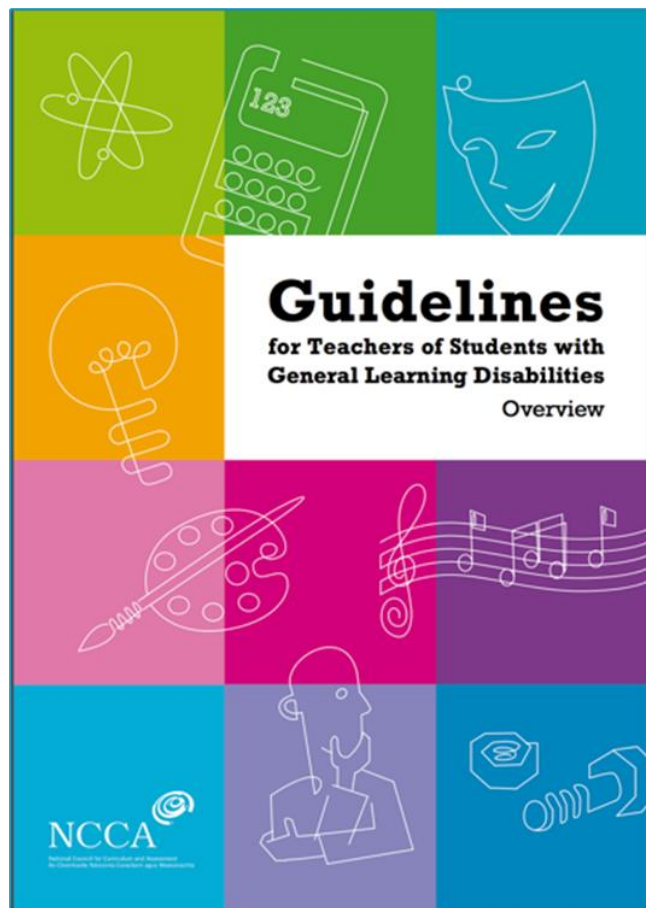


Additional Supports





Additional Supports





Additional Supports





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Inclusive teaching in the LCCS classroom

Inclusive approaches for teaching CS





Leaving Certificate Computer Science



CsforALL

For all students who want to do it!

<https://www.csforall.org/>

LEAVING CERTIFICATE
COMPUTER SCIENCE
is designed to suit **ALL STUDENTS** of **ALL ABILITIES**

- It is structured to enable all students, of all abilities, to embrace the subject and succeed in every aspect of the course.
- Students will learn
 - Computational Thinking
 - Programming Languages
 - Design & Collaboration
 - Computers & Society.
- Students will gain skills that are valuable in any future career.

PDST Professional Development Service for Teachers / An tSeirbhís Ghairmiúil do Ghairníoirí
ncse National Council for Curriculum and Assessment / An tAidmear na hAidmear

COMPUTER SCIENCE IS FOR **EVERYONE**: GIRLS, BOYS, ORDINARY LEVEL, HIGHER LEVEL, SEN.

