

EMPOWER GIRLS CREATIVITY THROUGH
USE OF DIGITAL TECHNOLOGIES

METHODOLOGICAL GUIDELINES FOR THE PROGRAMME

UNLEASH YOUR CREATIVITY
WITH TECHNOLOGY

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1. About this document

This document describes methodological guidelines for youth workers, trainers, and professionals on how to support implementation of online learning programme ***Unleash CreativITy with Technology*** which was developed during the international project Empower Girls' Creativity Through Use of Digital Technologies (Further - SparkDigiGirls). The project is funded by the European Commission's Erasmus+ Programme to enhance youth cooperation. This project is being implemented in Lithuania, Portugal, Slovenia and Greece.

Before starting to learn, it is important for each youth worker, trainer or professional to read this document till the end as this helps them to understand the aim, structure of the programme and teaching process. It is believed that these guidelines will become of great help for youth workers to find effective ways in increasing attractiveness of digital technologies among young girls.

2. The aim and goals of the of the project SparkDigiGirls

The project aims at encouraging girls aged from 14 years old to explore new digital technologies such as AR, VR, AI, IoT and come up with new and exciting ideas by utilizing their newly acquired digital knowledge to chart the waters of the male - dominated STEM industry with fresh, different, and creative viewpoints.

Key goals of the project are:

- reduce girls' concerns and demystify existing stereotypes about computer science and technology.
- increase of digital literacy skills for girls to open new and unforeseen possibilities for creativity, participation of girls in the digital world.
- empower youth workers as mentors to pursue girls' creativity through usage of digital applications and increase attractiveness of digital sector among girls.

3. Methodological guidelines of the online programme ***Unleash your creativITy with technology***

3.1. The aim of online programme

The online programme ***Unleash CreativITy with Technology*** is one of the most important activities of the SparkDigiGirls project. It suggests a unique approach where few different technologies are combined to solve a life situation of young person and show solutions.

The online training programme is designed for non-formal but could be used in formal educational settings as well.

The aim of the programme is to support girls age 14+ (Further – learners) to uncover creative and innovative problem solving of different daily life situations with the help of digital technologies, tools and increase attractiveness of computer science, technology, and engineering among girls.

3.2. What learners will learn

Key learning outcomes can be summarized in the following:

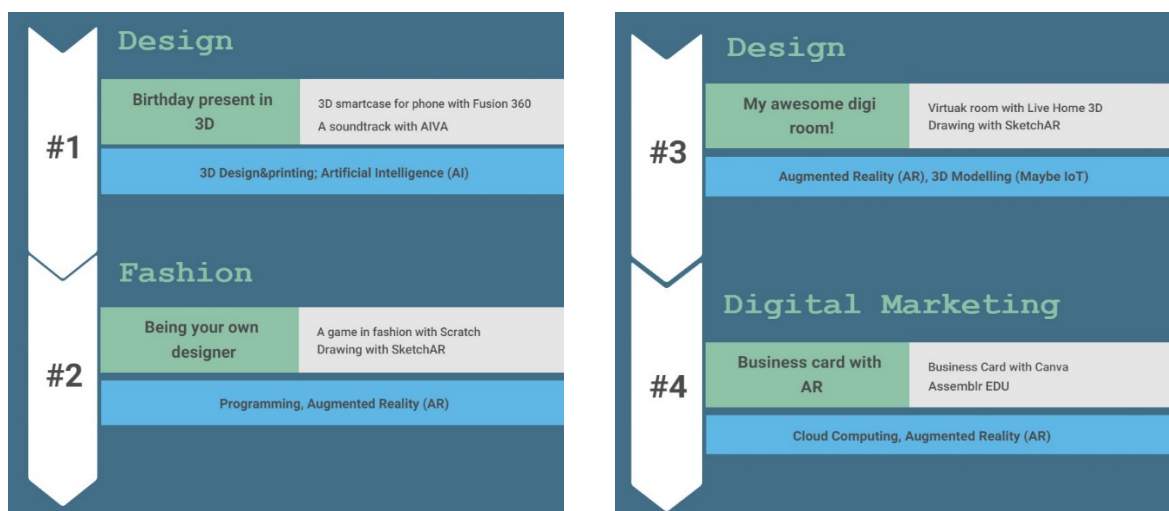
- Learners will understand the way how new digital technologies as Artificial Intelligence, Augmented Reality, Internet of Things, Programming, 3D modeling and printing, Cloud Computing, Blockchain work, how these technologies are applied and can support in finding solutions to real-life situations or problems.
- Learners will learn to approach real-life situations and problems using structured process of identifying the problem, generating creative ideas for solutions and applying technologies.
- Learners will acquire problem solving, creative thinking, digital skills that will help to generate creative ideas for solutions.

