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DEVELOPMENT OF DIGITAL COMPETENCE IN PRESCHOOL EDUCATION

PROFESSIONAL DEVELOPMENT COURSE SYLLABUS

DEVELOPED BY

the DigiChild team

Intellectual Output 2 repost
Professional development course for in-service kindergarten teachers "Development of Digital Competence in Preschool Education"

In the partnership, we designed a professional development course for in-service kindergarten teachers "Development of Digital Competences in Pre-School Education". This course (1 ECTS) was launched at 4 partner universities (one course in every partner university).

Qualitative indicators: the course was piloted in every partner organization, shortcomings improved. The course was added to the list of professional development courses for in-service teachers offered by the partner university (a new course available).

Quantitative indicator:

101 local in-service teachers finished the course in every partner university. The participants received certificates of completion from partner universities.

12 in-service international kindergarten teachers also followed this programme modified for international use.

The cooperation between the universities and kindergartens of 4 countries led to the development of an innovative professional development course for in-service preschool teachers tha. It is an intensive course and the teachers "jumped in at the deep end" that allowed rapidly immersing into the practical outputs.

The partners collaborated to design a comprehensive course to share with the in-service teachers the project results, materials, methods, and didactics that can be used in the kindergartens with minimum adaptation. This decreased the stress that the preschool teachers experience and ensured the rapid spread and adaptation of the innovative intellectual output.

In-service course development strategy:

1) based on the shared know-how from the LTT1-LTT4, survey, and BA courss, the partners cooperated to find the most appropriate ways to empower the preschool teachers to use digital technologies and robotics more surely. The syllabus and materials were developed in January 2022- August 2022.

2) the courses were offered to in-service teachers in October 2022-January 2023.

3) the course was developed by university partners with a strong support from the kindergarten partners. The course was mostly piloted on the kindergarten premises which have a rich variety of educational technologies and robots.

4) The course development was led by the Heidelberg University of Education (Germany).

COURSE SYLLABUS

Title	**Development of Digital Competence in Preschool Education**
Course type	**Professional development course for in-service kindergarten teachers**
Developers	Prof. Dr. Jeanette Roos (Heidelberg University of Education) Dr. Stephen Frank (Heidelberg University of Education) Prof. Sonja Rutar (University of Primorska) Prof. Silva Bratoz (University of Primorska) Prof. Indra Odina (University of Latvia) MA Lehte Tuuling (University of Tartu) MA Ene Nool (Rakvere Rohuaia KIndergarten) MA Margit Pelli (Rakvere Rohuaia KIndergarten) MA Alenka Rust (Koper Kindergarten) MA Daina Kaina (Creakids Kindergarten)
Target group	Pedagogical staff from kindergartens/early age educational establishments with children aged 0-7 years
Course tested	101 participants Estonia (24 participants), Latvia (30 participants), Slovenia (27 participants), Germany (20 participants) 12 international participants from Latvia, Lithuania, Slovenia, Ukraine, Austria.
Prior knowledge	No previous knowledge
Setting	In-service training (online depending on the situation) at the University of Education HD / University of Latvia / University of Tartu / University of Primorska Working on three transfer tasks, partly in cooperation with team members of the own institution, approx. 20-25 participants from kindergartens Period: October 2022 to January 2023 (depending on the partner's activities)
Structure (1 ECTS = 30h)	Module 1-2: 1-2 attendance days 4-8 hours (at least 8h of F2F studies) (effectively 10 FB hrs. | modules 1/2 of which 1 hr. breaks) Module 3a-3b: 1-2 attendance days of 4-8hours each (at least 8h of F2F studies) (effectively 8 FB hours | modules 3a/b, of which 1 hour breaks)
Learning objectives	• Training of educational professionals to strengthen children's digital competence • Enhancing competence in the field of education with/through digital technologies
Course content | Date Transfer Task Assessment	**Module 1 | Introduction and first steps: 22.10.2022, 9 a.m. - 3 p.m.** Reflection and development of one's own digital pedagogical attitude: • Assessment of own digital competence and use • Digital lifeworld - what are (digital) technologies? • Educational mandate of kindergartens • Digital technologies in kindergartens (professionals/children inventory) • Studies on the use and attitude of professionals • Legal foundations **Module 2 | Children and digital technologies: 19.11.2022, 9 a.m. - 3 p.m.** Expansion of knowledge about the use, appropriation and effects of digital tools with children aged 0-7 years:

Transfer task parental work Educational offer with digital media	• Children's digital lifeworld (studies on digital availability/use) • Basics of developmental psychology • Risks and concerns • Cooperation with parents **Module 3 | Practical Application** To organise educational activities in which children become active producer and can practice and expand their media skills in a creative and playful way: **Module 3a | Digital Practices I:** Integrating (digital) technologies into educational programmes in kindergartens • Enrichment of everyday pedagogical life with digital technologies Overview: Scenarios, devices and technologies • Creating opportunities to talk about and play with technologies **Module 3b | Digital Practices II:** • Robots, stop-motion, radio play • Sharing and talking about media • Processing media experiences
Participation/Certificate	Certificates per module for presentation at the workplace and certificate of completion for participation in all modules for further career path.
Evaluation	Short survey at the beginning and end of the training (level of knowledge/sustainability of the learning experience)

Several programmes of the Course

based on Country's Needs and Level of Digitalization

Professional Development Course "Development of Digital Competence in Preschool Education": Prospective Programme 1	
Day 1: 8h of studies	
8.30-9.00	Welcome coffee, registration
9.00-9.15	Welcome Words Introduction of the seminar aims and learning outcomes
9.15-9.45	Aims and learning outcomes
9.50-11.00	Workshop 1 "Digital Competence in Teacher's Daily Work": Part 1
11.00-11.15	Break
11.15-12.45	Workshop 2 "Digital Competence in Teacher's Daily Work": Part 2
12.45-14.00	Lunch
14.00-15.15	Workshop 3 "Teacher's Digital Hygiene"
15.15-15.30	Coffee break
15.30-16.45	Workshop 4 "Teacher's Digital Wellbeing"
16.45-17.00	Reflection session

Day 2: 8h of studies	
8.30-9.00	Welcome coffee, registration
9.00-10.30	Workshop 5 “Screen-Free Programming and Screen-Based Coding with Children 4-7: When, Where, How to Start”
10.30-10.45	Break
10.45-12.15	Workshop 6 “Child's Digital Competence and its Support”
12.15-13.30	Lunch
13.30-15.00	Workshop 7 “Application of Digital Educational Technologies in Kindergarten”
15.00-15.15	Coffee-break
15.15-16.45	Workshop 8 “Child’s Digital Hygiene and Wellbeing”
16.45-17.00	Reflection session and feedback

Professional Development Course “Development of Digital Competence in Preschool Education”: Prospective Programme 2	
Day 1: 4h of studies	
12.30-13.00	Welcome coffee, registration
13.00-13.15	Welcome Words
13.15-13.45	Introduction of the course aims and learning outcomes, independent assignments
13.45-15.00	Workshop 1 1. Digital competence. Digital Competence Framework (DigComp).
15.00-15.15	Break
15.15-16.45	Workshop 2 Information and data literacy. Communication and cooperation. Digital content creation. Safety. Problem solving.
16.45-17.00	Reflection on the day
Day 2: 4h of studies	
12.30-13.00	Welcome coffee, registration
13.00-13.30	Welcome Words Introduction of the kindergarten digital strategy
13.30-15.00	Workshop 3 Planning and implementation of digital competence development. Analysis of children's digital competence development, discussions, search for solutions.
15.00-15.30	Lunch break
15.30-16.45	Workshop 4 Analysis of good practice examples. Analysis, compilation and creation of teaching materials and tools.
16.45-17.00	Reflection on the day
Day 3: 4h of studies	

12.30-13.00	Welcome words. Start of the day
13.00-14.30	Workshop 5 Methods, technologies and tools for promoting the development of children's digital competence in a preschool educational institution.
14.30-14.45	Break
14.45-16.15	Workshop 6 Methods, technologies and tools that encourage children to analyze, think, communicate, collaborate and reflect in order to acquire, accumulate and create content and exchange information in learning process.
16.15-16.30	Reflection on the day
Day 4: 4h of studies	
13.00-13.30	Welcome coffee
13.30-15.00	Workshop 7 Finding Balance with Media and Tech Use at Home
15.00-15.15	Coffee-break
15.15-16.45	Workshop 8 Self-assessment. Assessment and analysis of your digital competence. Setting future goals for the development of digital competence.
16.45-17.00	Reflection session and feedback

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Some of the slides from our course for in-service kindergarten teachers

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Results:

O1 BA course "Development of Digital Competences in Preschool Education" (3 ECTS)

O2 MOOC "Development of Digital Competences in Preschool Education"

O3 Professional development course for in-service teachers "Development of Digital Competences in Preschool Education"

How do I use digital technology myself and what place does digital technology have in kindergarten?

SELFIE- self-assessment questionnaire

What have we learned about our own use of digital tools?

Why would it make sense to introduce digital tools in kindergartens and why not?

