

*Robotic course for students for 14 days:*

*Detailed programme of the mobility period for*

**Activity: Programme for the 2 weeks-course for youth**

**Day 1:**

Welcome!

The host institution welcomes the guests, introduces them to the objectives of the exchange and invites the partners to introduce themselves.

**The colourful scarves- game**

**Description:** The participants sit in a circle. Each participant asks the names of the person on the right and on the left. The places are swapped, the participants having the same task again. The coordinator of the game gives the participant on his right, one by one, several colourful scarves: a yellow one, a blue one, a red one. They have to be passed one by one, from hand to hand to the following person. Every time a participant receives a yellow scarf he/she will tell aloud the name of the person on his left, when he/she receives a blue scarf, he will say the name of the person on his/her right and when he/she receives a red scarf, he/she will say the word „coockoo”. The rhythm will increase to produce a joyful atmosphere in the group.

**- Forming teams**

Developing international teams for the 1st training day with Puzzle

**Description:** Prepare pictures that we will cut into 3 pieces. Have as many pictures as teams (8 pictures). Scatter the pieces across the floor. The children will choose one piece each, and find their team mates in silence, with whom the puzzle will be completed.

**Robotic section:**

- Getting to know the main parts of the robot - Building the first robot from building instruction in a team

The participants will collect gamer points during the course, and we will develop the gamification system together. How can they earn scores and in-game lives, and how can they complete a level? At the end of the 2 weeks we declare the winner and the winner team.

**Day 2:**

## **How do I feel today?**

Developing the capacity of cognitive, emotional and behavioural self-regulation with game

From several pictures that are scattered on the floor, the participants have to choose one that describes his inner mood at that moment and explains it to the group.

### **Robotic section:**

- Getting to know the programming environment – how can I install, and import the sensors into it.
- Getting to know the Menu system of the robot

### **The image of the day (reflection) - end of the day evaluation**

A lot of different pictures are scattered around on the floor. The participants are asked to choose one to suggest their feelings, thoughts, misunderstandings, a curiosity or any other bond there may be between them and a particular picture. Then, they explain to the group their choice.

## **Day 3:**

### **Animals in the woods – ice breaker exercise**

Building capacity for conflict resolution by finding out personal way of being in relationship with the others

**Description:** The coordinator asks the participants to move freely a few minutes. Then, each of them has to choose an animal that better mirrors his personality and mime it. The coordinator asks them to play their own part in relation with the others. The tiger will run after the squirrel or the dog. The eagle will try to stay high, the ferocious animals will fight between one another etc. The participants are allowed to play for about 5 minutes, the coordinator noticing the dynamics of the group: running, attack, inactivity.

### **Robotic section:**

Starting programming

- Movement commands (medium motor, large motor, move steering, move tank) - Moving the robot (directions, turning, speed, stopping)

Basic commands for moving (speed, direction, break and coast) and other controlling commands. Turn for degrees, turn for seconds, turn for rotation. Create new projects, new programs inside the project. Using blocks for movement, block parameters, download the programs to the robots, test and correct the programs.

Youthpass certificates:

understanding the competences that are to be developed;

The participants are explained the competences they are going to gain during the exchange and the way they are going to complete the youthpass certificate.

The students will collect all the skills, competences in a teamwork.

Cultural evening

#### **Day 4:**

ice breaker exercise

#### **Yes! No!**

Building capacity for conflict resolution by experiencing a frustrating situation, specific to the conflicts.

The participants form pairs and they look at one another. One of them keep saying YES, while the other NO. After a while, roles change. At the end, they are asked how they felt and in what situations in real life they have felt in a similar manner.

#### **Robotic section:**

- Practicing movements - Move in square, triangle, hexagon, rectangle, rhombus - Loop command - Infinite Loop and count condition - Simplifying the programs with Loop

#### **Development of problem solving skills, analitical skills, algoritmical thinking**

Evaluating the day, and the tasks.

