

Lesson Scenario

no.8

BASED ON THE STEM
LEARNING CONCEPT AND
METHODS OF NON-FORMAL
EDUCATION

ABOUT

The STEM concept is an educational idea concerning the subjects of Science, Technology, Engineering and Mathematics. Rather than dividing them into separate curriculums, as in the traditional system, the new concept focuses on an interdisciplinary approach. This way promotes finding connections and is more in touch with modern labour market.

The STEM approach is based on activating pupils in the classroom and providing a "hands-on" experience which enables young people to learn based on their own findings. This project based style creates also a chance to develop soft skills and practice cooperation, group work and problem solving abilities. Combining the STEM idea with non-formal learning methods promotes self-awareness about personal development, builds confidence and, above all, fosters motivation through curiosity.

BOTTLE ROCKETS

In this team exercise, students divided into small groups, build their own rockets from empty 2 litre plastic bottles. Next they launch them using air pressure and a simple water valve.

For whom?	7th / 8th Grade
How much time do you need?	2 x 45 minutes
What will you learn?	Newton's laws of dynamic Gravity Storing and releasing energy Properties of air
What soft skills will you develop?	Problem solving Creativity Group roles Task division
What do you need?	Empty 2 litre plastic bottles Cardboard Bicycle pump Water PVC pipe rocket launcher pad

INSTRUCTIONS

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01.

Divide the class into small groups

02.

Each group experiments with launching a bottle using air pressure

03.

Groups refine their designs

04.

Each group works on the visual side of their rockets

05.

Lift-off time! Launch your rockets and measure which design worked best

06.

Discuss the forces that influence the effectiveness of your rockets

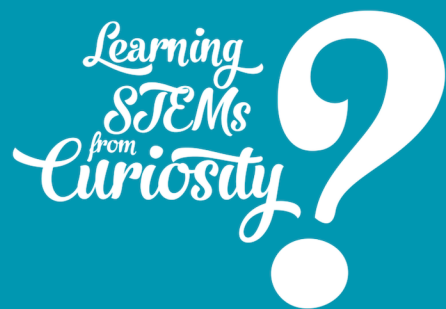
This lesson scenario was prepared by the participants of an Erasmus+ Youth Exchange Project titled Learning STEMs from Curiosity.

Participating Organizations:

Stowarzyszenie Przyjaciół Szkoły Podstawowej nr 1 w Barczewie

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For more information and resources please visit the project website by scanning the QR code below.



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