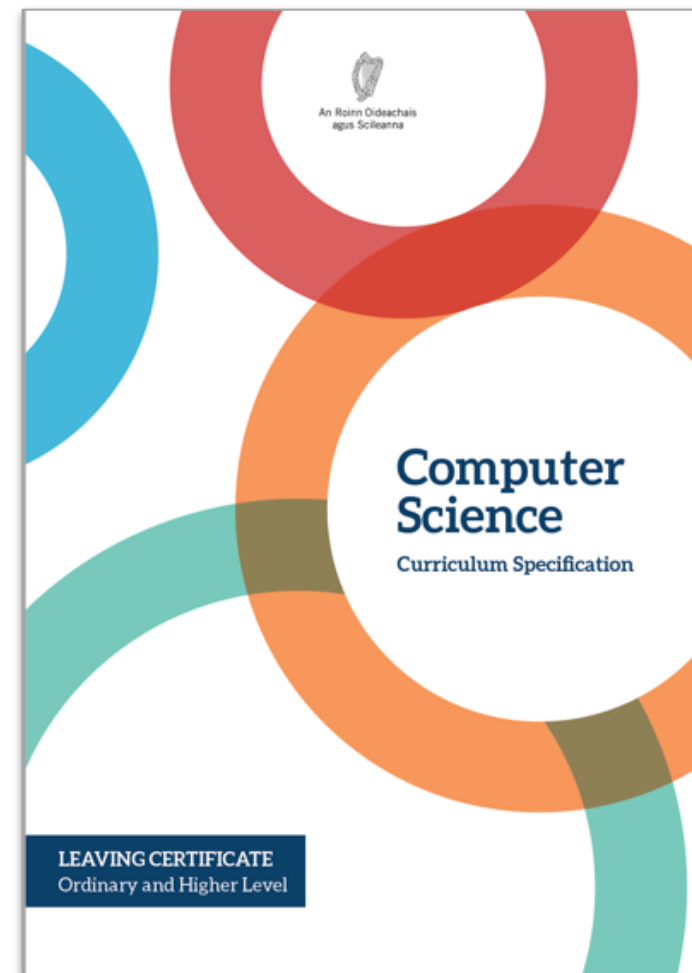


LCCS Specification

“Students will explore the role that adaptive technology can play in the lives of people with special needs and how access to, and engagement with computing and technology is of ever-increasing importance to societies, democracies and human progress.”

1.15 consider the quality of the user experience when interacting with computers and list the principles of universal design, including the role of a user interface and the factors that contribute to its usability.

1.17 describe the role that adaptive technology can play in the lives of people with special needs.