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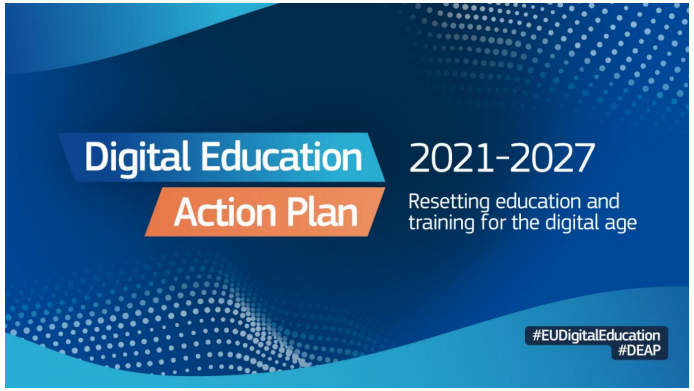

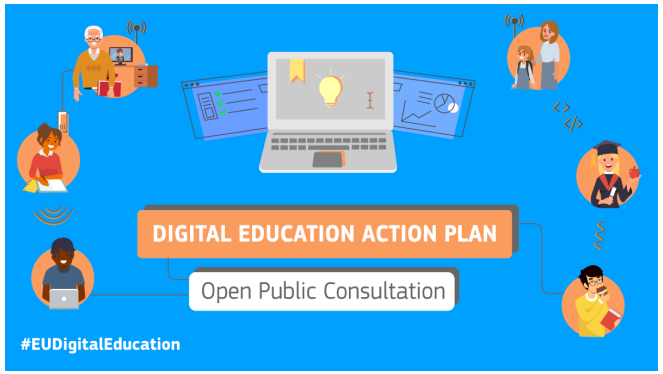

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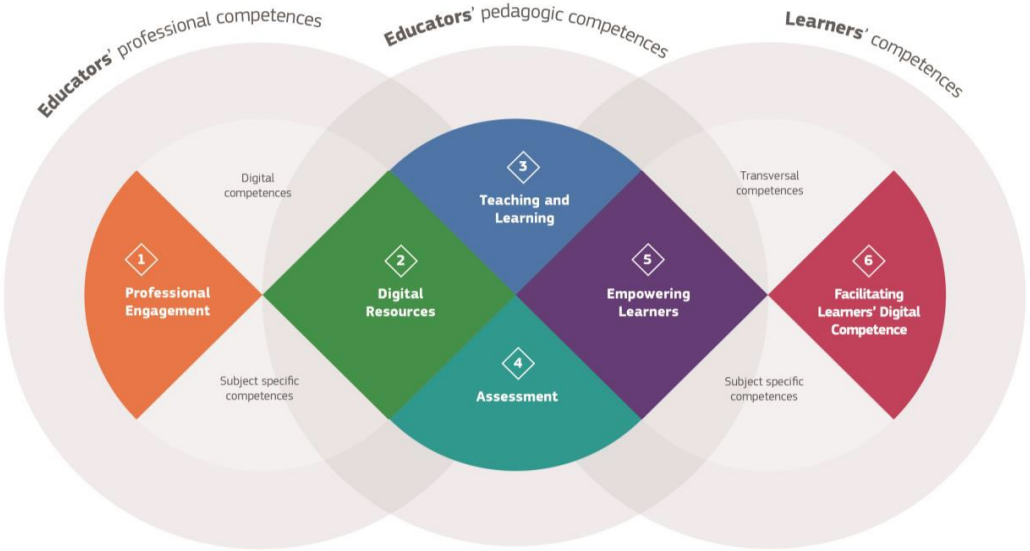
DigCompEdu framework



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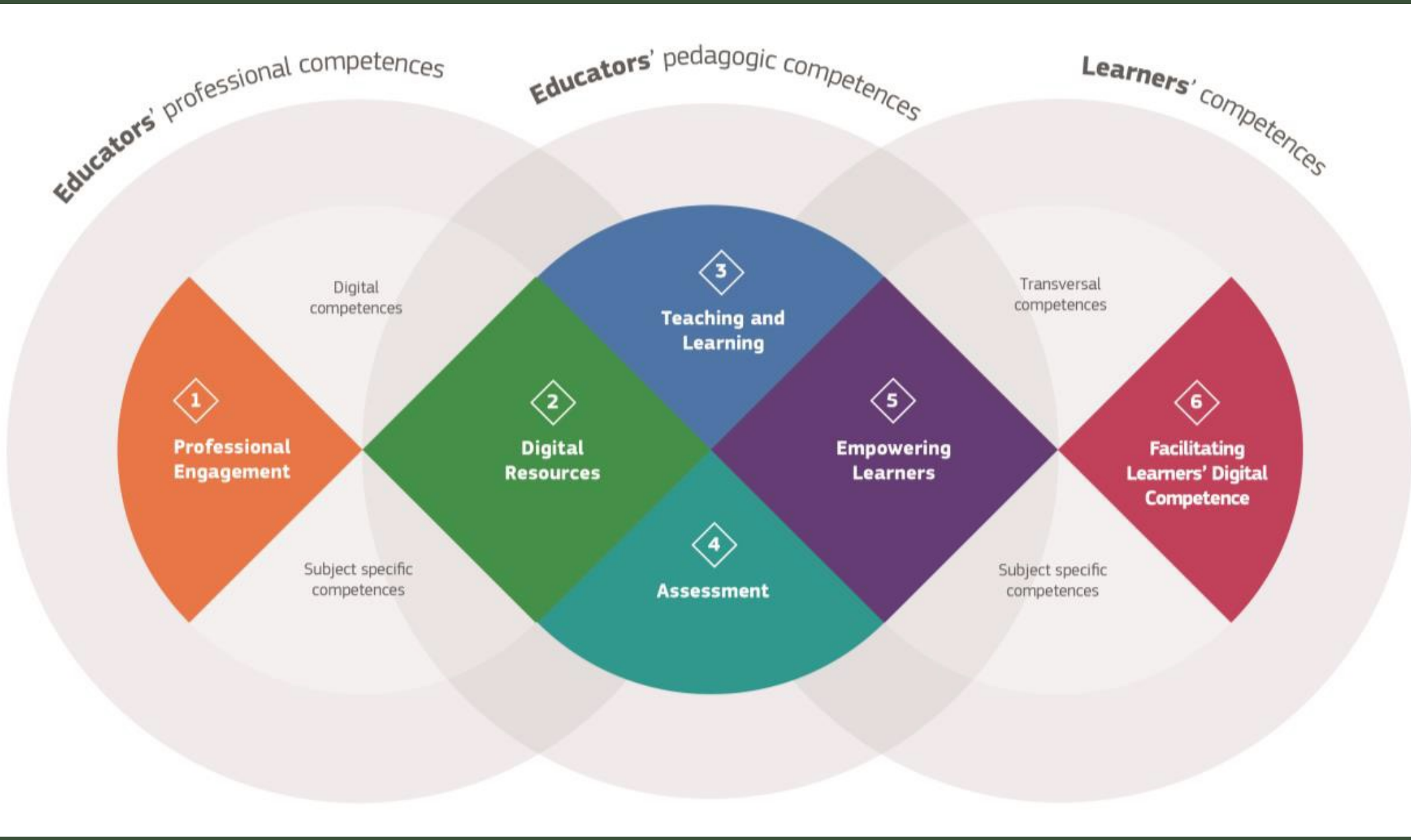
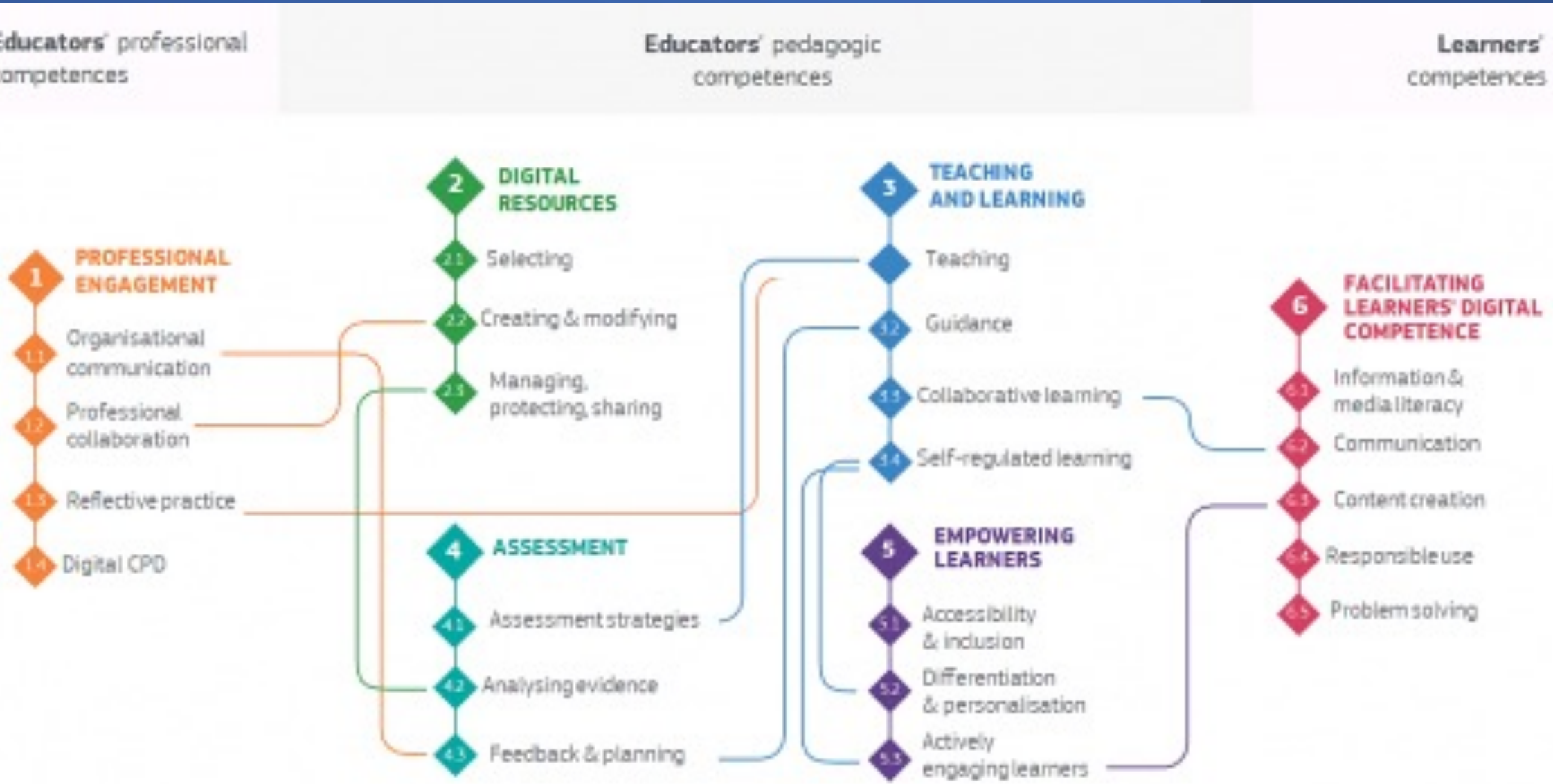