3.3. How to access online programme

The program is online and accessible for registered learners on Moodle platform. Moodle allows for the learners to use easily online materials with interactive references to other resources, to consult online and successfully participate in the learning process. The link to the programme’s online platform is as follows: <https://moodle.digigirls.eu/login/index.php>.

3.4. Structure of the programme

Online programme consists of 16 separate learning modes called challenges. Each challenge covers a specific topic or area of interest of young girls age 14+. For example, fashion, design, environment, culinary, art, etc. Each challenge includes two essential intertwining components: digital technologies (Artificial Intelligence, Augmented Reality, Internet of Things, Programming, 3D modeling and printing, Cloud Computing, Blockchain) and real-life situations or problems that young girls face in their lives. For example, how to make a birthday present in 3D, how to create clothes using programming, develop CO2 footprint, culinary web-site and many other interesting challenges. The table below shows the scheme of how topics, challenges and digital technologies are intertwined and what exact tangible results are reached at the end of implementation of each challenge.



#5 Culinary

Rock Star in the culinary! Create a Game using MIT app inventor

Artificial Intelligence (AI); Augmented Reality

#6 Entertainment

Tic-Tac-Toe Create a Game using MIT app inventor

Programming on smartphone

#11 Games

Bullying is not just a game! Pong game in Scratch

Artificial intelligence (AI), Programming

#12 Safe use of technologies

Safe usage of technologies 3D model - vase with Vectary; Selfie with Metaverse

3D design +Printing; Augmented Reality

#7 Virtual Art

Futuristic artists Non-Fungible Tokens (NFT)

Artificial Intelligence (AI) Augmented Reality (AR)

#8 Data Visualization

My virtual data-driven stories DataSet with Google Sheets Map or chart with Datawrapper

Cloud Computing AI

#13 Green Europe

Small changes with big impact CO2 Footprint

Blockchain; Artificial intelligence (AI), Internet of Things (IoT)

#14 Cybersecurity

Don't get hooked on the Internet Recognizing of Phishing techniques and signs

3D design + Printing; Augmented & Virtual Reality

#9 Buying and selling

My digi "arty2 business Your own Gumroad market place Digitalized art with HitPaw and Artvive

Augmented Reality Artificial Intelligence (AI)

#10 Self-branding

Rock your career Creating your own avatar

Cloud Computing, Artificial Intelligence (AI)

#15 Virtual Art

Cloud in the organization of a bazar Use Cloud based tools to organize a bazaar process

Cloud Computing

#16 Robots

Go SMART: Create a robot to help you Using robotic assemblies and code to make a robot complete various functions.

Robotics; Arduino

Each challenge must be completed by following concrete steps of implementation. By following the steps each learner knows exactly where to start from and how to complete it. During the implementation process learner will perform many interactive tasks and ultimately will solve suggested situation or problem.

Each learning mode – challenge includes:

- *Learning guide* which consists of introduction to the challenge and instructions for learner on how to perform it.
- *Videos* are used to present various digital technologies such as Artificial Intelligence, Augmented Reality, Internet of Things, Programming, 3D modeling and printing, Cloud Computing, Blockchain. Each video aims in a simple way to explain how these technologies work and what they are used for. Videos are either taken from *Youtube* or they are owned by partner organisations. On top of each video an interactive layer is added by using H5P tool to pay attention to important information in the video.
- *Presentations in pdf or ppt* files are used for presenting concrete tools, activities in a clear and summarized manner.
- *Quizzes* are used to interact with learners and test their knowledge in each challenge.

3.5. Duration of the programme

Implementation of all 16 challenges takes approximately 75 hours. However, the duration of the programme can be longer or shorter due to the level of skills of the learners, the number of challenges chosen for implementation, etc.

Online programme is provided in five languages: English, Portuguese, Lithuanian, Greek and Slovenian.

