Learning Situation

True True recycle ♻

Cycle: First. **Course:** Second.

Curricular Areas: Social Sciences, transversally Mathematics, Art Education, Spanish Language and Literature.

Timing: Any quarter.

Number of sessions: Seven sessions.

Introduction

This Learning Situation is proposed to mobilize knowledge, skills and attitudes related to appropriate lifestyles, the responsible use of water, safe and healthy mobility, and the prevention and management of waste, included in the 'Social and environmental awareness' block of the First Cycle of Social Sciences of the Primary Education curriculum of the Community of Madrid.

In particular, this resource is proposed to work on the separation of waste at home for subsequent recycling and the raw materials recovery cycle.

In a transversal way, some of the proposed activities reinforce content from other areas, such as Mathematics, Art Education and Spanish Language and Literature.

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Didactic Guide

1) The first work proposal of this Learning Situation is proposed as a board game for teams of 4 students, starting from an A3 size board with printed routes along which the True True robot will move.

   - At one end of the board there will be the exit and at the opposite end there will be 4 colored containers for waste separation: blue, yellow, green and brown.
   - In addition, we will have a deck of cards with waste to recycle that can be of 4 types: paper, packaging, glass and organic.
   - To play, a team draws a random card with a waste to recycle and that team has to program the True True robot to take the card they have dealt to the recycling bin that corresponds to it.

   1st session

   Explanation of the proposal. Preparation of materials to play with the board: board, colored recycling containers, deck of cards with waste to recycle and costumes for the True True robot. Distribution of tasks among students.

   2nd and 3rd session

   Testing the game with the board. When drawing a card for a team, you will have to program the True True robot to take the waste shown on the card to the corresponding container. The process is repeated to internalize the procedure.

2) The second work proposal aims to delve deeper into the circular path that recyclable waste follows until it once again becomes raw materials for manufacturing products and the linear path that the rest of the non-recyclable waste follows.

   To do this, we will work with 5 A3 size boards, one for each type of waste, and the True True line follower function will be used.

   - Students will work on the journey of the products from when they are purchased in the store using the boards and support sheets included.
   - Subsequently, each group will be assigned an everyday waste (plastic bottle, sweeping dust, baby diapers, used notebook, etc.) and they will have to investigate its origin and management and make a brief presentation to the rest of the class.

   4th session

   Work with the boards of the different waste management cycles and the support sheets.

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5th session

Research on domestic waste corresponding to each group and preparation of exhibitions.

6th session

Exhibitions and group evaluation.

7th session

Individual evaluation.

General Stage Objectives

This Learning Situation contributes to developing the following general objectives:

a) Know and appreciate the values and norms of coexistence, learn to act by putting yourself in the place of others, prepare for the active exercise of citizenship and respect human rights, as well as their participation in a democratic society..

b) Develop habits of individual and team work, effort and responsibility in studying, as well as attitudes of self-confidence, critical sense, personal initiative, curiosity, interest and creativity in learning and entrepreneurial spirit.

c) Acquire skills for the peaceful resolution of conflicts and the prevention of violence, which allow them to function autonomously in the school and family environment, as well as in the social groups with which they interact.

e) Know and use the Spanish language appropriately and develop reading habits.

g) Develop basic mathematical skills and begin solving problems that require carrying out basic calculation operations, geometric knowledge and estimations, as well as being able to apply them to everyday life situations.

h) Know the fundamental aspects of Natural Sciences, Social Sciences, Geography, History and Culture.

i) Develop basic technological skills and begin using them for learning, developing a critical spirit regarding their operation and the messages they receive and create.

j) Use different representations and artistic expressions and start building visual and audiovisual proposals.

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Specific Objectives

- Identify the different types of waste produced at home, classify them according to established categories (paper, packaging, glass and organic) and recognize them as raw materials for later useful use.
- Understand the raw materials recovery cycle that is carried out with each type of waste for the manufacture of new products and assess its importance.
- Work as a team in an active, participatory and tolerant way, collaboratively carrying out a series of ordered and organized tasks to achieve a previously established goal.
- Use creative thinking to solve a programming problem using a sequence of commands so that the True True robot follows a planned geometric path.

