

Title: CITIZEN ROBOTS

Educational level: 3^{er} Grade, 2nd Cycle of Primary Education.

Curricular areas: Social Science.

Timing: in any term.



Summary

Students will act as programmers responsible for guiding the "citizen robot" across a city-simulating board. We will use cards with traffic signs and movement instructions. An algorithm will be designed to allow the robot to safely reach its destination, adhering to traffic regulations, identifying traffic signs, and adjusting the route if necessary to reach the final destination.



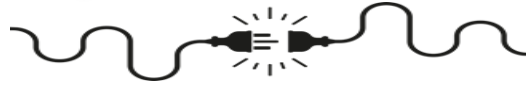
Aims

- Learn the meaning and importance of traffic signs and road rules in the city.
- Develop sequencing and problem-solving skills.
- Design and execute simple algorithms.

Key competencies to develop:

- Competence in linguistic communication.
- Civic competence.
- Cultural awareness and expression competence.

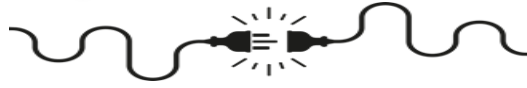




How do we do it?

- 1. Introduction.** Present the concept of road safety and the importance of traffic signs. Explain that the activity involves acting as programmers, and their mission will be to guide their "citizen robot" across the City Board towards the final destination.
- 2. Presentation of Signs.** Show the traffic sign cards ("stop", "give way", "pedestrian crossing", "no turning"). Explain the meaning of each sign and how they should be followed when programming the route.
- 3. Team Formation.** Divide the class into four groups. Each group selects the colour of their robot and is given a City Board.
- 4. Preparation of the City Board.** Place the game board in the centre of the team. The four destinations (park, school, supermarket, and library) are provided and freely placed in the spaces on the board. Traffic signs to be placed on the board are also selected.
- 5. Destination Selection.** Each group receives a card with a specific destination on the board (e.g., reach the park). At this stage, they must plan their route from the starting point to the destination.
- 6. Algorithm Design.** Some members of the group will act as programmers and create a sequence of instructions using the movement cards (move forward, turn, stop). They must ensure that actions respecting the traffic signs are included as they plan their route.
- 7. Programming and Execution.** Other members of the group will act as the "citizen robot" and follow the programmers' instructions. The rest of the team can help read the instructions and make sure they are followed correctly.
- 8. Interaction with the Signs.** As the robot moves along the board and encounters a traffic sign, the group must stop and discuss about the meaning of the sign.
- 9. Error Correction.** If the robot does not reach the destination correctly, the group should identify where the error occurred in their programming and adjust the instruction sequence to try again and improve the route.





Suggestions

- Include additional signs and rules.
- Integrate traffic lights.
- Use more than one "citizen robot" to avoid intersections.
- Complement the activity with digital resources such as apps or videos illustrating road safety.



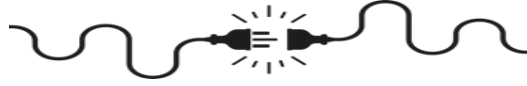
Resources

- **Human:** Teacher and students.
- **Material:**
 - A game board simulating a city.
 - Five "Citizen Robots" in different colours for each group.
 - Traffic sign cards.
 - Movement instruction cards.



Space: Classroom or a future classroom (or robotics workshop).

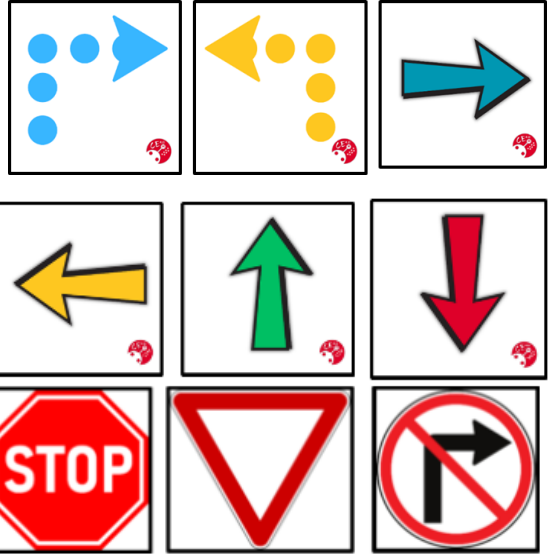
Type of activity: Small group.



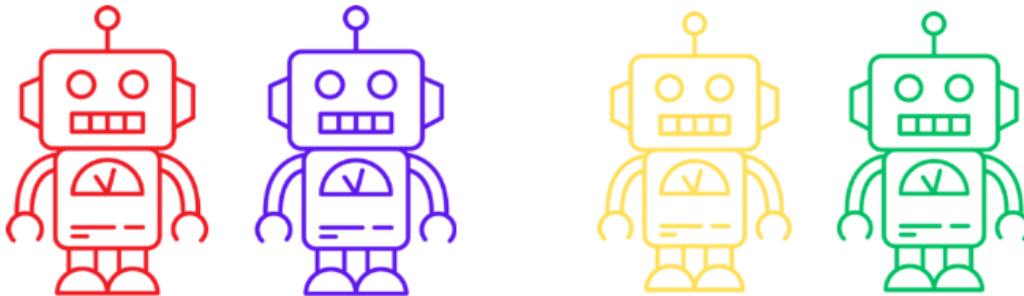
CITY BOARD

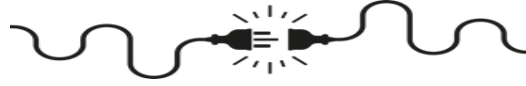


ARROWS AND SIGNS



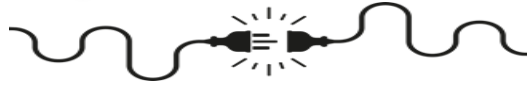
CITIZEN ROBOTS





What have we learned?

Assessment Criteria	4 Excellent	3 Very good	2 Satisfactory	1 Needs improvement
Understands and explains the meaning and importance of traffic signs on the route.	Clearly explains the meaning of each sign and its importance for road safety independently.	Explains most of the signs and their importance with minimal assistance.	Recognises some signs but needs help to explain their importance.	Does not recognise signs or understand their importance in road context.
Programs the robot to correctly reach the destination, adhering to traffic signs.	Designs an error-free route that respects all signs, reaching the destination.	Designs a route that respects most signs, with minor errors.	The route has multiple errors, and some signs are not followed correctly.	Does not reach the destination or does not respect signs on the route.
Participates actively in planning and group discussions to achieve a successful route.	Actively participates, providing ideas and helping the group consistently.	Participates in most discussions and collaborates adequately	Participates minimally, without contributing ideas regularly.	Does not participate or avoids group collaboration.
Identifies and corrects errors in the programming sequence.	Independently and effectively detects and corrects errors.	Detects some errors and corrects them with slight assistance.	Detects errors but requires help to correct them effectively.	Does not detect or correct errors in programming.



Computational Thinking

Logic (prediction and analysis): thinking to make predictions, solve problems and make decisions based on available information.

Algorithms (steps and rules): is a step-by-step process that solves a problem or completes a task.

Decomposition (breaking down into smaller parts): breaking down problems into smaller and more manageable parts, which are easier to understand and solve.



More information

En esta plataforma



puedes acceder a más recursos [“Informática sin un ordenador”](#)

QR codes to the activity resources



Citizen Robots and arrows



City Board