Educators' professional competences
Educators' pedagogic competences
Learners' competences
Digital competences
Transversal competences
Subject specific competences
Subject specific competences
1
Professional Engagement
2
Digital Resources
3
Teaching and Learning
4
Assessment
5
Empowering Learners
6
Facilitating Learners' Digital Competence


Educators' professional competences
Educators' pedagogic competences
Learners' competences
1 PROFESSIONAL ENGAGEMENT
1.1 Organisational communication
1.2 Professional collaboration
1.3 Reflective practice
1.4 Digital CPD
2 DIGITAL RESOURCES
2.1 Selecting
2.2 Creating & modifying
2.3 Managing, protecting, sharing
3 TEACHING AND LEARNING
3.1 Teaching
3.2 Guidance
3.3 Collaborative learning
3.4 Self-regulated learning
4 ASSESSMENT
4.1 Assessment strategies
4.2 Analysing evidence
4.3 Feedback & planning
5 EMPOWERING LEARNERS
5.1 Accessibility & inclusion
5.2 Differentiation & personalisation
5.3 Actively engaging learners
6 FACILITATING LEARNERS' DIGITAL COMPETENCE
6.1 Information & media literacy
6.2 Communication
6.3 Content creation
6.4 Responsible use
6.5 Problem solving

Computational Thinking

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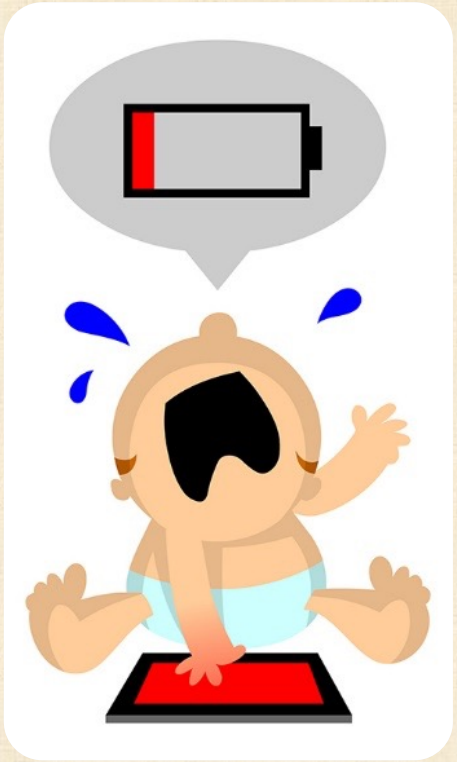
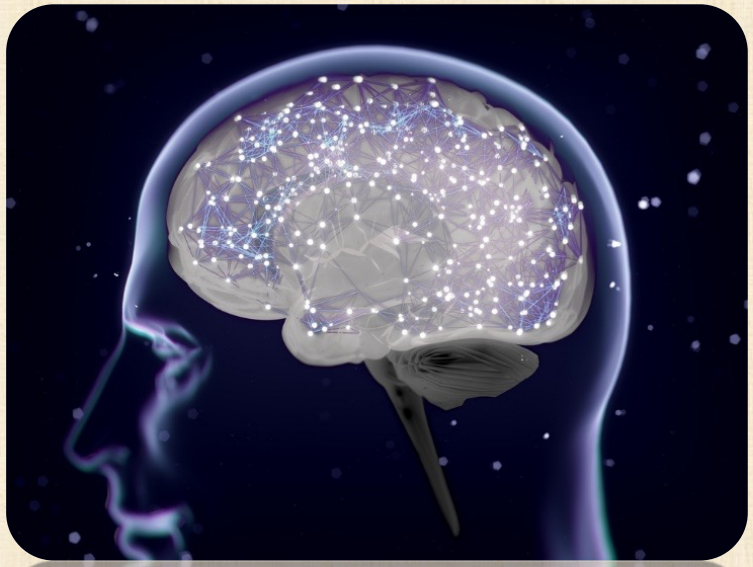


the myth of digital natives

Digital natives - children born after the arrival of digital technology, so they are natives in the e-world; for them it is their like a mother tongue - they are fluent in the "language" of computers, video games, the Internet, mobile phones...

Digital immigrants – people born before the advent of digital technology and encountered it at some point in their life; have acquired many skills for using digital technology, but we still have a "foreign accent" from our youth. This "accent" often prevents them from understanding young people or communicating effectively with them - and this is known in many areas, e.g. in education.



the myth of digital dementia

Spitzer M. (2012). Digitale demenz. München: Droemer, 7 West GL, Drisdelle BL,

Digital Natives, Digital Immigrants (Marc Prensky, 2001)

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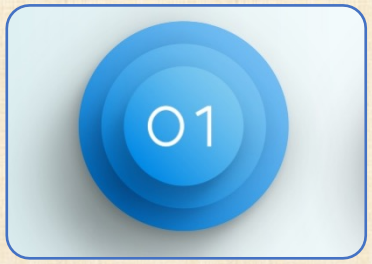

The ability to work with a computer is the key to effectively dealing with modern (professional) challenges.

Computational thinking

one of the key skills of 21st century students, placed alongside the basic learning skills of reading, writing and numeracy (e.g. Bundy, 2007; Qualls and Sherrell, 2010; Kalelioglu, Gűlbar, Kukul, 2016; Wing, 2006; CSTB, ISTE, 2007 ; NRC, 2011)

The way of dealing with problems, as assumed by computational thinking, is a **key approach to solving problems in all professional fields.**

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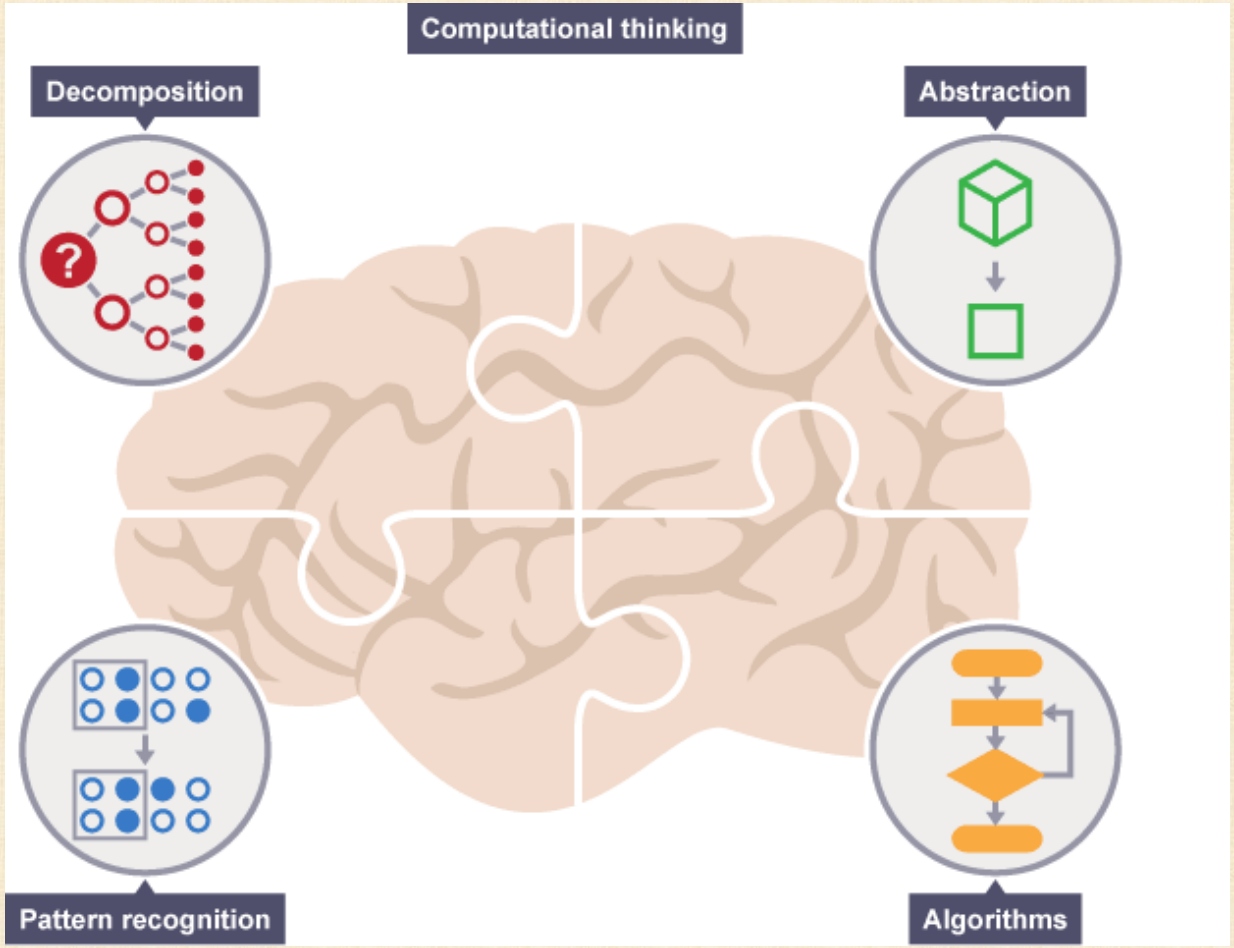
COMPUTATIONAL THINKING

the thought processes involved in defining a problem and expressing its solution in such a way that the solution can be efficiently executed by a computer.



