Change Your Perspective: It´s Just Dyscalculia
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Dyscalculia

WP2: Dyscalculia Curriculum and Course Material

Panevėžio „Žemynos“ progimnazija

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Module 3: Teaching methods and techniques on the education of students with different learning levels

Panevėžio „Žemynos“ progimnazija

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1. Introduction of the Module
2. Content of the Module
3. Link to additional text
4. Link to additional videos
5. Quiz
6. Resources

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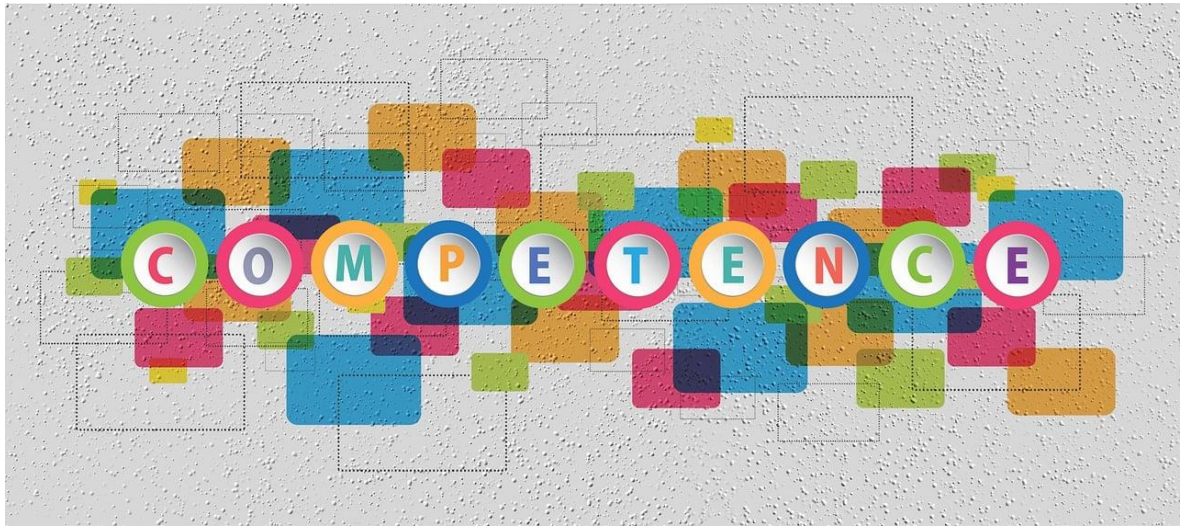
Module 3: Teaching methods and techniques on the education of students with different learning levels
1. Introduction of the Module

"Module 3: E-learning" is about activities which could be useful to teach dyscalculic students. There will be an overview of teaching and professional skills needed and how to educate dyscalculic students. Methodological competences are presented in order to use different approaches and practices, activity examples, teaching methods and techniques for the education of students with different learning levels. Finally, the outline of how educators can develop their capacity in the long term will be given in Module 3.



https://pixabay.com/images/search/competence/

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Special education teachers require skills to :

- fulfil a range of duties specific to working in this field;
- develop teaching plans for a variety of students with unique requirements;
- change the school curriculum to reflect the requirements of individual students;
- educate other teachers and parents on education techniques outside their lessons.