3.6. Ways to learn the programme and receive Grand Certificate

To complete the programme and receive Grand Certificate is enough to finish six challenges from each presented category in the table below. Each category is assigned to key leading and supporting technology. Learners are allowed to choose any challenge from each category and perform it by following provided steps. After completion of each challenge, the learner receives a certificate with the certain key. When the learner collects six keys, he will be able to unlock the Grand Certificate of the programme.

Categories	Topic	Challenge	Leading technology	Supporting technology	Results
Cloud Computing	Culinary	#5 Challenge: Pinch of food creations	Cloud Computing	Artificial Intelligence	Your own website with Wix
	Virtual art	#7 Challenge: Futurist artist	Cloud Computing	Blockchain	You will create your own online gallery where you will put all your arts in NFTs format
	Data Visualization	#8 Challenge: My virtual data-driven stories!	Cloud Computing	N/A	You will have your own Contact Map of your friends
	Green Europe	#13 Challenge: Small changes with big impact	Cloud Computing	Blockchain; Artificial Intelligence (AI); Intern	You will create your own CO2 Footprint

				et of Things (IoT).	
	Virtual art	#15 Challenge: Cloud in the organization of a bazaar	Cloud Computing	N/A	

Programming	Design	#2 Challenge: Being your own designer	Programming	Augmented Reality	You will create a game in fashion design
	Entertainment	#6 Challenge: Tic-tac-toe	Programming	Cloud Computing	You will create funny Tic-tac-toe game
	Games	#11 Challenge: Bullying is not just a game!	Programming	Cloud Computing	You will create a Pong game
	Robots	#16 Challenge: Create a robot to help you	Programming	N/A	Create robot that helps you

Phishing	Cybersecurity	#14 Challenge: Don't get hooked on the Internet	N/A	N/A	You will be an excellent in recognizing of phishing techniques and signs
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3D modeling	Design	#1 Challenge: Birthday Present in 3D	3D modeling and printing	Artificial Intelligence	You will create a 3D smart case for phone and music song as a present for your friend
	Safe use of technologies	#12 Challenge: Safe usage of technologies: 3D models and Augmented Reality	3D modeling and printing	Augmented Reality	You will make a 3D model – vase.

Augmented Reality	Design	#3 Challenge: My awesome digi room	Augmented Reality	3D modeling and printing	You will design your virtual room and will make an illustration for your room wall
	Digital marketing	#4 Challenge: Business card with AR	Augmented Reality	N/A	You will have your own business card with virtual effects.

Artificial Intelligence	Buying and selling	#9 Challenge: My digi 'artsy' business	Artificial Intelligence	Augmented Reality	You will create your own Gumroad marketplace.
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	Self-branding	10# Challenge: Rock your career (Self-branding)	Artificial Intelligence	Augmented Reality; Cloud Computing	You will create your own avatar
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3.7. Youth worker’s role in the programme

Youth worker plays a supportive figure who provides guidance and support for learners throughout their learning process of the programme. Youth worker’s primary role is to invite learners to the programme, facilitate their learning, follow the learning process and comprehension of materials. Youth worker can make a choice or agree with learners how learning should happen: i) by using classroom model; ii) by using online model or iii) using mixed (blended) model. The programme is created in a way it would be flexible and adaptable to any teaching or learning methods.

It is important to say that despite whatever model is chosen for learning process it is the learner who is always at the heart of this programme. Each learner, does not matter he works within a group or individually is following its own personalised learning path. Based on his interests or needs he can choose whatever challenges he likes for the completion.

3.8. The process of obtaining the Grand Certificate

Table No. 3 shows concrete steps for the process of obtaining Grand Certificate of the programme **Unleash Creativity with Technology**. First, the learner needs to register to the programme by clicking Sing in and completing registration form. Once the profile is complete the learner signs into the Moodle and selects preferred language of the programme. Then, he gets acquainted with the programme and reads guidelines on how to learn materials. As mentioned, to obtain the Grand Certificate it is enough to complete 6 challenges from provided 6 categories. Once, the learner chooses a number of challenges, it takes approx. 30 hours to complete all of them by following steps provided in each challenge. Once the challenge is finished, the learner needs to add result (depending on challenge it could be a file or link) to Moodle, complete the quiz and receive a certificate with a key to unlock the Grand Certificate. After completing the rest of chosen challenges and gathering all six keys the Grand Certificate will be unlocked and could be saved and printed from Moodle.




4. Creative Commons license


The programme is using following creative commons license type:



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It includes the following elements:

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NC  – Only noncommercial uses of the work are permitted