Specific Competencies	Evaluation Criteria	Basic Knowledge
2. Identify the causes and consequences of the human intervention in the environment, from social, economic, cultural points of view, technological and environmental, to improve the ability to face problems, search solutions and act on their resolution by promoting respect, care and protection of people and the planet.	2.1. Show appropriate lifestyles and value the importance of respect, the care and protection of the elements and beings of the planet, identifying the relationship of people's lives with their actions on the elements and resources of the environment, such as soil and water.	Block: Social and environmental awareness. - Knowledge of our environment. Natural landscapes and humanized landscapes, and their elements. Human action on the environment and its consequences. - Social and environmental responsibility. Actions for the conservation, improvement and use of common goods. Animal abuse and its prevention. Practices respect towards the closest environment. - Adequate lifestyles. The responsible use of water, safe and health mobility, and waste prevention and management.

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Methodology

In the development of this learning situation, various teaching methodologies have been selected with the purpose of creating an educational environment that is both dynamic and effective.

The methodological approaches chosen for their ability to actively engage students and promote meaningful learning are described below:

- **Learn by doing:** This methodology is based on constructionism, according to which students learn by creating artifacts. By actively engaging in carrying out projects, students develop practical skills and better understand theoretical concepts.
- **Challenge Based Learning (CBL):** With this methodology, challenges are posed to students that they must solve by obtaining a final product. This approach encourages critical thinking, creativity, and problem-solving skills as students must apply their knowledge to overcome specific challenges.
- **Peer Tutoring:** It consists of the grouping of heterogeneous students who work in a coordinated manner to solve a task. This method promotes collaboration and peer learning, allowing students to benefit from the strengths and knowledge of their peers.
- **Cooperative Learning:** In this methodology, students work in small teams to achieve common goals. Each member of the group has a specific role and positive interdependence, individual responsibility and the development of social skills are encouraged.
- **Project Based Learning (PBL):** Students work on long-term projects that integrate multiple areas of knowledge. This approach allows students to explore topics in depth and develop research, planning and execution skills.

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Groupings

Throughout this learning situation, activities with different types of grouping are proposed:

1. Small group: Groups of 3 or 4 students work together on specific projects or tasks. Facilitates communication, cooperation and the development of social skills.

2. Class group: The entire class participates in a joint activity, such as discussions or reflections. Encourages participation and critical thinking.

3. Cooperative groups: Students work in teams with assigned roles to complete a task. Promotes shared responsibility and teamwork.

Spaces

This learning situation can be carried out in any of the following spaces:

1. Classroom. 2. Computer room. 3. Classroom of the future.

Features

Personal	Materials	Digital
Teachers: professors and teachers who guide and facilitate learning. **Students:** classmates who collaborate and learn together.	**Printed resources:** game boards, recycling cards, programming cards and True True robot costumes. **Office supplies:** pencils, pens, paper, scissors, glue, etc.	**Technological resources:** True True robots. Tablet or PC. Programs to make presentations.

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Assessment

To adequately evaluate the Learning Situation, procedures, evaluation activities and instruments have been established that faithfully reflect the stated objectives and competencies.

Assessment not only measures student progress and achievement, but also provides valuable baseline information and allows adjustment and improvement of the teaching process. These aspects are detailed below.

Procedures	Evaluation Activities	Instruments
– Questionnaires. – Direct observation. – Oral exchanges. – Student productions. – Self-assessment. – Co-evaluation.	– Digital file – Daily participation – Assembly and sharing – Activities	– Rubrics with rating scales – Checklists – Self-assessment traffic light – class diaries

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Teaching Evaluation

Evaluation rubric for the teacher

(Link to downloadable document)

Item evaluated	Excellent	Satisfactory	Improvable	Insufficient
Classification of the different types of waste produced at home.	Distinguish autonomously (10)	Distinguish with some help (7.5)	Distinguish with a continuous guide (5)	He has not been able to do it (2.5)
Understanding the recovery cycle of each type of waste.	He would be able to explain it (10)	He could explain it with help (7.5)	He understood it but couldn't explain it (5)	He didn't understand it (2.5)
Teamwork in an active, participatory, tolerant and orderly manner.	Collaborates, coordinates with the group and performs their tasks (10)	He lacks coordination with his group, but he does his tasks (7.5)	Collaborates little, does not coordinate and leaves tasks undone (5)	Does not collaborate and does not perform necessary tasks (0.2.5)
Using computational thinking creatively to solve a programming problem.	He is capable of programming any of the proposed sequences (10)	He is capable of programming any of the proposed sequences with help (7.5)	He is capable of programming some of the proposed sequences with help (5)	He is not capable of programming any of the proposed sequences (2.5)