Inclusive Approaches for Teaching CS

Reduce cognitive load

Use unplugged activities

Physical computing

Teach to the emergent skill

Scaffold group work

Use proven pedagogies and methodologies to teach programming



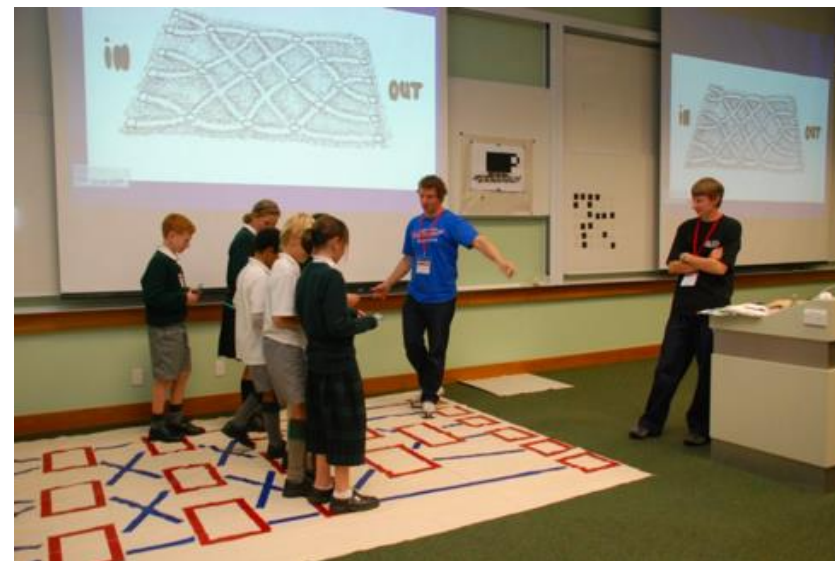


Use unplugged activities

Making the abstract tangible

Harnessing authentic and familiar contexts

Generalising knowledge and making links





Physical computing



Bee bot



Dash and dot



Sphero



Botley the coding robot



Code-a-Pillar



Lego Mindstorms



Physical computing



Arduino



Codebug



Circuit Playground



Crumble





Physical computing





Use proven pedagogies and methodologies to teach programming

PRIMM

**Use-
Modify-
Create**

**Parson's
Problems**

**Collaborative
programming
approaches –
Pair & Peer**

Scaffolding

**Block-based
languages**

**Sensory
outputs for
screen-based
programming**

**Thonny/
IDLE**



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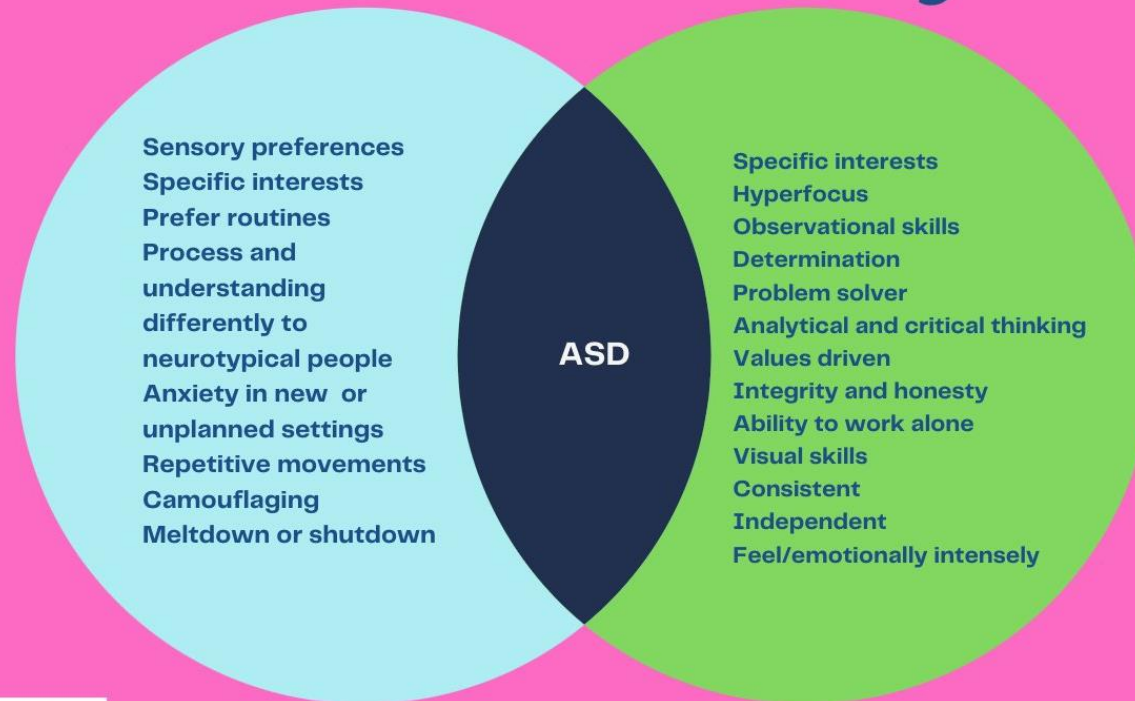
Inclusive teaching in the LCCS classroom