My basic idea is that programming is the most powerful medium of developing the sophisticated and rigorous thinking needed for mathematics, for grammar, for physics, for statistics, for all the "hard" subjects.... In short, I believe more than ever that programming should be a key part of the intellectual development of people growing up."
- Seymour Papert

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- **Simon's Computational Thinking Lesson**
- https://www.youtube.com/watch?v=lSu_HKPJXWk

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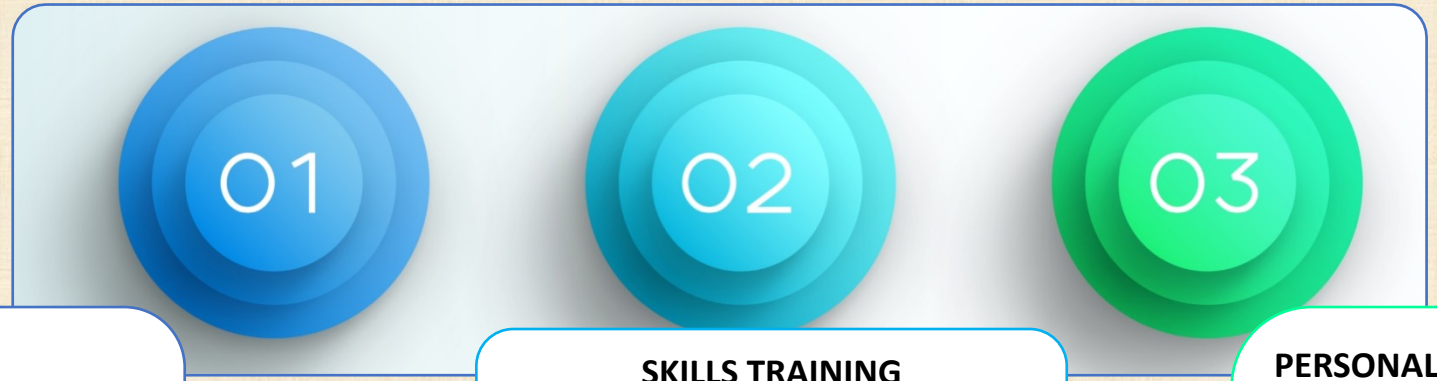
Possible contributions of Computational Thinking training:



PROBLEM SOLVING APPROACHES/STRATEGIES:

- Playful experimentation (tinkering)
- Planning, design, reflection: testing and refining, seeking feedback
- Cooperation

SKILLS TRAINING

- Communication
- Debugging – identifying, finding and correcting errors calculations

PERSONAL CHARACTERISTICS:

- Persistence – 1st try is often not the best
- Thoroughness and a desire for a quality solution to the problem - accuracy, attention to details/steps, improvement of the existing solution
- Creativity - solving open problems requires new approaches

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02

Computational Thinking training = training in problem solving strategies.

a tool that enables support in the development of mental concepts

contributes to the development of abstract and logical thinking

training in strategies for solving open problems

algorithmic or procedural way of thinking as a problem-solving strategy - GENERALIZABLE?

enables dealing with mistakes and analyzing mistakes without big risks - MISTAKES as a KEY ASPECT OF LEARNING

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03

Training in computational thinking can also mean the long-term empowerment of students to develop perseverance in the face of failure and consequently increase psychological resilience.

LONG-TERM AUTHORIZATION

Training in computational thinking promotes **self-confidence in dealing with complex tasks, persistence in working with difficult problems, acceptance of uncertain situations and the ability to deal with open problems.**

Training in effective error detection and correction can help students **develop a growth mindset** (Dweck, 1999) – strengthening the belief that abilities can be developed through one's own efforts and education.

Vir: http://www.educationvision.co.uk/evcarticle-computationalthinking6.pdf

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Computing without computers

Programming

https://www.csunplugged.org/en/

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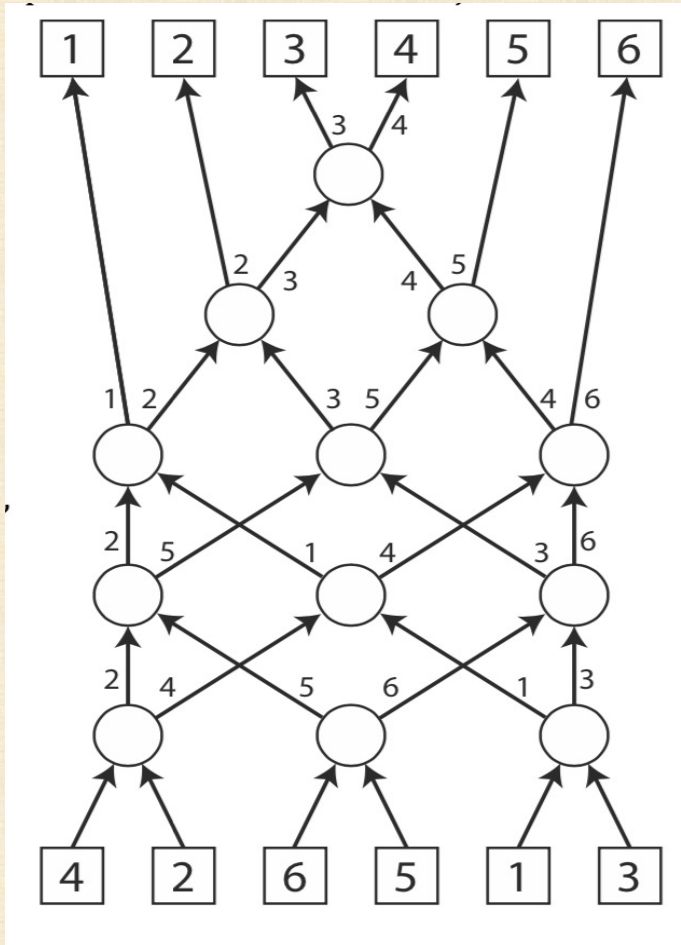
Activity 1: Parallel editing with grid - sorting



Activity steps:

- Draw a grid as in the picture (can be done with the help of children)
- The children are arranged in parallel squares
- They draw an item at random
- When the game starts, everyone moves to the circle according to the arrow
- Children in the same circle compare the elements (no one may leave the circle if they have not compared themselves with another child)
- The one with a lower value moves along the left arrow, and the one with a higher one moves along the right
- The child continues to the next round, where he/she waits for someone to compare themselves to
- Finally, we check the correctness of the sequence
- If it is false, we start again from the beginning

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Activity 2: The child 'programs' the child

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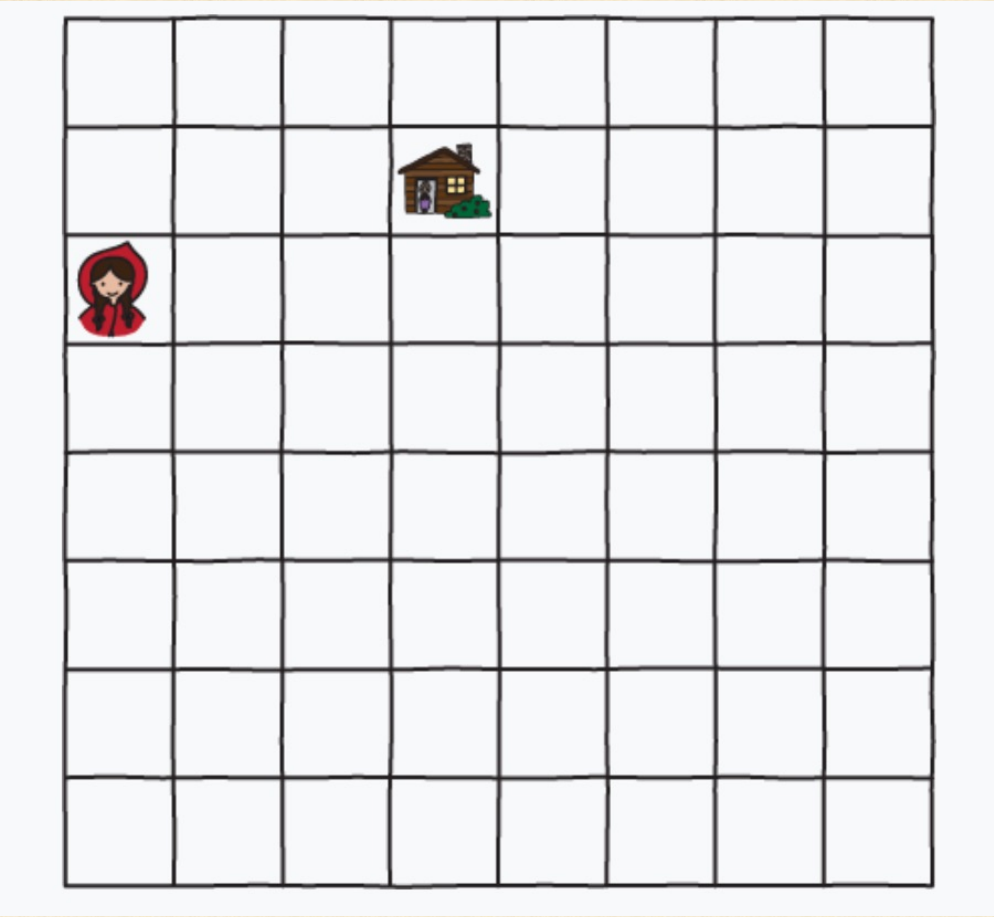

Activity steps:

- Let's create a grid (for children in kindergarten, we start with 4X4)

- Place elements on the grid (e.g. start, finish, toys, obstacles...)