To emphasise what participants have learned from one another, they will be asked to thank one of their peers, the one that helped him the most to clarify things or to learn some new things. They say 'Thank you for ....', and receive 'You're welcome' in respond for a genuine, polite dialogue.

#### **Day 5:**

Ice breaker game:

The students will get some images of a story and they have to figure out the order of the images in this story.

### **Robotic section:**

- Practicing Loop - Nested Loops - Try to move in different shapes with nested Loops

Flying eggs: developing problem solving skills and creativity

Team work, creative cooperation: 2 or more teams are necessary. We give the groups an egg and a few every day tools (eg. 3 straws, 2 paper tissues, 1 paperclip, 1 matchbox) that they will use to build such a device in which if they put the raw egg, it will not break when dropped from 4-5 meters high. To complete this task the teams will have approximately 15- 20 minutes, and at the end we will actually drop the egg from the top of a ladder (or balcony, or table + chair). The winning team will be the one whose egg remains completely unharmed. This game excessively improves creative co-operation.

Cultural evening: Hungary

### **Day 6:**

Ice breaker game:

### **Temptation game**

Pair up and stand in a circle. We will have an outer and an inner circle. Those in the outer circle stand with the head bent down, they are not allowed to look up. One of the players has no partner. He or she will have eye contact with those in the inner circle and tries to get a partner from among them by winking. The person who was winked at tries to run behind him or her, fleeing from his or her partner standing behind him or her, who is trying to hold him or her back. It's a funny, energizing and team-building game.

### **Robotic section:**

- Wait command, wait for seconds - Touch sensor in Wait condition - Move steering On command - Understanding which state to use in which situation - Touch sensor tasks

Evening: historical walking around the village and visit the Kállay castle, travel on the old Ford A car.

### **Day 7:**

Ice breaker game:

### **The family's mania**

Send somebody out of the room. Those left inside are the family, who have a common "mania". This can be a typical move, mimic, gesture, word (cough, hair stroke, crossing legs etc.). Once agreed on this, the person sent out returns and starts asking questions (free- time, work, preferences etc.). When answering, the "mania" must be used, and the task is to find out what the mania is. This simple game forges the team very well.

### **Robotic section:**

- Practicing with Wait and Touch Sensor - Move On command tips and tricks - Differences and similarities between Wait and Loop

Sport activities in the evening

### **Day 8:**

Ice breaker game:

### **Sword-shield**

Form a circle, our index finger is our "sword", and our palm held horizontally facing up is our "shield". At the start of the game we place our "sword" on the player's "shield" standing next to us, and when the referee shouts "NOW" we try to withdraw the "sword", while with the "shield" (palm) we try to squeeze the "sword" of our partner. It's an excellent, concentration improving game.

### **Robotic section:**

- Ultrasonic sensor in Wait condition - Complex tasks - Sensors as Loop conditions

in the afternoon sumo robot competition

In the evening: board games for make stronger relationship among the teammembers.

### **Day 9:**

ice breaker game:

### **Clothespin-gatherer**

Get a bunch of plastic clothespins, in various colours. (We tried wooden pins as well but those are not too strong, so we stick with the plastic ones). We form two teams. Everyone fastens 10-10 pins on their clothes. The task is to collect the most pins in a given timeframe - fastened on

themselves! Determine the time limit in advance and use a stopper. We can play so, that we collect the pins on one-one team captain, which makes it even more exciting.

### **Robotic section:**

- Light sensor in Wait condition - Different modes of light sensor (reflected/ambient/colour) -
- The simplest line follower program - Get around an obstacle while following the line - The problems of time consuming commands in a Loop with condition

In the evening sport activities

### **Day 10:**

ice breaker game:

#### **Touch something blue with your right hand**

Our pupils love this game. Besides creating a good mood, you can practice limbs and colours with it very well. The referee says a colour, which has to be touched with a given limb (eg. "Touch something blue with your right elbow!"). Then everyone starts looking for something blue worn by their partners (sweater, trousers, shoelace etc.), and touches them with their right elbow and waits for the next instruction. It's a funny, energizing warm-up game, vocabulary task. To make it more difficult we can have a pupil be the referee.