Reframing your neurodiverse classroom





Two sides to every coin



Do-IT>



Image: Amanda Kirby, twitter.com/profAmandaKirby

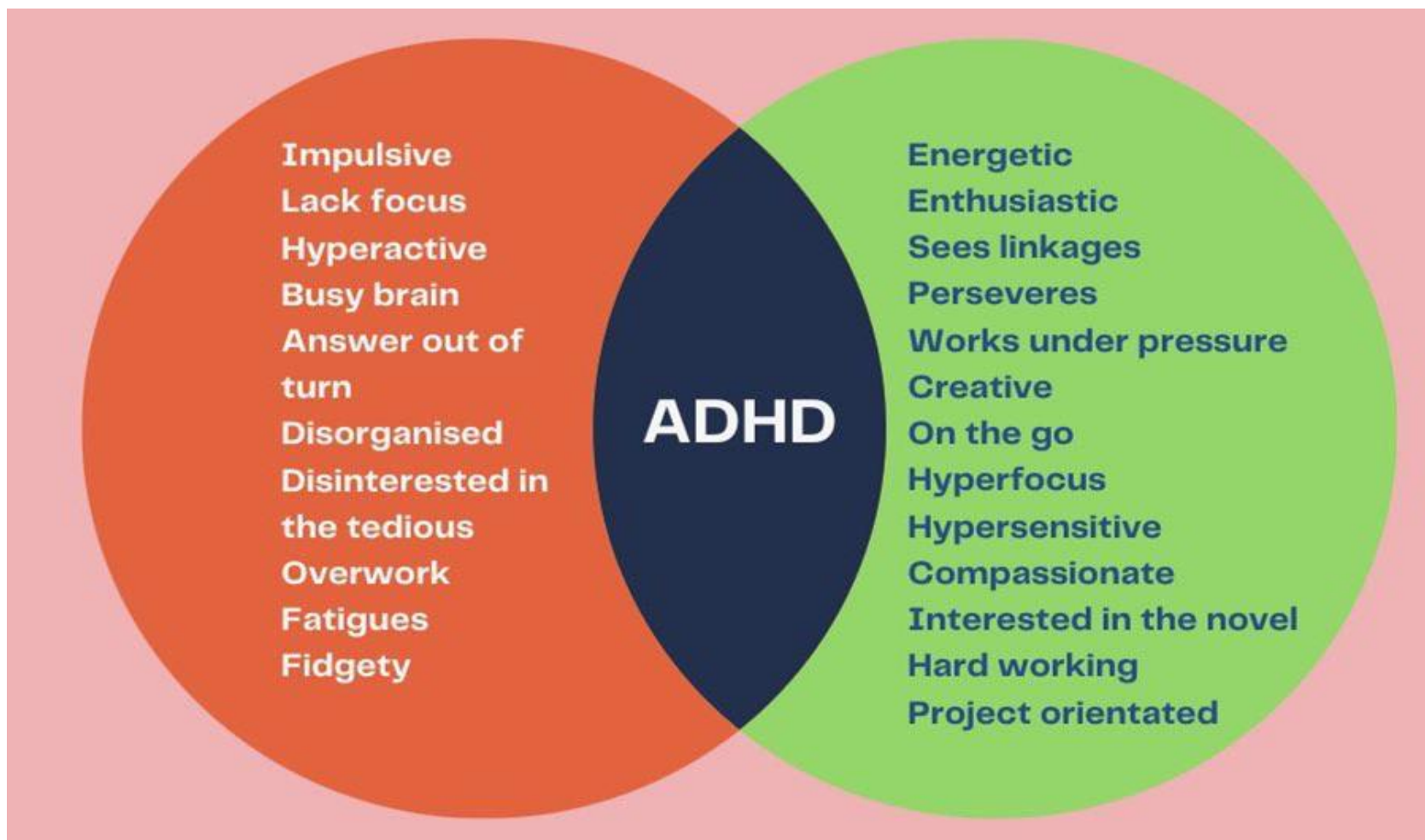


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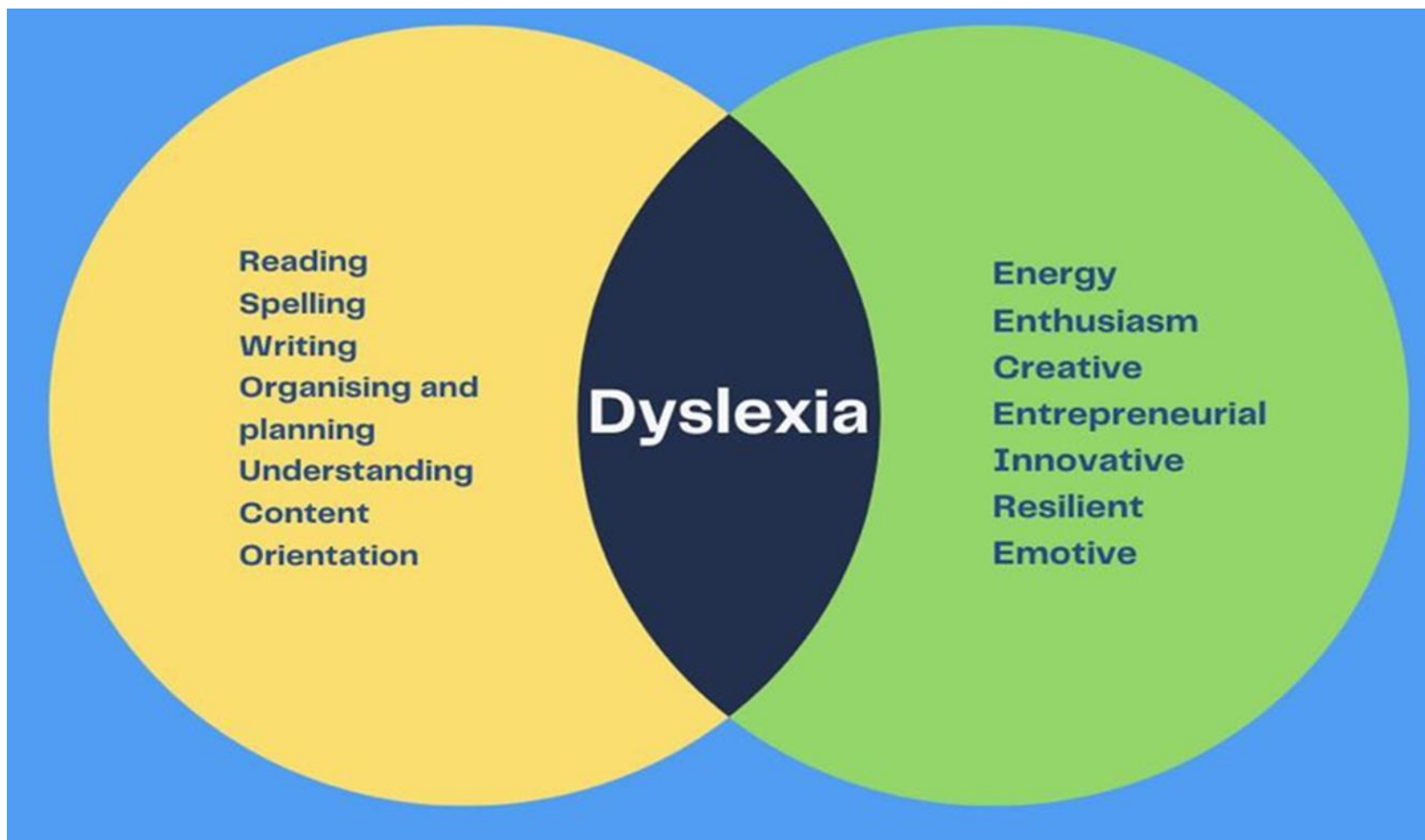


