# Activity 24. Task Preferences! (EUC from STING project)

1. **Learning outcome(s):**(list up to 3)
   * 1. To highlight the nature of a task by considering its strengths and weaknesses in relation to gender balance in STEM activities.
     2. To learn about the different parts of a vacuum cleaner, hair dryer or toy car.
     3. Το learn about electric circuits and the direction of current, how to use batteries, small motors and (design) fans.
2. **Relation of activity with the STEM, gender inclusiveness and Entrepreneurship:** (text, not bullets, explaining the relation of the activity to 3 above)

This is an activity to make teachers aware of the varied preferences of students whilst involved in making decisions for classroom tasks. In this activity, participants are asked to solve a problem by developing and improving a technology. They are asked to design and build their own vacuum cleaner, hair dryer or toy car. The participants generate creative solutions to a challenging problem and work like engineers. These tasks focus on STEM (Science, Technology, Engineering and Mathematics) practices and the relationships between STEM practices and concepts. Through such practical real-world connections, students have an opportunity to see how STEM is part of their everyday world.

1. **Indicate the area of focus:**

**☒ STEM**

**☐ Gender inclusiveness**

**☐Entrepreneurship**

1. **Materials:**(including ppts, videos, hands-on material)

* Pencil and paper for each participant
* Small motors 1,5-3V
* Batteries 4,5V or 3x1,5 V
* 3 x AA Battery Box
* Solid Core Wire
* Solid Core Wire resistance
* Plastic bottles from 0,5-2 litre and plastic bottle lids.
* Paper fasteners.
* Paper clips.
* Wire strippers.
* Pieces of cardboard 10 x 10 cm.
* Debris from a hole puncher.
* Glue pistol.
* CDs.
* Thick wood sticks or lollipop sticks

1. **Preparation:**None if solely performed as a design exercise, although if actual materials will be used, these materials should be prepared before implementation.
2. **Duration:**60-90(minutes)
3. **Target group:**10-15 years old (student age)

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1. **Description of the activity:**

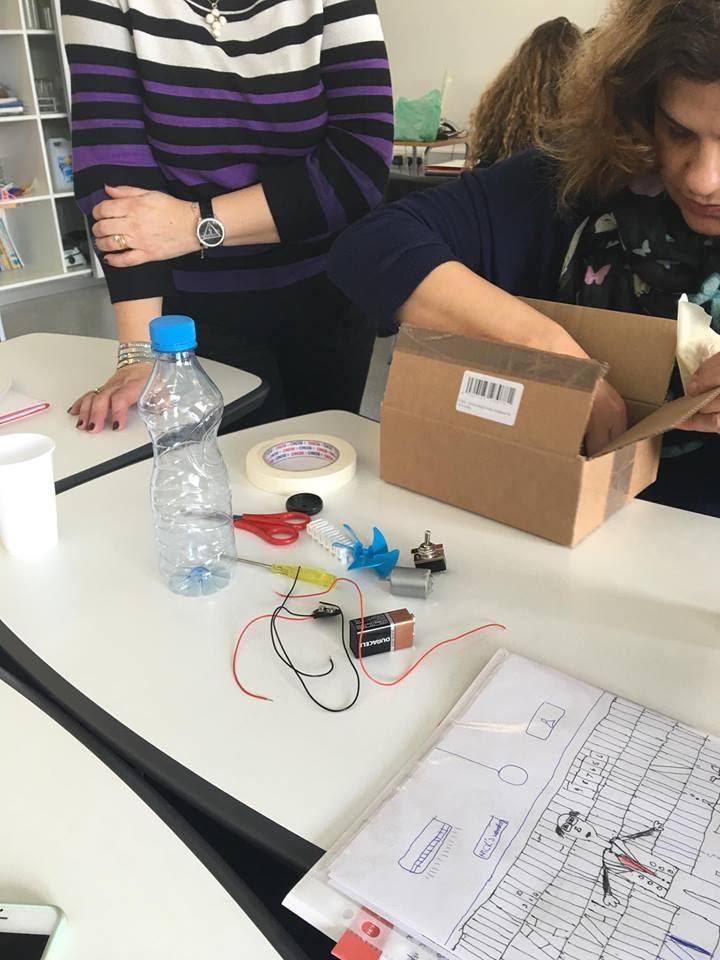
Group work - Groups of 4-5 students.

• Brainstorming: inquiry, planning and design, and drawing on a sheet (15 min).

• The building of a chosen artefact (30 min).

• Presenting their design/actual artefact to their classmates (15 min).

The activity ends with a plenary discussion. We explain students that when designing new items scientists often run a SWOT Analysis. We explain what SWOT means (Strengths, Weakness, Opportunities, Threats) and we have each group run a SWOT analysis for their design.

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**9. Link to curriculum:**