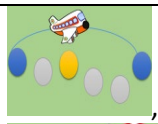
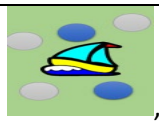
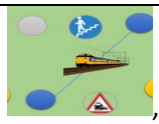
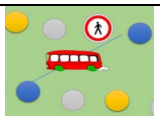
Learning Scenario

Workshop 1: GBL and unplugged activities

Learning Scenario Title	Playing and revising about the traffic
Course/Grade	Science Homeroom class (topic "Personal and social development") 2nd grade of primary school
Learning Outcomes	***Learning outcomes focused on general subjects*** • Notice traffic signs for pedestrians • Distinguish, name and compare bus station, train station, airport and shipping port • Describe the importance of traffic connections in the homeland • Name the professions related to the traffic and means of transport • Connect knowledge about traffic signs, means of transport and behavior in traffic into a logical unit • Apply knowledge in everyday life situations • Review own traffic culture ***Learning outcomes focused on algorithmic thinking*** • Use the if command • Find different, but the shortest solutions for achieving a certain goal (the shortest path in the game)
Aim, Tasks and Short Description of Activities	By playing the game according to the rules, students revise subject matter about traffic, means of transportation and traffic signs within the Science course. In the homeroom class, students learn about the decision concept, how to make a decision and about its consequences. In the game TRAFFIC, students will practice the application of the decision making model on examples by rolling a die, answering the questions, making decisions and accepting the responsibility. - - - - Students will use the if command to revise the subject matter, play the game according to the rules - answer all the questions and reach the goal as fast as possible.
Keywords	- means of transportation (train, bus, airplane and ship), traffic signs - decision, consequence, choice – – – - algorithm, command, a condition for making the decision, if command
Correlation and Interdisciplinarity	Mathematics, Homeroom class, Informatics
Duration of Activities	90 minutes

Learning and Teaching Strategy and Methods	Game Based Learning Dialogical method Demonstration method Problem solving method	
Teaching Forms	Frontal teaching Individual work Group work (5 students)	
Tools	-	
Resources/materials for the Teacher	Sketchpad, Canva, Microsoft Word for preparing materials	
Resources/materials for the Students	Game rules, question cards, score table and game board. Die Pawns Pen (for game leader)	
Teaching summary	**Motivation-Introduction** Introductory conversation of the teacher and students about their way of arrival to and departure from school. The conversation include questions like: Do they come on foot, by car, by bus? What traffic signs do they see on the road? Do they always use the same route? Is there another way to go to school? Is a particular route longer or shorter? ...). Based on discussion about longer or shorter routes, we repeat the model of decision making and its consequences (the decision is what we have chosen). *Examples:* *If I use the long way I have to wake up early, otherwise, I can sleep longer.* *If it rains, will I wear rubber boots, or clothes sneakers? (WHY? - So that my legs don't get wet and I don't get cold).* _ _ _ Repeat the concept DECISION -if-then-else (In everyday life we also make decisions. For example: **If** I get a good grade, **then** I can play games longer, or **else** I have to learn more.)	Duration 20 minutes
	Implementation **1st activity:** The teacher divides the students into groups of 5 students (4 players and game leader). Benches are moved and connected so that the students can sit in groups.	50 minutes

	With the help of two students, teacher demonstrates the rules and then distributes the working materials (question cards, score tables, dice and pawns). **2nd activity:** Playing the games (in groups of 5 students) At the beginning of the game, each student roles a die. The student with the highest number becomes the game leader. The leader gets a paper where she/he writes the players' names and keeps the scores. During the game, she/he is in charge for reading the questions from the cards. She/he also writes "C" for every correct answer or "I" for every incorrect answer as well as how many times the player stopped on one of the numbered fields (by putting the mark X for each stopping). The aim is to reach the end of the path on the game board by stepping on as few fields as possible. The player who rolled the smallest number starts the game. The player sitting on her/his right side plays next. The game starting point is the picture of a traffic light (). Players move their pawns forward along the path by the number of fields indicated on the die. If the pawn ends on a field occupied by an opponent's pawn, the opponent's pawn is returned two fields backwards. Explanations of specific fields:  or  - Upon arrival in the fields with these traffic signs, the player has to roll an even number to continue the game. Otherwise, she/he pauses a round.  - By coming to this field, the player takes one of the question cards and answers the question. If she/he answers correctly, she/he can roll the die and move forward according to the number indicated on the die. If her/his answer is incorrect, she/he needs to remain in that field until the next roll.  or  - Upon arrival in the fields with these traffic signs, the player moves her/his pawn backwards for the number of fields that represents the smallest multiplier of the number indicated on the die.  or  - By coming to the fields with these traffic signs, the player can move forward for two fields, if she/he explains exactly their meaning. Otherwise, she/he remains in that field until the next roll.	

	    or  - Upon arrival in these fields, the player has to decide whether to use a shortcut to reduce the number of fields that he will step on or resume the game without using the shortcut. If the player decides to use the shortcut, he needs to take two cards and answer the questions correctly. Otherwise, he needs to take the longer path. A game winner is the one who has the most correct answers and first reaches the end of the path.	
	Reflection and evaluation Discuss with the students about the game using the following questions: How did you like it? Was it interesting, difficult, tense, ...? Do you have any new suggestions/ideas for the game? Do you like this method of subject matter revision? . . . What were the consequences of your decisions? Would you make different decisions and why? How did you like this group work? Did everyone respect given rules? Did you respect each other's opinions? . . . – – – Repeat the meaning of the concept DECISION Give few examples from everyday life (**If** I write my homework **then** I can play. **If** it rains **then** I have to wear an umbrella or **else** I'll get wet.)	20 minutes
Annexes	Game rules, question cards, score table and game board.	
Examples and game references	Proprietary game - TRAFFIC	

Games for Learning Algorithmic Thinking

Game rules

Three to seven players may play. Each player has one token.