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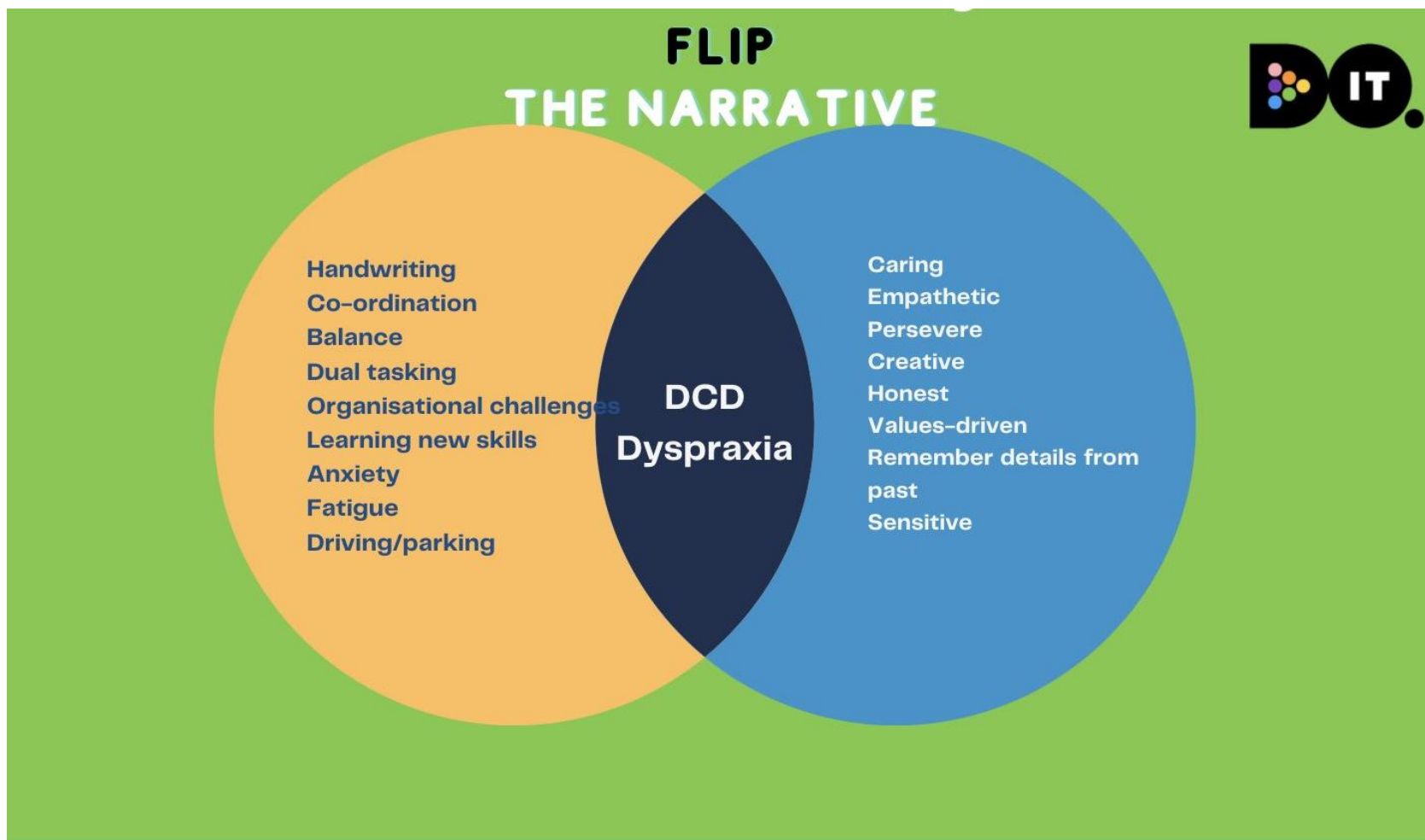


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Group activity

Creating an inclusive classroom





Creating an Inclusive Classroom: Group Task

Your LCCS classes each have a wide variety of students and most likely several students presenting with a wide variety of special educational needs. What supports might you need to put in place to create a classroom that includes these learners?

What are the **challenges** this student might face in engaging with the learning in your classroom?

What **supports** can you put in place to mitigate these challenges?

Consider also the **strengths** these students bring to the classroom - how might you use these to their (and your) advantage?





Creating an Inclusive Classroom: Group Task

Group 1:

Autism Spectrum Disorder (ASD)

Group 2:

Emotional/
Behavioural Disorder

Group 3:

Physical Disability

Group 4:

Dyslexia

Group 5:

Attention Deficit/Hyperactivity Disorder (ADHD)

Group 6:

Dyspraxia (DCD)

Group 7:

Profound sight loss

Group 8:

Hearing impairment



Creating an Inclusive Classroom: Feedback

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General tips

Differentiate the learning experiences

Encourage support for the student from classmates

Consider physical access issues such as ramps, toilets, lifts and classroom layout

Incorporate advice from the SEN coordinator in the school

Use computers and audio-visual aids in the student's learning and teaching programme

Specialised equipment may also be necessary such as adapted keyboards, page turners, word boards or special desks.



