ROBOSTEM Project

Agreement no: 2019-1-RO01-KA202-063965

Lesson Plan "Platform Arduino – Using a DC motor"

Topic: Platform Arduino – Using a DC motor
Subject: ICT

Target Group:

VET students, aged between 12 - 15.

Objectives:

Obj1. To provide a basic understanding of using a DC motor in Arduino
Obj2. To practice how to create a small fan using a DC motor and an Arduino board

Approach/Methodology used: This lesson focuses on teaching VET students about using a DC motor in Arduino. The teacher will use a PowerPoint presentation to lecture on the explanation of using a DC motor in Arduino, showing how to create a small fan using a DC motor and an Arduino board. Next, the students are involved in a problem-based learning activity where they put into practice what they have learnt.

Means/Tools/Educational technology

- A projector or interactive whiteboard and a computer with the software needed for running the PowerPoint presentation.
- Problem-based learning (PBL) template
- Computers and Arduino SW
- Arduino Board
- Breadboard
- DC Motor and Fan
- Transistor
- Diode
- 2.2k Ohm Resistor
- Jumper Wires
- USB Cable

Plan for work

Time	Activities	Methods/ means
10 min.	Use a PowerPoint presentation to introduce explanation of using a DC motor in Arduino, showing how to create a small fan using a DC motor and an Arduino board.	Lecture / Projector or interactive whiteboard

20 min.	Prepare the students for the problem-based activity. Form teams of 3-4 students, hand them the PBL template. Ask the teams to use a DC motor in Arduino. Supervise and support the teams while they are creating a small fan using a DC motor and an Arduino board.	Collaborative work; PC/Arduino SW / PBL template/ usb cable, 220Ω resistor, DC Motor and Fan, Transistor, Diode and jumper wires
15 min.	Ask the teams to either present their results to the class or to another team.	Classroom discussion

Assessment/Feedback:

The teacher will evaluate the results prepared by students as well as the presentations of the DC motor created by them in the last part of the lesson.

Bibliography:

- https://www.arduino.cc/