- We give the children roles (programmer, tester, robot) and give them a task (e.g. bring the little red riding hood to the house)

Programmer:

Writes down the sequence of commands on a piece of paper in whole/or in larger parts, which lead the robot to the goal

Three possible commands (forward, turn left by 90%, turn right by 90%; when turning, stay on the same square)

If the tester finds a 'bug', he tries to fix the sequence

Activity 2: The child 'programs' the child

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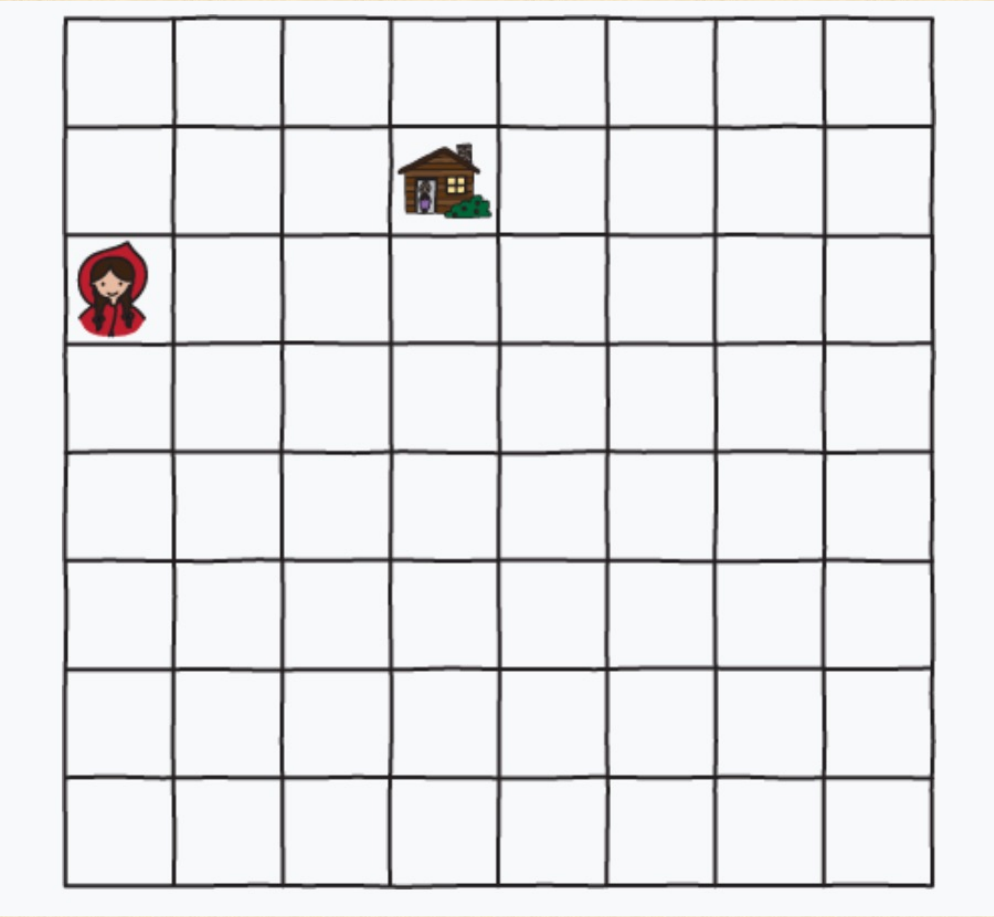

A programmer writes a program

Tester:

- Gives the robot instructions to move
- Monitors the executed sequence of commands and determines if the programmer has made a mistake (finding a bug)
- When it finds a bug, it flags it and reports it to the programmer

A robot

- Executes commands written by the programmer and read by the tester
- When there is a 'bug', it returns to the beginning

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Activity 3: Programming a simple program

Bee-bot

Blue-bot

What do children learn?

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Curricular objectives and other skills

- Break down a larger problem into several smaller steps
- Planning
- Giving instructions
- Following instructions
- Collaborative problem solving
- Fault tolerance
- Telling/retelling stories

Computational Thinking skills

- **Algorithmic thinking:** the child creates algorithms to 'program' the robot, thinking about the sequence of steps that lead to the goal
- **Abstraction:** uses commands (forward, turn left…)
- **Generalization:** he will be able to program a bee-bot with the same commands, he can transfer programming via verbal commands to programming via a tablet
- **Decompensation:** breaking down a larger problem into a sequence of small steps
- **Pattern Recognition:** What sequence of commands allows a robot to make a square or move diagonally, turn 180?
- **Logical reasoning:** thinking about what will happen if I give a certain step, finding 'bugs' and figuring out how to fix the error
- **Evaluation:** testing commands, a certain part of a sequence of commands, comparing the effectiveness of different sequences

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Extra activities

- Put obstacles in the way
- Place several elements that the individual must reach in a certain sequence (e.g. telling a story)
- Find an alternative route to your destination (check which one is faster - takes fewer steps?)

Activity 4: Innovative use of ICT in teaching: recording clips

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

- Learn to use tweezers
- Try to find as much content as possible that makes sense to teach with pinchers

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Sources

- https://classic.csunplugged.org/documents/activities/sorting-network/unplugged-08-sorting_networks-original.pdf
- https://www.csunplugged.org/en/topics/sorting-networks/unit-plan/description/
- https://www.csunplugged.org/en/topics/kidbots/unit-plan/rescue-mission/
- https://classic.csunplugged.org/documents/activities/sorting-network/08-Vzporedno-urejanje.pdf
- https://link.springer.com/chapter/10.1007/978-3-319-98355-4_29

Using digital tools in kindergarten

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Drawing according to instructions

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Drawing according to instructions

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- One of the most annoying things about computers is that they always do exactly what we tell them to do. If we are careless when giving instructions, the results can be ridiculously wrong. We will get to know how the programmer and the computer feel when we try to draw the picture ourselves according to the instructions.
- Regardless of the language chosen, the programmer must be careful and tell the computer very precisely what he wants from it.
- The computer will always follow commands literally (when possible, of course), even though the result may be funny/interesting.
- Programmers need to be precise, because even a small error in a program can have serious consequences (what can happen due to an error in a program that controls a nuclear power plant, turns on the lights of railway traffic lights, or drives an airplane, etc.)

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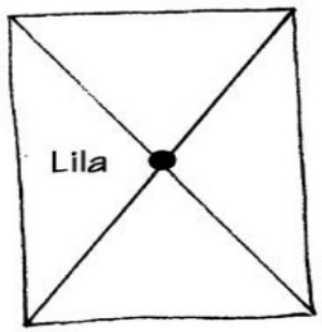
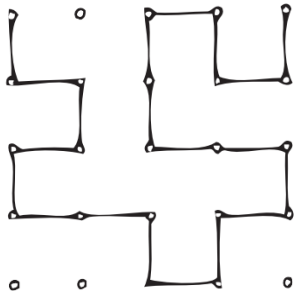
Instructions

- Prepare a pen and a square or rectangular sheet of paper.
- Draw the drawing according to the given instruction.
- Create the drawing independently (without the help of classmates/colleagues).
- We do not repeat the instructions additionally.



