Learning Scenario

Workshop 3: Games and tools for programming

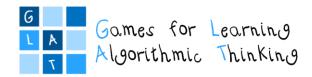|	
Learning Scenario Title	Nutrition
Course/ Grade	Science 2nd grade of elementary school
Learning Outcomes	**General learning outcomes:** • List the foods important to our health • Name the daily meals • Explain the relationship of diverse and regular diet with health • Describe decent behaviour at the table • Use the cutlery properly **Specific learning outcomes oriented on algorithmic thinking** • Identify and apply basic programming concepts when designing a game in Scratch (algorithm, sequence, condition, loop, variable) • Identify different as well as the shortest solution to achieve a specific goal and recognize • Solve simple logic tasks
Aim, Tasks and Short Description of Activities	Students will visit food market and observe groceries that can be bought there. Students will learn about food that should be regular in the diet, the names of the main meals, and how to behave at the table during the meal. They will design a computer game for identifying healthy foods.
Keywords	Nutrition, groceries, meals, game
Correlation and Interdisciplinarity	Croatian, Art, Informatics
Duration of Activities	5 school hours (5x45 minutes)
Learning and Teaching Strategy and Methods	Oral presentation Dialogical method Problem solving method Method of reading and working with text Method of writing Game Based Learning
Teaching Forms	Frontal teaching Individual work Group work
Tools	Internet browser, Scratch
Resources/materials for the Teacher	Photos, chalk and board, textbook, Internet browser, Scratch
Resources/materials for the Students	Prepared materials, notebook, textbook, Internet browser, Scratch

Teaching Summary	Motivation-Introduction	Duration
	The teacher will show food drawings to the students. They will classify shown foods into two groups: foods that should be regular in the diet and foods that should be eaten moderately or avoided. The teacher will show the drawings in the particular order: three types of food that should be regular in the diet, and one that we should eat moderately or avoided. Students will have to determine by themselves why the teacher is showing the foods in this order.	15 minutes
	Implementation	
	1. A few days before the activity, the teacher and students will visit the town food market. Students will receive the research question:	60 minutes
	What can we do at the market?	
	They will carefully look at all the part of the market, indoor and outdoor, and observe groceries that can be bought at the market. Students will keep their own notes to solve the following tasks:	
	a) Observe the parts of the market and list them.	
	b) List the groceries that can be purchased outdoors.	
	c) List the groceries that can be purchased in the first pavilion.	
	d) List the groceries that can be purchased in the second pavilion.	
	e) List the groceries that can be purchased in the third pavilion.	
	f) Draw the space of the market place.	
	2. After motivation, I will ask the students to remember what they saw at the town food market. Everything they remember will be written on a whiteboard. The areas of the market will be connected to the groceries.	15 minutes
	Student will use the textbook and with the help of teacher sort out the words related to proper nutrition. With these words students will construct sentences. For example:	30 minutes
	• Proper nutrition is important for health. • Proper nutrition should include a variety of foods. • Oily, salty and sweet foods should be eaten moderately. • Food is needed to grow and maintain health.	
	Then, the main meals and how people should behave at the table will be discussed.	
	3. The teacher will guide students through the process of designing a digital story with game elements. First, the teacher will show several games created in Scratch:	60 minutes

	https://scratch.mit.edu/projects/281378543/	
	https://scratch.mit.edu/projects/281460031/	
	https://scratch.mit.edu/projects/281418234/	
	Then, the teacher will announce that the student will design a game with several logical mini-games.	
	The student will choose the main character and the part of the market where the mini-games will be played. Students should also design the flow of the game and agree on the scoring method as well as the prize for the player who achieves the goal of the game.	
	Reflection and evaluation After university students create the game in Scratch, the students will play and discuss whether they like the game.	45 minutes
Annexes	Learning scenario in LePlanner: https://beta.leplanner.net/#/scenario/5d71e0bd80a288cd3abb86ad Story/game scenario	
Examples and Game References	Developed Scratch game – Let's eat healthy!: https://scratch.mit.edu/projects/325739167/ (30.7.2019.) Scratch – A story about cleanliness and health: https://scratch.mit.edu/projects/281378543/ (30.7.2019.) Scratch game - Red clocks: https://scratch.mit.edu/projects/281460031/ (30.7.2019.) Scratch game – Live and inanimate nature: https://scratch.mit.edu/projects/281418234/ (30.7.2019.)	

Game/story scenario

Title of the game	Let's eat healthy!
Type	Scratch story with game elements
Course/ Grade	Science 2nd grade of elementary school
Learning outcomes	• Get to know the groceries that are important to our health • Explain the relationship of diverse and regular diet with health • Play a simple game • Choose the right solution • Solve simple logic tasks • Recognize basic programming concepts
Goal of the game	The goal of the game is to follow the instructions. With the help of instructions, students will solve tasks and learn about healthy eating.
Characters and their roles	**Tašana** (main character) Tašana is a little girl who appears throughout the game. Tašana gives different instructions during the game. Based on these instructions, the student accomplishes tasks in order to adopt new content and reach the goal, the end of the game. **Grandma Sandra** (suppoting character) Grandma is a character who appears in the game to give directions. Grandmother represents a worker at the market. Tašana arrives to her food stall to pick healthy groceries.
Description of the game flow	Pressing the *s* key starts the game. Tašana first calls a player (a student) to help her buy healthy foods. Tašana comes to the market where grandmother appears and gives directions for the first mini-game. The game is started by clicking the key *1*. The player should use left and right keys to move and collect 20 healthy groceries in the basket. The player has 30 seconds to collect groceries. If the player does not collect enough healthy groceries, the game starts over. The next game is started using the key *2*. The player should lead Tašana through the maze to find cereals. After successfully passing the maze, the girl goes home. On her way, she comes across a wall. To see the next task, the player should press key *3*. The task is to arrange the words of a phrase related to healthy diet in the correct order. The player should also write the name of the meal shown on the photo. If the player answers correctly, Tašana is ready for lunch. Key 4 starts the final mini-game where the player should set the table.
List of scenes / backgrounds	1. Home 2. Market (market1, market2, market3, market4, market5) 3. Street 4. Wall 5. Kitchen 6. Breakfast 7. Table (table1, table2)

	8. Set the table
	9. Final
Logical mini-games within the story	**1. Collect healthy groceries** The player moves left and right using the arrows on the keyboard to collect healthy groceries to the basket. The player should avoid unhealthy foods. **2. The maze** Using the arrows on the keyboard (up, down, left, right) the player moves through the maze and avoids obstacles and unhealthy foods to reach the cereals. **3. The wall** The player should arrange the words of a phrase *Healthy food – healthy life!* in the correct order. **4. Setting the table** There is a spoon, fork, knife and dessert spoon on the table. The player's task is to properly set the table for lunch.
End of the game	After the player completes all the tasks, the game ends. To play again, the player should press *s* key.