Case Study Title:

Motion Following Motorized Camera Base

Problem Backgound

STEM education requires rigor and focus. It helps in learning critical thinking, increasing science literacy and creates future innovators.
This case study focuses on home security.
It will upgrade the functionality of home security cameras and/or webcams by a motorized stand, which will detect and follow any motion around the camera.

STEM Topics Involved

Physics	■ ■ ■ □ □ □ □ □ □ □
Maths	■ ■ ■ ■ ■ □ □ □ □ □
Biology	■ □ □ □ □ □ □ □ □ □
Chemistry	■ □ □ □ □ □ □ □ □ □
Technology	■ ■ ■ ■ ■ ■ □ □ □ □

Drag and use shape fill

Pedagogic Methods Suggested

- ☐ Lecture
- ☐ Problem Based Learning
- ■ Inquiry Based Learning
- ☐ Project Based Learning
- ■ Direct Instruction
- ☐ Collaborative Based Learning
- ☐ Game Based Learning
- ☐ Story Telling
- ☐ Peer Instruction
- ■ Simulation
- ☐ Role Playing
- ■ Debate
- ☐ Flipped Classroom Approach

Drag and use shape fill

RoboSTEM

Project No. 2019-1-RO01-KA202-063965

This project has been funded with support from the European Commission. The content reflects the views only of the authors, 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

Solution

The lesson needs to be prepared in a proper way, topic needs to be connected to a real world problem. Help the students with indentifying the problem and a way to solve it. If possible, provide a lot of guidance but with instructions. Allow them to make mistakes – it's the best lesson.

Equipment & Materials Required

Arduino UNO & Genuino UNO
Capacitor
LED (generic)
PIR Motion sensor (Generic)
Resistor 220 ohm
Servos (Tower Pro MG996R)

RoboSTEM

Project No. 2019-1-RO01-KA202-063965

This project has been funded with support from the European Commission. The content reflects the views only of the authors, 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

Assembly Instructions

RoboSTEM

Project No. 2019-1-RO01-KA202-063965

This project has been funded with support from the European Commission. The content reflects the views only of the authors, 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

Assembly Instructions

RoboSTEM

Project No. 2019-1-RO01-KA202-063965

This project has been funded with support from the European Commission. The content reflects the views only of the authors, 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