General tips

Encourage communication to prevent isolation

Allow students extra time to complete tasks

Students may have a low self-image; therefore, it is important to ensure that the student feels included and is encouraged and praised

As students tend to become distracted quite easily, minimise distractions in the classroom environment

Read each students' Student Support File and think about where LCCS fits into helping these students achieve the goals therein



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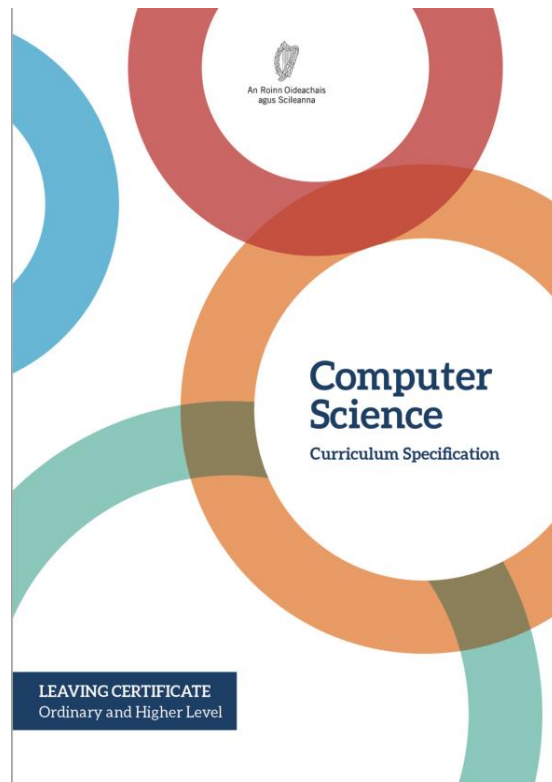
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Curriculum planning