### **Robotic section:**

- If/Switch command - Use sensors as condition of If - Repair the line follower program -
- Adjusting the line follower to move smoother with Nested If commands In the afternoon competition of line followers!

In the evening excursion around the village by bike to know the flora and fauna around us...

### **Day 11:**

ice breaker game:

#### **Bamboo-mission**

The participants stand in 2 lines in front of each other. On one side the players can be those born in the summer or spring, on the other side those born in the winter or autumn. Everyone flexes their elbows and reaches out with their index fingers. This way the fingers will be next to each other. Once this is done, the referee places a long bamboo rod on their fingers. The task is to place the bamboo rod on the ground without it slipping or falling off the fingers. If the bamboo rod falls, the team explodes.

### **Robotic section:**

- Loop interrupt command - Colour sensor and Switch - Understanding the Default case - Complex tasks using every learnt commands

In the evening cultural activities

### **Day 12:**

ice breaker game:

### **Japanese fighter**

The "fighters" attack and protect each other figuratively, shouting Ssssa! The attack happens with a breakout stance and extended hands as if we were pointing a gun at someone. The person we pointed at, quickly raises his or her hand, while the people standing beside protect him or her by holding their hands in the same gun pointing pose. Now the one attacked can attack. How? Breakout stance, shouting Ssssa!, and pointing at someone. Goal: improving concentration, movement co-ordination, reflexes, speed, directions and sense of balance.

### **Robotic section:**

- Using the display - Writing words - Drawing - When to clear the screen?
- Creating animations

In the evening sport activities

### **Day 13:**

ice breaker game:

**Exploding chessboard** Look for a place where the floor is covered with square shaped tiles, chessboard-ish (we don't need it to be black and white, single coloured will do, the point is the grid). Select a 8x5 area. This is the "danger zone" as it is full of "mines".

The challenge is that each player has to get from one place to another safe and sound within the time limit which is 10 minutes. The game master draws the grid for himself/herself and appoints the safe way with an arrow. The area outside of the safe way is the mine field and explodes. Appoint the Start and Goal squares.

The first player starts and carefully steps on the squares. If the square is a mine according to our drawing we shout "Mine!" and the player will have to return to the Start. The next player will have already seen which squares are safe and will only step on those further discovering the way. If a mistake is made, the player returns to the Start. The teammates can loudly advise and assist each other. The players can have unlimited tries. The goal is for everyone to get to safety within the time limit

#### **Robotic section:**

- Sound and Light commands - Creating our own building instruction with the Lego Digital Designer - exhibition of the robots made with Lego Digital Designer

In the evening mindgames and collaborative board games

#### **Day 14:**

ice breaker game:

#### **Team work**

Give a piece of paper to the team, along with pens of various colours. The team should be made up of 5 persons tops! The task of the members is to draw together what we ask. Work method: the members do the work one after the other using different colour - using the very same colour every time as an individual. One of them starts the drawing, the next one continues, and so on. The topic can be: a futuristic building, a car, a dinosaur, etc.

#### **Robotic section:**

- Final summarizing task

Evaluation of the course, personal, team work and self-evaluation.

Self-evaluation by expressing emotions and thoughts related to the experience gained during the project

Each participant receives a piece of clay or plasticine, to make a symbol, an image representative for the feelings/mood at the ending of the project. The images created will be presented to the group.

#### Step into action

On the floor there are footprints arranged on a particular pattern that leads to a chest. The participants are encouraged to follow the pattern by sharing some good advice they will take for the future. This will be their first step into action. Once they have reached the chest, they are asked to reveal the ‘treasure’, their Youthpass or Europass and the certificates about the course. They take one, as random as they are piled up, and will offer it to its owner.

Celebrating the results of the project.

#### *Addendum to the detailed program*

8:30 breakfast.

9:00-12:00 Activities according to the detailed program

12:00-13:00 Lunch

13:00-16:00 Activities according to the detailed program

16:00-19:00 Free time

19:00 dinner

Kállósemjén, 2022.02.15.



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