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Student Evaluation

Individual Test:
At the end of the activity, students are proposed to take a test to check the degree of knowledge obtained through the development of the activity.

(Link to Test)

Individual self-assessment of the learning situation:

(Link to downloadable Document)

Aspects to evaluate	Assessment
Classification of the different types of waste produced at home.	
Understanding the recovery cycle of each type of waste.	
Teamwork in an active, participatory, tolerant and orderly manner.	
Using computational thinking creatively to solve a programming problem.	

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Activities

Session No.	1
Timing	1 session.
Activity Type	Class group. Teams of 4.
Description	Explanation of the proposal. Preparation of materials to play with the board. Board, colorful recycling containers, deck of cards with waste to recycle and costumes for the True True robot. Distribute the tasks among the students.
Resources	Recycling containers Deck of cards to recycle True True model track - PDF version - SVG version Costumes for True True - Colored - Blank

Session No.	2 and 3
Timing	2 sessions.
Activity Type	Teams of 4.
Description	Testing the game with the board. A card is drawn for a team that will have to program the True True robot to take the waste shown on the letter to the corresponding container.
Resources	The same as in the previous session

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Session No.	4
Timing	1 session.
Activity Type	Teams of 4.
Description	Work with the recycling path boards using the True True line tracker function and support tokens.
Resources	Packaging board Organic board Paper board Glass board Waste board Packaging sheet Organic sheet Paper sheet Glass sheet Waste sheet

Session No.	5
Timing	1 session.
Activity Type	Teams of 4.
Description	Preparation of presentations on the corresponding waste: origin, use, management process...
Resources	Presentation program and Internet connection.

Session No.	6
Timing	1 session.
Activity Type	Group and Individual.
Description	Exhibitions and evaluation
Resources	Presentation program and Internet connection.

Session No.	7
Timing	1 session.
Activity Type	Individual.

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Description	Assessment
Resources	Evaluation rubric for the teacher: (Link to downloadable document) Individual Test: (Link to Test) Individual self-assessment: (Link to downloadable Document)

Attention to student differences

To ensure the inclusion and success of all students, it is essential to follow the principles of **Universal Design for Learning (UDA)** to adapt tasks and activities to the diverse characteristics of the students and implement flexible and personalized strategies that respond to their individual needs.

Below are the DUA guidelines and measures that have been applied:

- **Location or grouping of students in the classroom:** Students who need more support will be near the teacher to receive additional instructions. In group tasks, heterogeneous groupings will be sought to promote peer learning.
- **Type of task products:** The activities to be carried out are diverse, which allows the assignment of tasks that best adapt to the abilities and preferences of each person. In the activity of sessions 4 and 5, students can choose between creating a document, a digital presentation or a poster.
- **Resource design:** The resources clearly offer multiple forms of representation, as well as multiple forms of action, expression and involvement to adapt to the preferences of the students.
- **Reconsideration of items in the rubrics for evaluation:** The evaluation rubric can be modified to include specific criteria tailored to each person's needs.
- **Variation in the weighting of the qualification criteria:** Qualification criteria are adjusted according to individual capabilities. For example, for a student with difficulties in written expression, more weight may be given to the oral part of the presentation.
- **Reinforcement of basic knowledge:** As additional materials to address

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the contents, the following videos can be used:

- How to recycle? - Complete recycling guide - Algohayquehacer
- True True Complementaries 02 - Basic movements - Complubot
- True True Complementaries 03 - Grid Movements - Complubot
- True True Complementaries 04 - Line tracking and music - Complubot

- **Reconsideration of the level of demand for basic knowledge:** Expectations should be adjusted according to individual capabilities, for example, knowledge of the recycling cycle.

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