Co-funded by the Erasmus+ Programme of the European Union

# AutoSTEM lesson plan example 3

| | |
|---|---|
| *Title of your project lesson* | **Movement, energy and environmental protection** |
| *The Children*<br>• *Age* | *11 years (4th grade)* |
| *Learning Objectives* | • To make a comprehensive summary and consolidation of what has been learned on the topic "Movement, energy and environmental protection"<br>• Students to acquire practical skills for designing and manufacturing a product, through group activities under the project "Making a model of a car driven mechanically."<br>• Combining intellectual activity with practical work in a group to apply, consolidate and summarize what has been learned. |
| *Automata to be constructed* | The Eco-Car 1 |
| *Resources* | Colored paper, scissors, cardboard, pencils, felt-tip pens, rubber band, glue gun, wooden skewers, wooden sticks (ice cream sticks), plastic bottle caps |
| *Cross-curricular links* | Technology, Men and Nature, and Ecology |
| *STEM content* | Making a model of a car, mechanically driven by means of an elastic band |
| *The script*<br><br>*Expected project results* | The student<br><br>• Recognizes different materials, lists their purpose, their durability and recyclability; |

**AutoSTEM 2018-1-PT01-KA201-047499**
The project AutoSTEM has been funded with support from the European Commission. This document reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

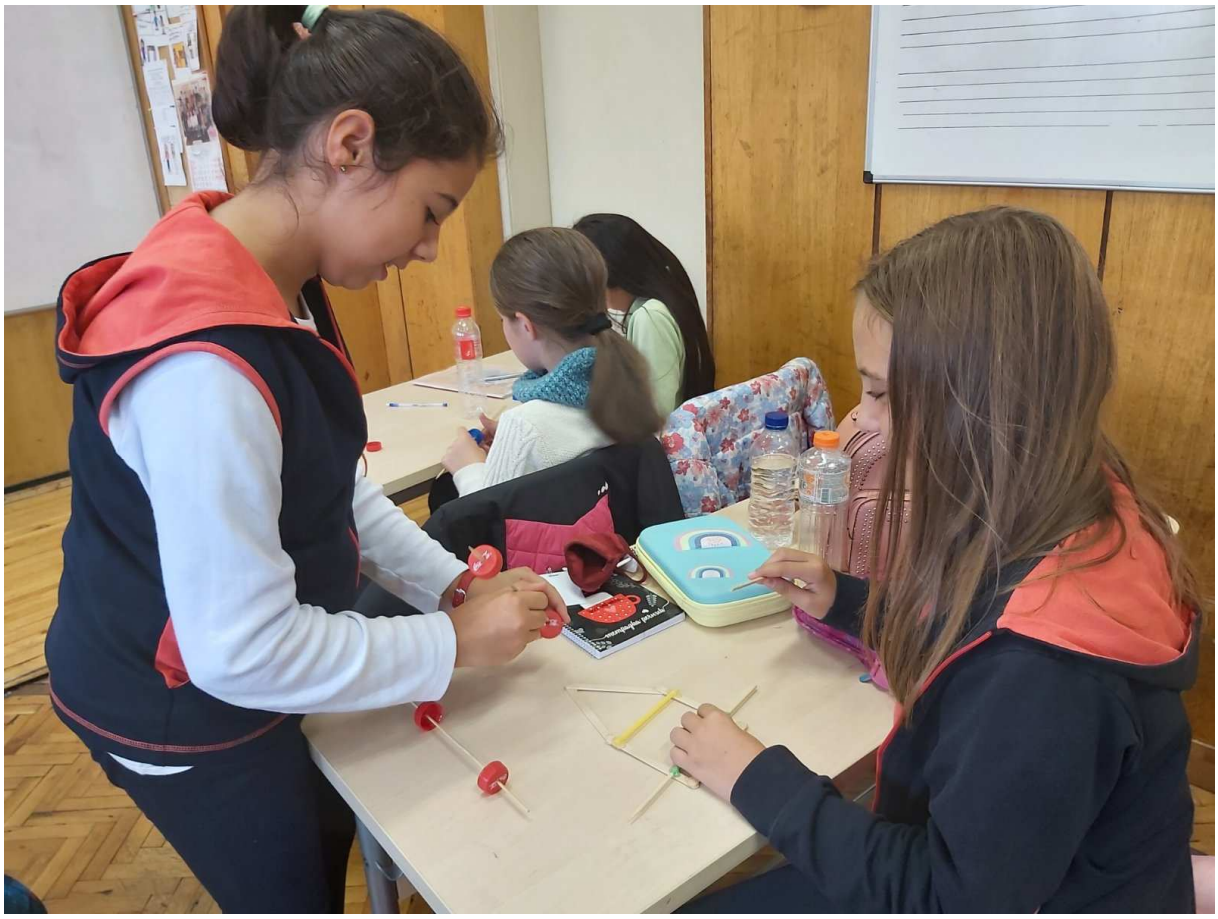
| | |
|---|---|
| | • Lists and explains the possible dangers in the processing of various materials;<br>• Knows the rules of teamwork;<br>• Implements activities and operations for processing various materials |
| *Activity description, plan* | 1. What do I know about energy and what does it do for people? - talk.<br>a. Types of energy;<br>b. Which types of energy do not pollute nature?<br>2. What energy sources are used to drive appliances and machines?<br>3. Forms of energy that children know and use in everyday life - mechanical, thermal, light, chemical, etc.<br>4. Where, what, how and why? Alternative energy sources. How to use clean energy and not pollute nature?<br>5. I can make a model of a car from recycled materials, which moves without polluting nature - a practical task through group project activities. The children are divided into teams. The children make the models, try them out and a competition can be organized - which stroller travels the longest distance by means of an elastic band. Observe safety rules for the manufacture and testing of models. After the completion of the practical work, photos of the model and the stages of production are taken in order to present to the students the sequence of activities.<br>6. Summarizing, analyzing and evaluating the work on the topic of the lesson.<br><br>Teacher's activity:<br><br>1. Organizes an exhibition of the made models of cars. |


The project AutoSTEM has been funded with support from the European Commission. This document reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

| | |
|---|---|
| | 2. Directs to the evaluation and self-evaluation of the students' activity, according to the following evaluation criteria:<br>a. observation of the technology,<br>b. completeness of the products,<br>c. aesthetic appearance,<br>d. satisfaction with the achieved results<br>3. Congratulates the students on a job well done.<br>4. Photographs the models and sends the photos to the parents.<br><br>Student activity:<br><br>1. Discusses the end result of the activity.<br>2. Evaluates the manufactured products and self-evaluates his work.<br>3. Cleans the workplace.<br><br>Question to students:<br><br>1. Each student to give examples of different energy sources to drive different appliances, machines and vehicles?<br>2. Why use recycled materials?<br>3. Can we use only materials that do not pollute nature to make our product environmentally friendly - such as wood and paper? |
| *Criteria for assessment and self-assessment* | Criteria for evaluation of the made model are:<br><br>• observance of the technology,<br>• completeness of the products,<br>• aesthetic appearance,<br>• satisfaction with the achieved results. Do they fulfill their main purpose of moving well? |


The project AutoSTEM has been funded with support from the European Commission. This document reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Co-funded by the
Erasmus+ Programme
of the European Union



**AutoSTEM 2018-1-PT01-KA201-047499**
The project AutoSTEM has been funded with support from the European Commission. This document reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.