Slika 2

Slika 9



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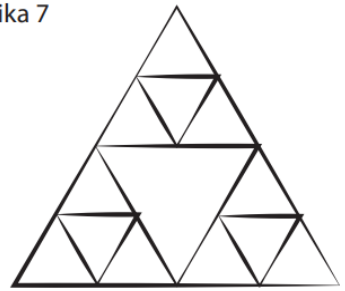
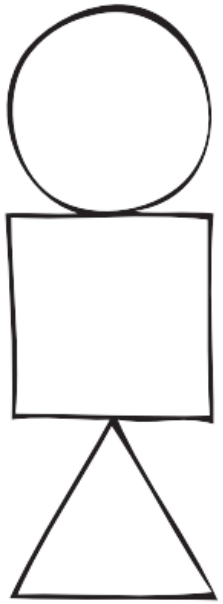


Slika 1



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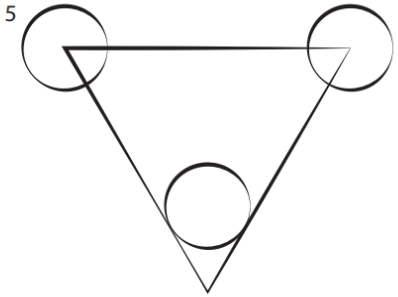

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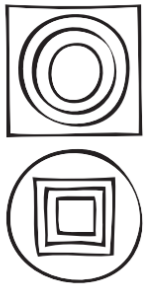

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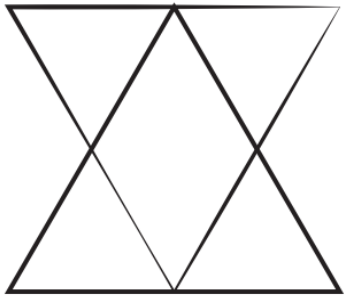
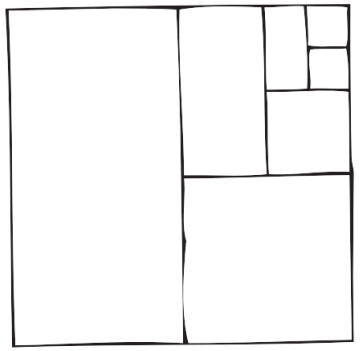
Slika 8



Slika 4



From concrete activities to the use of robots

Learning in pairs - one child plays the role of DIRECTOR, the other plays the role of ROBOT

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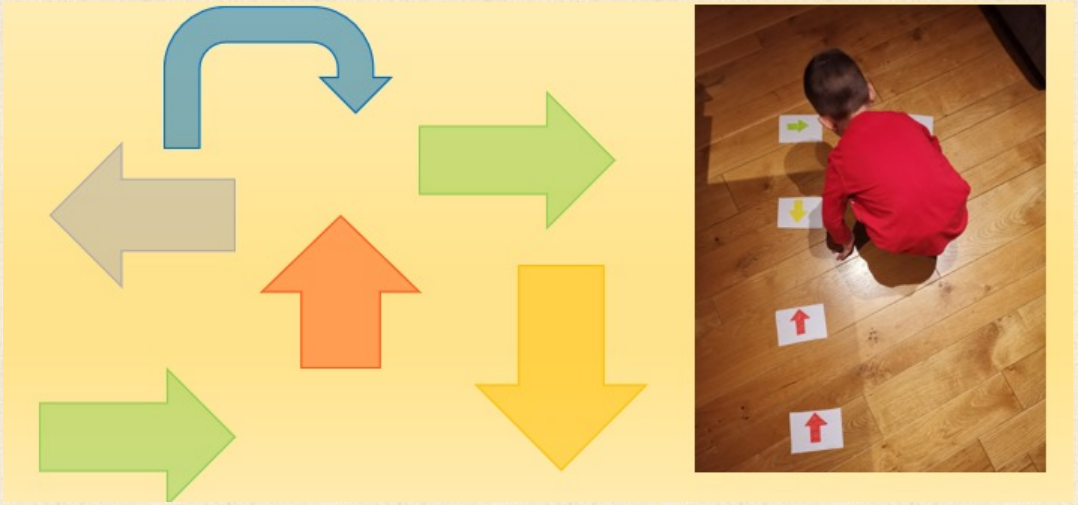

Purpose: children understand what algorithms are, how they are used as programs in digital devices, and that programs carry out precise and clear instructions.

Let's meet Bee-/Blue-bot

- *Children explore devices without guidance (a trial-and-error-based exploration process).*

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Let's meet Bee-/Blue-bot

- interactive educational STEM robot (you do not need a computer or tablet to use it)
- we also develop computational thinking by using robots, but before using them it is important to develop basic concepts through computing activities without a computer
- danger: the robot can only be a toy
- children learn to control robots by having them execute a given sequence of commands (also known as an algorithm or a set of instructions) - children learn to "program" a robot in a simple way

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Let's meet Bee-/Blue-bot

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- Children explore devices without guidance (a process of exploration based on trial and error), can be in pairs or small groups
- Directions: Turn on Blue-bot, put it in your child's hand and watch what happens. In most cases, kids will figure out how to move/direct the robot within a minute or two. Most children will be playing with Blue-bots before they understand how to intentionally create a sequence of commands.
- Allow the children plenty of time to explore the Blue-bot before starting other activities where you guide them through questions and simple challenges to learn how to operate the Blue-bot.
- As children gain more experience playing with Blue-bots, their play becomes more intentional. The commands they choose and the buttons they press will be less random and more intentional/planned. They will make decisions about where they want the Blue-bot to go.
- Examples: kids try to move Blue-bot towards a specific object, between obstacles on the floor, or guide it to another Blue-bot.
- Errors will occur in these procedures (algorithms) and the command set/code will need to be changed, which requires reflection.

Making groups

Task 1

1. Testing the operation of the Bee-/Blue-bot (meaning of the buttons)

2. Give commands/set of commands to Blue-bot by: moves to a specific object/toy/image or another Blue-bot reach the target between obstacles on the ground. Each group sets and solves at least 2 challenges.

3. Your ideas/tasks? Write them down in the padlet.

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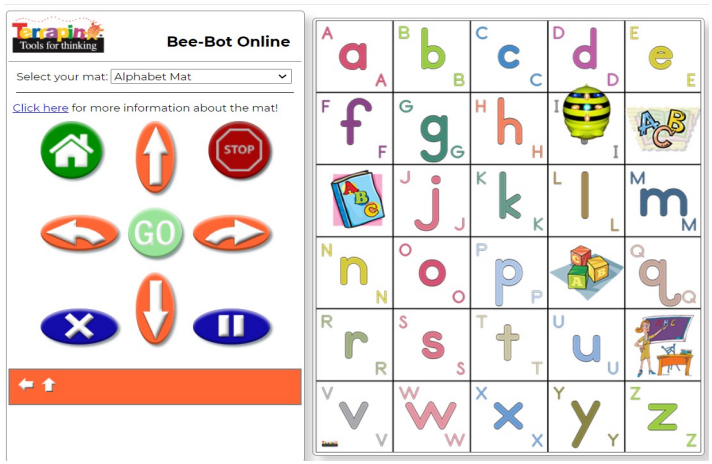
Getting acquainted

Example of use

Dance of the bees

[Bee-bot Emulator]



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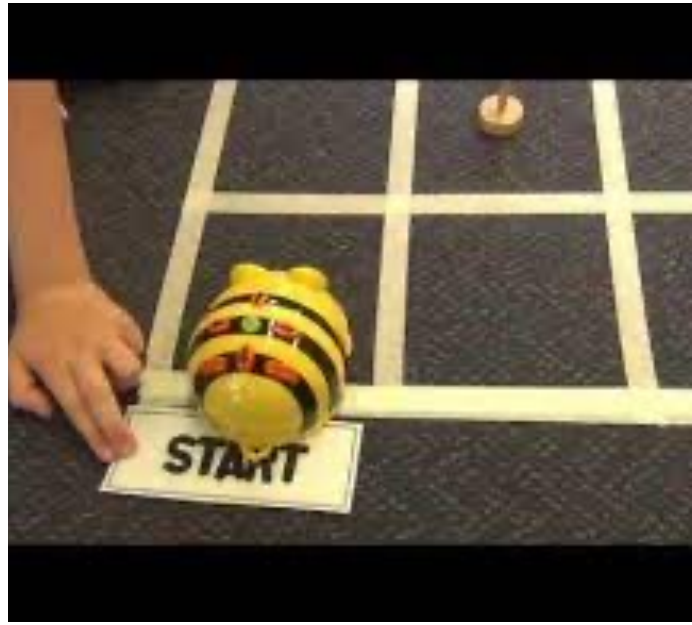
Blue-bot on the grid

- *Research approach*

Picture C



Blue-bot on the grid

- Exploratory approach: Introduce the net only when you notice that the children have become interested in the distance Blue-bot travels in one step forward or backward. Have the children find a way to measure this distance and create a net for Blue-bot themselves.
- With a small group of children, explore how Blue-bot moves one step forward (one square in the grid). You can guide the children by asking, "How far did Blue-Bot move?", "How can we show or measure how far Blue-Bot moves when it takes one step?"
- You can use a pencil to mark where the front of the Blue-bot is before it moves, then mark where it is when it moves forward one space. You can measure this distance with a ruler or ask the children to find an object in the room that corresponds to this length.

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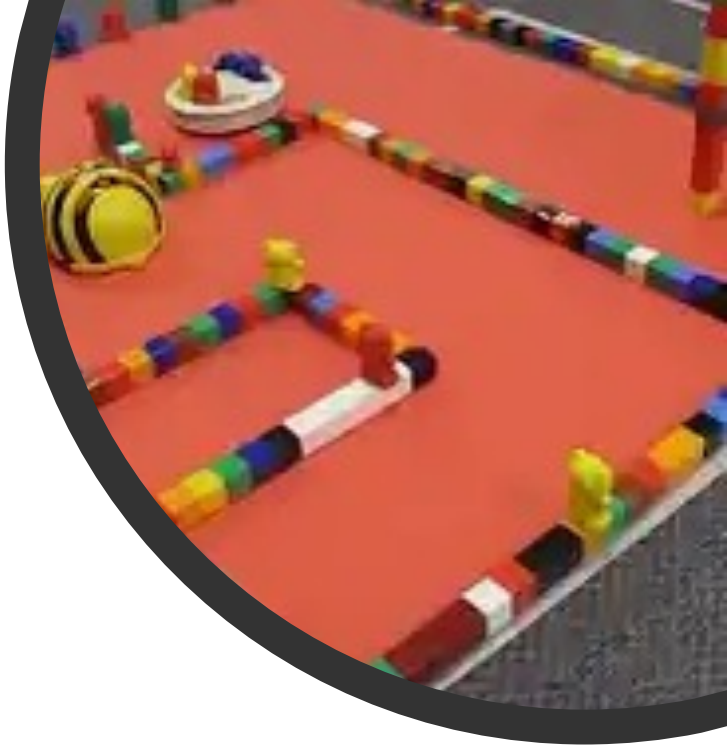

igure 5: Carpet or stage with the labyrint
allenge, to make programming sequenc
Bee-Bot.