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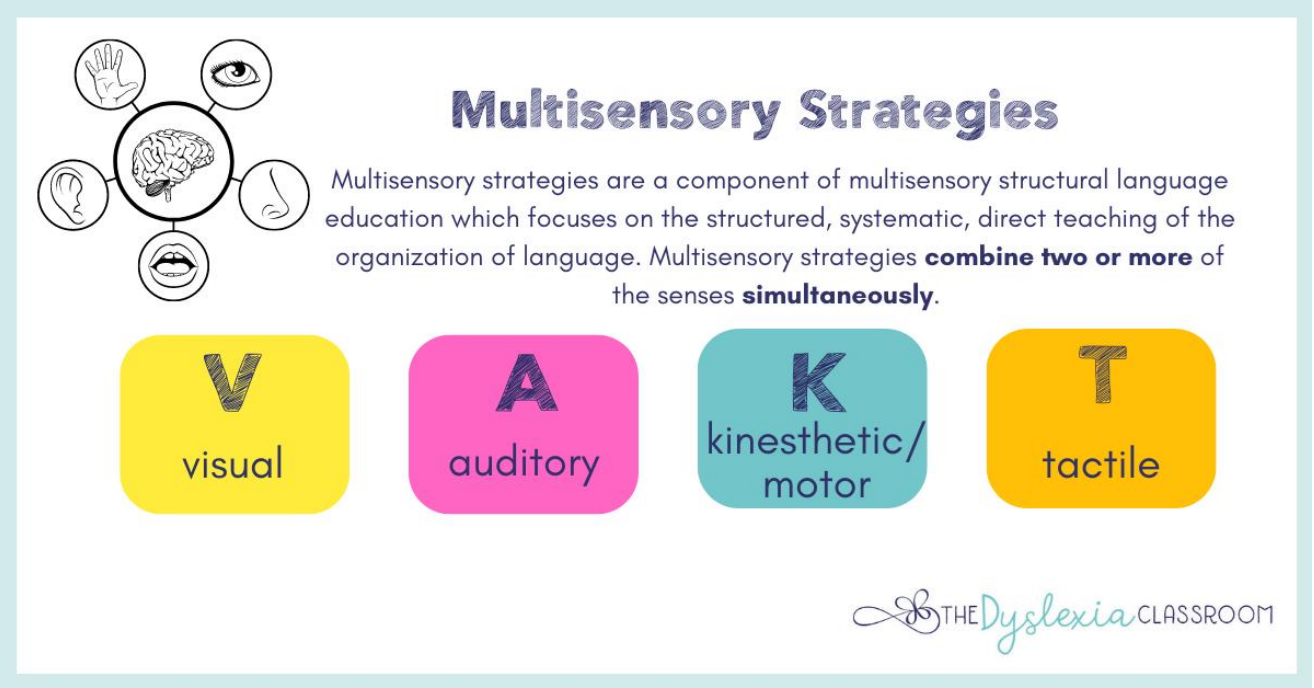
Teachers, who work with dyscalculic students, should use multi-sensory teaching techniques, which can be highly effective, because they involve using multiple senses (sight, hearing, touch, and movement) to help students learn and remember information.



https://www.thedyslexiaclassroom.com/blog/multi-sensory-instruction-moving-beyond-the-sand-tray

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To help children with dyscalculia in **terms of information processing or information processing speed** in understanding a new skill quickly, teachers need to always give enough time or 'wait time'. It will help children with dyscalculia to process information effectively, especially a newly learned mathematical concept .

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Students with dyscalculia often have trouble **remembering basic facts**. So, **mathematical operating procedures, drill techniques** are effective to help retain information in understanding in their long-term memory.

https://pixabay.com/photos/search/remember%20information/

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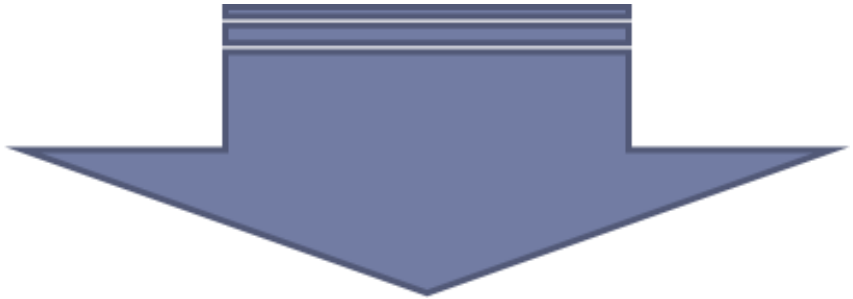
One of the main **problem** areas for children with dyscalculia is the recognition of numbers, mathematical signs or number symbols. The **strength** of children with dyscalculia is excellent visual thinking.