LCCS Specification & Learning Outcomes

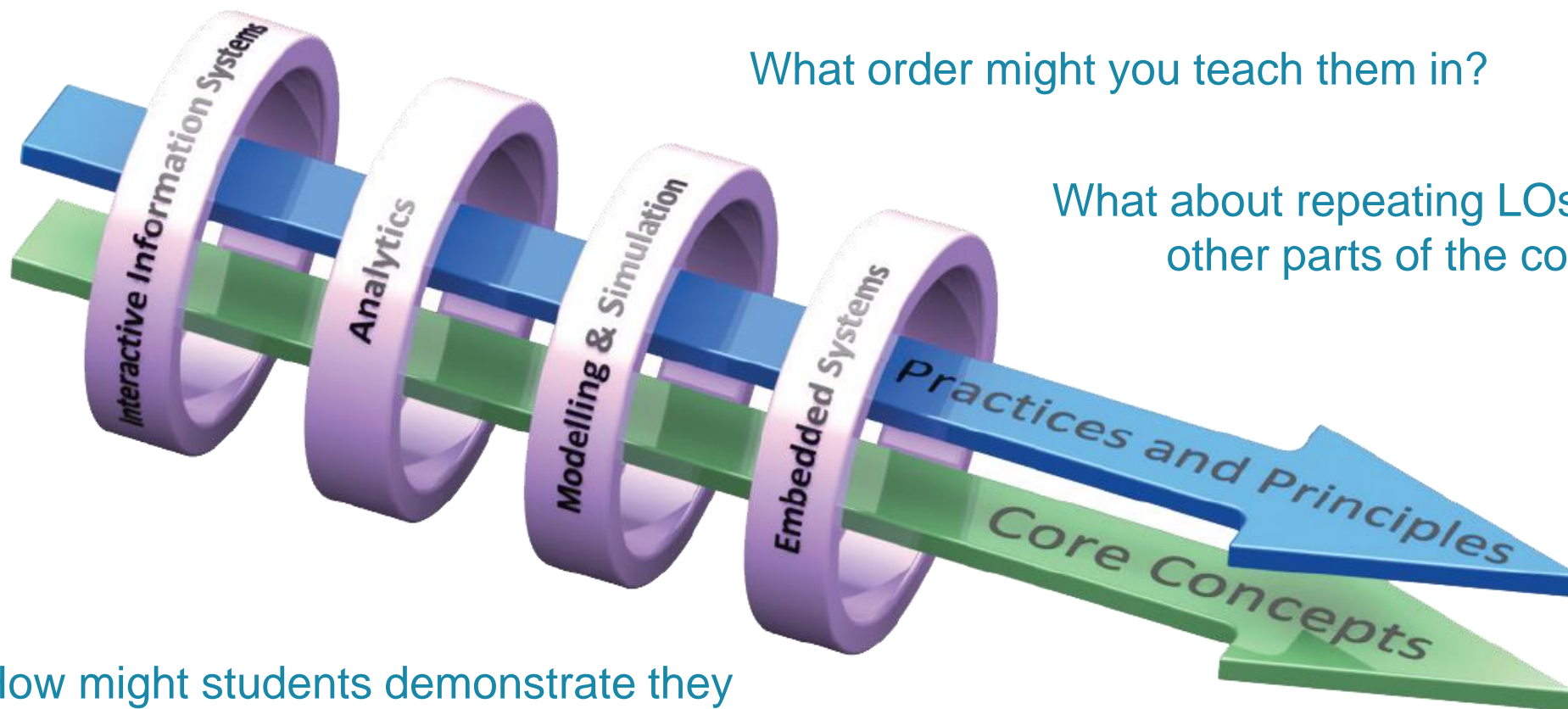


“Learning outcomes can best be defined as statements of what a learner knows, understands and is able to do after completion of learning.”

CEDEFOP (2009)



How might you work with the learning outcomes?



What order might you teach them in?

What about repeating LOs / linking to other parts of the course?

How might students demonstrate they have achieved the learning outcomes?

What content or resources might you need?



Curriculum Planning: Group Task

How do you intend to approach LCCS in your classroom (next 4 weeks/until mid-term/Christmas)?

Work in your group and consider – Timeframe, Topics / LOs / Resources / Assessment / Build up to ALTs / ALTs / Equipment etc.

Nominate:

1. a notetaker to summarise your group's work
2. a spokesperson to provide feedback



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Curriculum Planning: Group Task

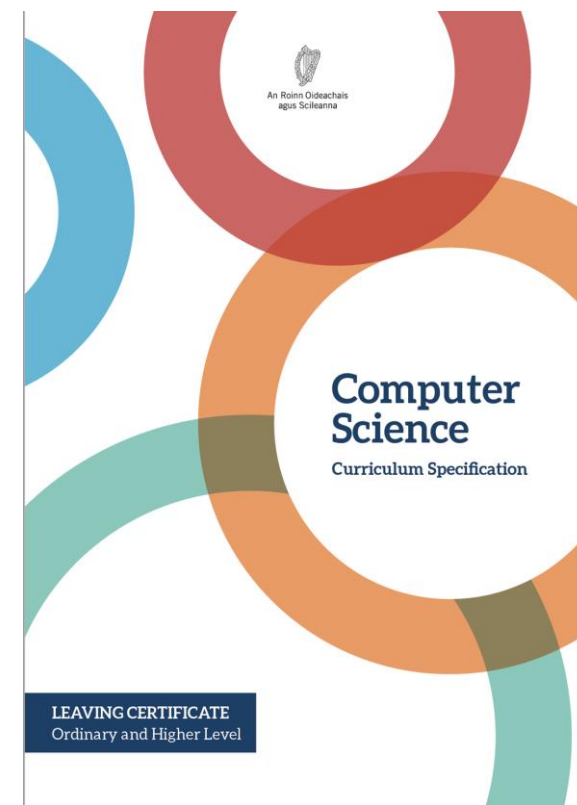
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Key message: Explore and teach the learning outcomes through the lens of ALTs. There are several ways to achieve this.



Use the LCCS specification for this activity



Group Activity





Curriculum Planning: Feedback

How do you intend to approach LCCS in your classroom (next 4 weeks/until mid-term/Christmas)?

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An Roinn Oideachais
Department of Education