Examples of robot carpets

ts in Early Childhood Education…

Examples of programs developed by a team while working on a teaching a
concepts

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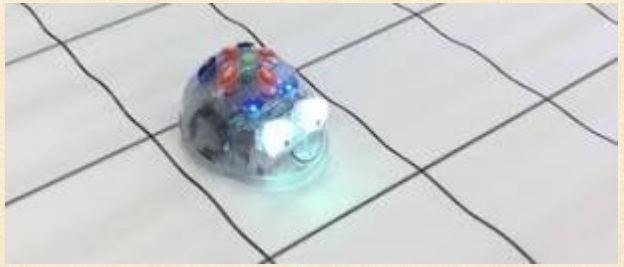
Bee-/Blue-bot on the grid



Task 2

Give commands/set of commands to Blue-bot by: moves to a specific object/toy/image or another Blue-bot reach the goal between the obstacles test Blue-bot's reverse journey to the destination Each group sets and solves at least 2 tasks.

Your ideas/challenges? Write them down in the padlet.

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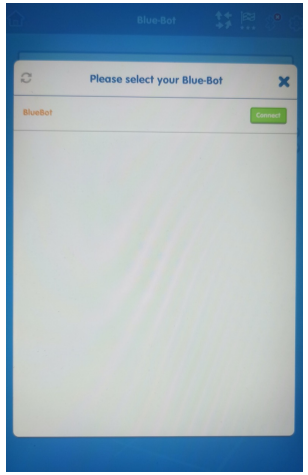
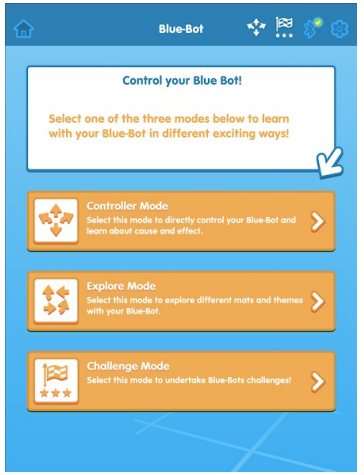
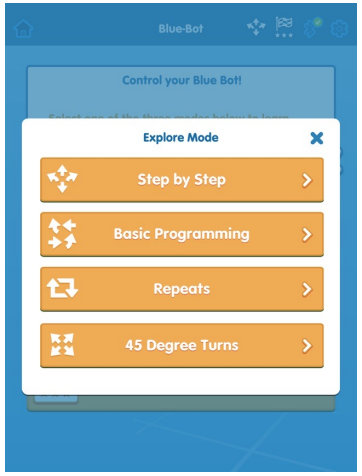
Use Blue-bot App with tablet







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Use Blue-bot App with tablet

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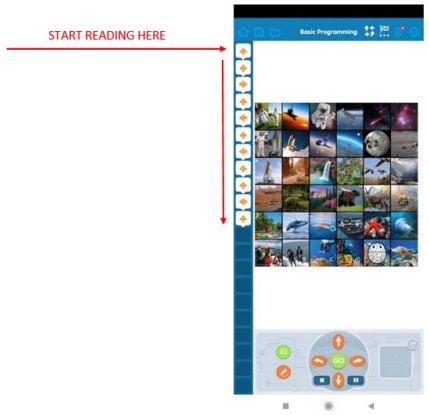

Use Blue-bot App with tablet

task 3

Activities:

1. Explore Mode > Basic programming:

Place Blue-bot in the starting point.

Set a goal.

Guide the Blue-bot to its destination by drawing a trail behind it.

Which function did you use?

Use the  button to return to the start menu.

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2. Explore Mode > Repeats:

Place Blue-bot in the starting point.

Have Blue-bot draw a square with side '2 steps'

Observe the recorded angle on the left. Are parts of the code possibly being repeated?

How could it be shortened?

How does the  button help you with this?

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Use Blue-bot App with tablet

- 3. Explore how Challenge mode works:
- Get from A to B
- Obstacles
- Fewer Buttons
- Random Instructions

ScratchJr

- https://www.scratchjr.org/teach/activities

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ScratchJr tasks

task 4

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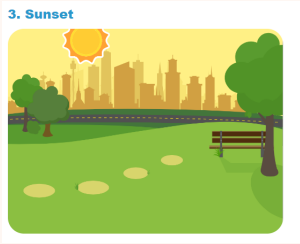
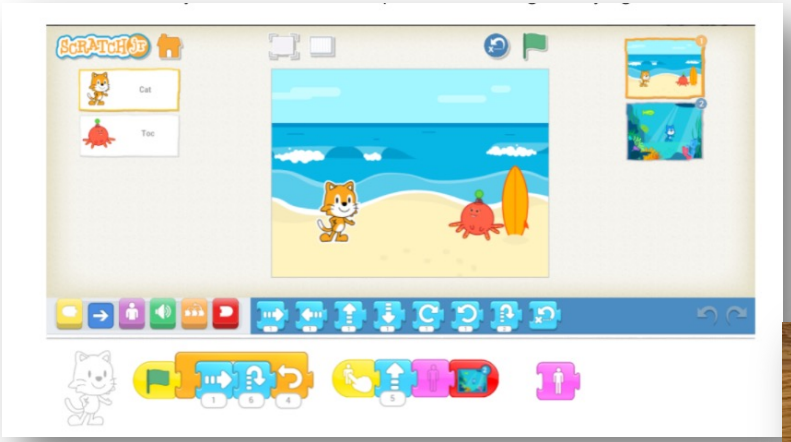
Activity 1:

Activity 2:

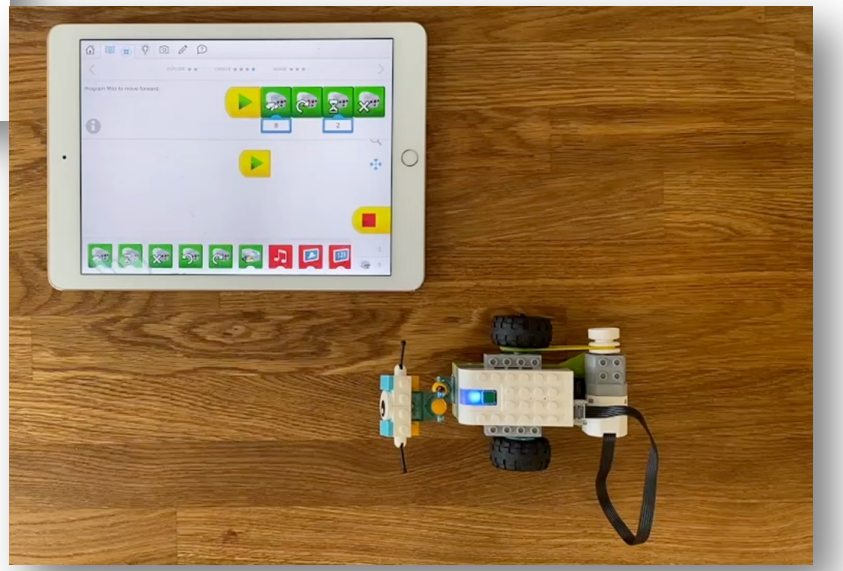


Activity 3:

LEGO WeDo



Scratch is a language and programming environment designed for learning to program using blocks



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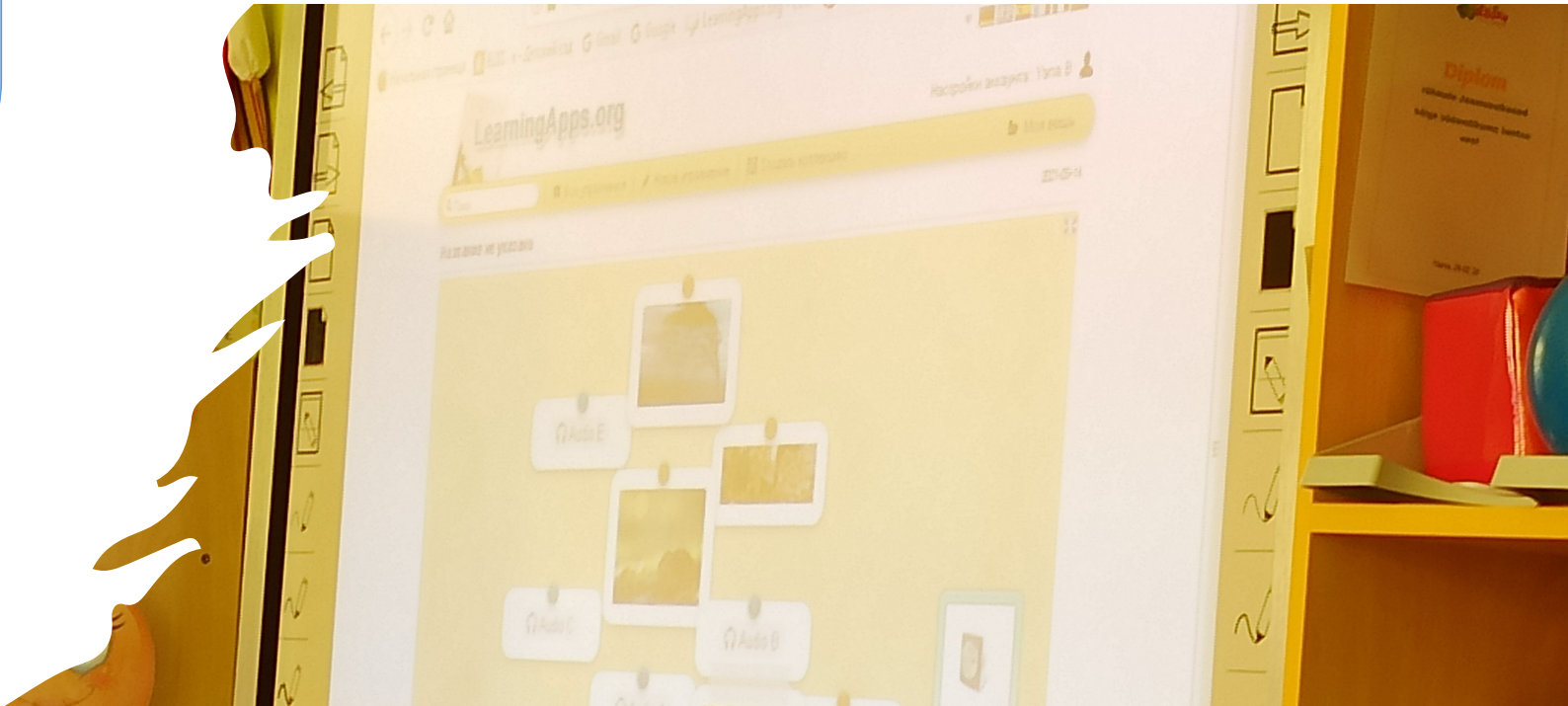
Stop-motion video