Art therapy is one of the best ways to solve the main problem of children with dyscalculia!

Creative methods should be used in teaching and learning process.

Such as using:

- fingers or other means of calculation;

- natural materials: sandpaper or other textured paper;

- diagrams, draw mathematical concepts or tasks;

- colored pencils to separate tasks;

- rhythm and music, poems and stories to teach math concepts.

https://pixabay.com/photos/search/

Make the figures from plasticine

http://kristianaweebly.weebly.com/uploads/1/8/5/2/18524958/sup_mokiniu_matematikos_mokymo_ypatumai.pdf

Draw pictures that resemble numbers.

http://kristianaweebly.weebly.com/uploads/1/8/5/2/18524958/sup_mokiniu_matematikos_mokymo_ypatumai.pdf

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Paint numbers that resemble people in different mood.

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Find numbers from 0 to 10

http://kristianaweebly.weebly.com/uploads/1/8/5/2/18524958/sup_mokiniu_matematikos_mokymo_ypatumai.pdf

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Games for learning mathematics

An example of a mathematical fairy tale

In a large garden, under an old apple tree stump, lived strange colorful gnomes. There weren't many of them just eight. They all wore green hats and only a couple of dwarves had red shoes. The rest wore blue slippers with silver balls on the tip of the spike. There were three of them bearded and completely bald, and the rest wore ten strange braids on their little heads. They were all very fond of cherries, but they grew at the edge of the garden. They had to get up early, because until reached the edge of the garden, it took three hours, and you had to run 90 meters to reach the cherry tree. When they returned, they had breakfast and went to sleep a two hours , in the afternoon they loved to play dominoes. After finishing all the games, they went to take a nap at exactly 2 p.m. and got up at 2 a. m hours of rest. When they got up, they engaged in various activities: some rode a beetle, some climbed apple trees peak, some tidied up, some put the scattered clumps into neat baskets under five. In the evening, around 5 p.m., when everyone was already hungry, they gathered and baked pancakes from pollen and dew drops with lots of honey from bees. All of them were wrapped in burdock leaves, two for each dwarf. The gnomes day ended exactly at 8:00 p.m., when they fell asleep sweetly in yellow beds under an old apple tree stump

Possible questions:
How many dwarves didn't have red shoes? (6) How many dwarves wore blue slippers with silver balls on the tip? (6) How many dwarves wore strange coats? (5) How many braids were braided in total? (50) How many meters did the dwarves cover in an hour running to the cherry tree? (30 meters) When did the dwarves have breakfast? (12 o'clock) How many blocks will the gnomes need in total if they put six spiders five by one? (30) How many total pancakes do the dwarves need to make for dinner? (16) How long is a dwarf day? (14 hours)

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In the middle of our garden, you can find a lot of berries. The cherry is hanging there beautifully. Isn't it a number..

It is round, soft and tied up with a string. It flies to the sky when you carry it. Isn't it a number..

When it is dark and it is scary to live without light. Turn on the lamp.

It looks like .....

Hey, prickly hedgehog,You are carrying a beautiful apple. After taking it off, take a look. An apple looks like ....

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The numbers written in the columns were hidden in the number maze. When you find them, colour them. Numbers are hidden in different directions: ⇆⇉⇈⇊↖↘↗↙

15321 19240 10951 90847

82347 92228 97432 71254

79001 53231 98421 44629

28421 45318 53281 18780

74091 11520 25231 28609

98091 51870 93917 14794

12259 14401 96541 21714

1	5	3	2	1	7	4	3	2	8
0	9	1	9	4	4	1	1	2	1
0	1	0	1	5	8	7	2	1	3
9	4	7	8	6	0	2	9	5	5
7	1	9	3	9	9	2	6	4	4
2	3	4	7	9	1	0	9	5	1
8	5	1	5	8	8	9	6	3	1
4	1	2	7	4	2	1	2	8	5
2	2	8	3	2	3	3	1	4	2
1	0	4	4	1	5	1	8	7	0