The aim of the game is to revise the lessons about traffic from the subject of *Nature and Society* and to explain the concept DECISION.

At the beginning of the game, each student roles a die. The student with the highest number becomes the game leader. The leader gets a paper where she/he writes the players' names and keeps the scores. During the game, she/he is in charge for reading the questions from the cards. She/he also writes "C" for every correct answer or "I" for every incorrect answer as well as how many times the player stopped on one of the numbered fields (by putting the mark X for each stopping).

The aim is to reach the end of the path on the game board by stepping on as few fields as possible.

The player who rolled the smallest number starts the game. The player sitting on his right side plays next.

The game starting point is the picture of a traffic light ().

Players move their pawns forward along the path by the number of fields indicated on the die. If the pawn ends on a field occupied by an opponent's pawn, the opponent's pawn is returned two fields backwards.

Explanations of specific fields:

 or  - Upon arrival in the fields with these traffic signs, the player has to roll an even number to continue the game. Otherwise, she/he pauses a round.

 - By coming to this field, the player takes one of the question cards and answers the question. If she/he answers correctly, she/he can roll the die and move forward according to the number indicated on the die. If her/his answer is incorrect, she/he needs to remain in that field until the next roll.

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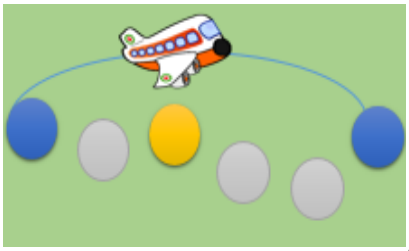
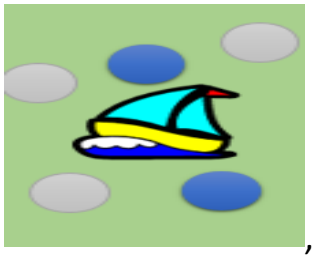
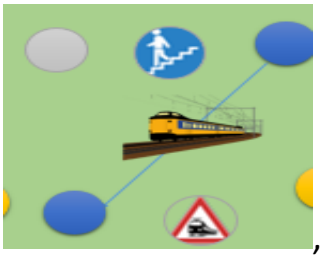
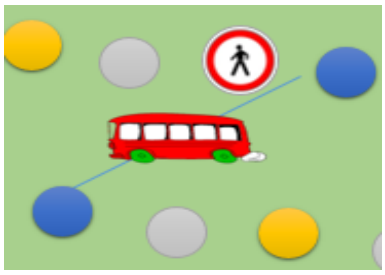
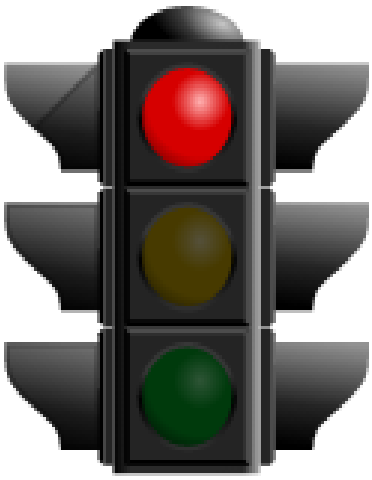
 ,  ,  ,  or  - Upon arrival in these fields, the player has to decide whether to use a shortcut to reduce the number of fields that he will step on or resume the game without using the shortcut. If the player decides to use the shortcut, he needs to take two cards and answer the questions correctly. Otherwise, he needs to take the longer path.

A game winner is the one who has the most correct answers and first reaches the end of the path.



Games for Learning Algorithmic Thinking

Question cards

- Cut each card

What are the possible shapes of traffic signs?	Explain the difference between traffic lights for drivers and pedestrians.	What do the trains run on?
Which is the fastest vehicle?	What is the purpose of helmet and protectors while you are riding a bicycle?	Name three vehicles that drive on the road.
What do you call the place where we enter the train and come out of it?	How do you call the person who travels?	How do you call the person who drives a train?
What traffic signs did you notice next to your school?	Where will you check the time of departure and arrival of the bus?	What do we need to buy in order to travel?
What do traffic signs tell us?	Why do we need to know the meaning of the traffic signs?	Who checks the tickets on the bus?

Where can we check the time of departure and arrival of the bus at the bus station?	**Does the railroad pass through your town?**	**Describe the difference between traveling by plane and traveling by car.**
Can you travel from your town by plane?	**Which types of ships do you distinguish?**	**Specify rules of polite behavior when traveling by boat.**
How should we behave when traveling by bus?	**Compare the passenger and freight train. Explain the difference.**	**Where are the passengers waiting for the departure or arrival of the train?**
Who checks the tickets and takes care of passengers during the journey?	**When can passengers get into the plane?**	**Describe the process of passenger and luggage control at the airport?**
What is your role in traffic?	**Which traffic signs do you need to respect?**	**What do you call a place where ships dock?**
Where do we buy tickets?	**Who flies a plane?**	**Ships are sailing:** **a) in the air** **b) on the water** **c) on the road**

Score table

- The game leader should enter C or I for each answer and mark X for each stopping on numbered fields.

Player's name		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.
	Answer: C / I																									
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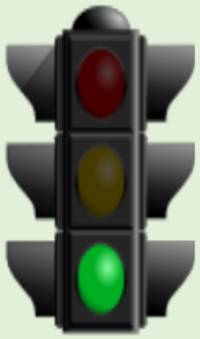

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FINISH