LearningApps



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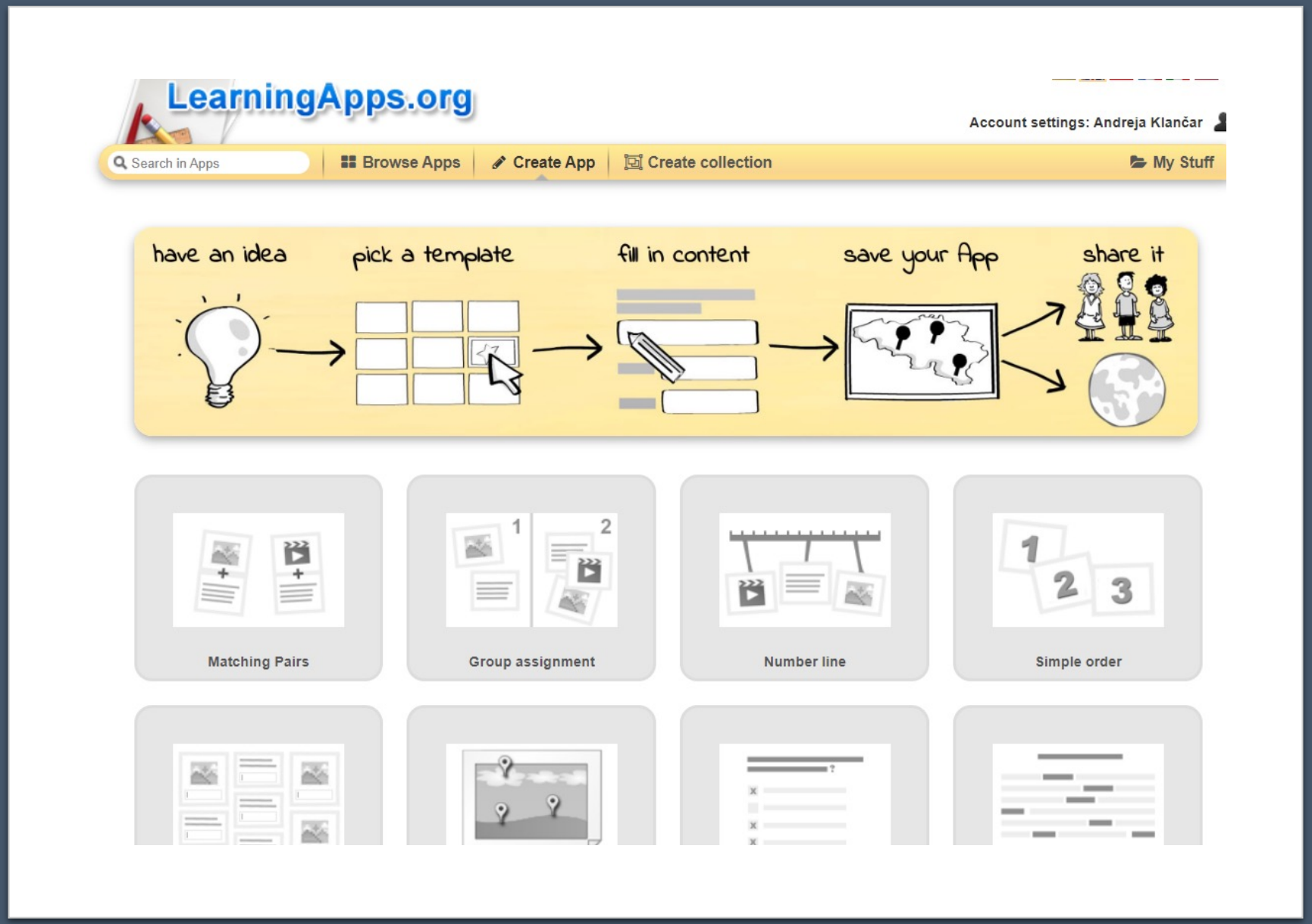

LearningApps

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Action-bound

ActionBound

Actionbound

Spletno orodje za pripravo učnih poti.
Na učni poti udeleženec uporablja pametni telefon ali tablični računalnik.

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Teachers and Students' Digital Wellbeing

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Omnipresent Technology

- **COMMUNICATION** (email, messengers, video calls inside the country and abroad, video conferences)
- **PRIVACY** (hackers, scamming, passwords and password fatigue, viruses and anti-virus software, VPN)
- **SHOPPING** (comfortable process of buying and selling from home or office in any spot of the worls, minimum equipment/tools required, high reliability of online banking)
- **INFORMATION ACCESS** (information at the tip of your fingers, GPS / Google Maps, social media with only smartphone required)
- **VIRTUAL LIFE** (social media, e-residency, online voting, digital governance/campus)
- **DIGITAL WORKING / LEARNING** (working or learning from home, working in shared documents, MOOCs, e-courses, online translation)
- **E-HEALTH** (tracking devices and smart watches)

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Elements of the modern digital life

Current trends:

- Digital transformation
- Technology addiction, mobile phone dependence
- Technostress, digital abuse, cyber-violence, digital harassment
- “Always-on” society, digital identity
- Digital/webinar/social media/zoom fatigue
- Digitally (il)literate, digital (in)equality, digital divide
- Digital diet

What we should ideally achieve:

- Healthy use of technology
- Digitally/technology rich learning environment
- Digital balance and digital wellbeing

For whom:

- For digital immigrants, digital naturals/naturalized digitals, and digital natives

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Generation Gap and Digital Divide

Teachers (often naturalized digitals)	Children (usually digital natives)
- Digital minimalists	- Digital maximalists
- Prefer F2F communication	- Prefer technology-mediated communication
- Ready to adopt new tools and technology if required/necessary	- Live in new technology
- Not always enthusiastic but ready to improve skills	- Up for it if it is interactive and immersive
- Prefer printing out the documents as opposed to screen work/time	- Adore online learning apps
- Potential stress from having to use new tools	- Potential excitement from the opportunity to use new tools
- Born with zero digital skills	- Born with zero digital skills

HOW CAN WE BRIDGE THIS GAP?

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- Photo by Amanda Smith from Flickr photo library licensed under Creative Commons

Thanks to DigiChild results
(project supported by Erasmus+)

- To share experience in digital pre-school education available in four partner countries (Latvia, Estonia, Slovenia, Germany).
- To survey in-service and future pre-school teachers, parents of pre-school children.
- Considering the survey results, to design a BA course on digital technologies in early education for students majoring as kindergarten teachers and a professional development course for in-service teachers.
- To develop a multilingual MOOC on the use of digital technologies in the kindergarten.

Photo by Jelena Konovalva, Tareke kindergarten director

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For which reasons?

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We hope that our pre-school children:

- will stop perceiving digital technologies as pure fun and entertainment.
- will start perceiving digital technologies as a valuable tool on the way to new knowledge, skills, and experiences.
- will turn into independent digitally empowered learners in case of necessity (e.g. lockdown).
- will become digitally savvy citizens in the future.

We hope that our pre-school teachers will feel:

- less stressed in the classrooms equipped with digital technologies.
- knowledgeable and empowered when integrating digital tools in the classroom.
- creative to diversify the application of tools for new learning purposes.

We hope that our parents of pre-school children:

- will become more open-minded in terms of using digital technologies in the classroom.
- will feel less relaxed in case of prolongued digital education (e.g. lockdown)
- will support teachers in their teaching-learning practices and aspirations.

We hope that this way we can help bring up a new generation aware of the ups and downs of digital technologies who are able to leave a digitally-balanced life.

TECHNOLOGY SHOULD IMPROVE LIFE AND NOT DISTRACT FROM IT.

WE HOPE THAT OUR DIGICHILD ERASMUS+ PROJECT WILL FACILITATE HIGHER DIGITAL BALANCE AND WELLBEING IN THE MORE AND MORE DIGITALIZED WORLD.

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