


TITLE: Getting started

LEARNING SCENARIO	
School: GENIKO LYKEIO ALIKIANOU	Duration (minutes): 90
Teacher: STYLIANOS STAVGIANNOUDAKIS	Students age: 15

Essential Idea:	Programming
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Topic:

- ErgoBot Programming

Aims:

- Understanding what a robot is and how it works is part of understanding the modern world.

Outcomes:

- Learn to use the ErgoBot—set the mode, attach the carriage, and connect and pair the ErgoBot using Bluetooth®.
- Interpret motion graphs produced by the ErgoBot.
- View the communication signals sent from the ErgoBot to the programmer.
- Explore the ErgoBot's built-in motion sensors.
- Experiment with constant velocity motion.

Work forms:

- individual work
- work in pairs
- group work

Methods:

- presentation
- discussion
- interactive exercise



ARTICULATION

Course of action (duration, minutes)

INTRODUCTION

The teacher explains and starts a discussion with the pupils:
What is a Robot?
Robots can be programmed.
Turn on the Ergobot.
Pair and connect.

MAIN PART

Topics for discussion

How can a robot, such as the ErgoBot, know where it is or where it is going?

Task

1. Lay a strip of tape on your desk. Mark the origin at 0 m.
2. Label the positive (+) and negative (-) directions.
3. Set the ErgoBot at the origin with the blue headlights pointing in the + direction.
4. Launch the Real-time motion graphs interactive on your project page.
5. Launch the Encoder signals interactive on your project page.
6. Reopen the Real-time motion graphs interactive.
- 7.

Exercise

How does the ErgoBot know where it is?
How does the ErgoBot sense its motion?
Cruise control challenge

The teacher explains and gives instructions on how to solve tasks.
Pupils solve tasks and present their solutions.
Pupils and teachers discuss and evaluate the presented solutions.

CONCLUSION

A robot is a type of machine. The following characteristics defines a machine to be robot:

- A. It is a machine with moving parts.
- B. It is a machine that contains a microprocessor.
- C. It can be programmed for a variety of behaviors.

**Methods**

presentation
discussion
work on the text
graphic work
interactive exercise /simulation on the computer

Work forms

individual work
work in pairs
group work
frontal work

interview
demonstration
role playing

Material:

- Computer, ErgoBot, Ergopedia

Literature

- <https://www.pasco.com/resources/video/FzKjfQOR9vA>

PERSONAL OBSERVATIONS, COMMENTS AND NOTES