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The sum of the remaining numbers is 8

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3. Activities helping to overcome dyscalculia

The mouse could not count,
The mouse needed a machine!
Such as to take away
Such as to add
Such that count
He could for a mouse!
And the mouse got a machine -
But it's just a waste of time...
The mouse no longer knows
Where to put an inaccurate machine:
2 + 13 = 33
343 + 21 = 355
67 – 42 = 43
1862 – 461 = 1221

2350 + 2100 = 3550
6723 – 5101 = 1712
I can calm the mouse down
Because nothing terrible happened,
Because you need to have patience,
Just look at the task again:
The two numbers change there.
two numbers
Let's see - Two numbers!

http://kristianaweebly.weebly.com/uploads/1/8/5/2/18524958/sup_mokiniu_matematikos_mokymo_ypatumai.pdf

Answer: 2 + 31 = 33; 334 + 21 = 355 ;67 – 24 = 43; 1862 – 641 = 1221 ; 2350 + 1200 = 3550 ; 6723 – 5011 = 1712

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“The Dyscalculia Assessment– A practical guide for teachers"

Authors: Jane Emerson and Patricia Babtie

Published in: Bloomsbury

Year: 2013

Link:
https://books.google.lt/books?hl=lt&lr=&id=ww2aBQAAQBAJ&oi=fnd&pg=PP1&dq=methods+teaching+dyscalculia&ots=JYz9zhzLBY&sig=FiRZB6bsid00XuZce0oo4CxA7WE&redir_esc=y#v=onepage&q=methods%20teaching%20dyscalculia&f=false

„Dyslexia, Dyscalculia and Mathematics– A practical guide“

Authors: Anne Henderson

Published: London

Year: 2012

Link:
https://books.google.lt/books?hl=lt&lr=&id=ggGxLtYQhfYC&oi=fnd&pg=PP2&dq=children+with+dyscalculia+teaching+programme&ots=wi0PbBtX4L&sig=qm80vy5kpDWnbho309__Z3vsMks&redir_esc=y#v=onepage&q=children%20with%20dyscalculia%20teaching%20programme&f=false

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Module 3: E-learning
5. Link to additional videos

Link Video English: “Dyscalculia Teaching Strategies: What is Dyscalculia?”

https://www.youtube.com/watch?v=etOT1uFcKTY

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6. Quiz

Students with dyscalculia often have trouble:

- remembering basic facts
- remembering most important facts
- no difficulties in remembering
- Remembering their names

One of the main problem areas for children with dyscalculia is the recognition of :

- numbers
- mathematical signs
- number symbols
- numbers, mathematical signs or number symbols

One of the best ways to solve the main problem of children with dyscalculia:

- art therapy
- water therapy
- no therapy
- Lessons

To help children with dyscalculia in terms of information processing or information processing speed in understanding a new skill quickly teachers:

- should always give enough time or 'wait time‘
- should give extra homework
- Shoud not pay attention to student

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Dyscalculia: What We Must Know about Students'Learning Disability in Mathematics? Universal Journal of Educational Research

8(12B): 8214-8222, 2020 http://www.hrpub.org DOI: 10.13189/ujer.2020.082625

https://dsf.net.au/learning-difficulties/dyscalculia/supporting-people-with-dyscalculia

https://teachercertification.com/dyscalculia-teaching-strategies/

https://www.brainbalancecenters.com/blog/strategies-for-managing-dyscalculia

https://www.tts-group.co.uk/blog/2017/07/09/practical-strategies-help-children-dyscalculia.html?gad_source=1&gclid=CjwKCAiA6KWvBhAREiwAFPZM7lX4ecdALxpunBUEcUSIDw3G1nwiT8C-IizEQ5TyJJyaLmyU0_RTMBoCbdkQAvD_BwE&gclsrc=aw.ds

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