

The coordinate system and coding with Matatalab kits

Educational level / Age group	4 th grade
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Learning objectives / aspirations

Exploring and learning to code by using the Matatalab kits

Goals for two teaching hours:

- *Be able to read instructions from the manual*
- *Be able to use the pieces used in the kit*
- *Be able to use coordinates to move the robot*
- *Be able to listen to oral instructions on the topic of coordinate system*
- *Be able to collaborate with other students in the group*

Learning activities - what the learners/students must do.

Use paper and the pencils in the kit.

- *Design a triangle by using instructions and pieces in the kit*
- *Design a square by using instructions and pieces in the kit*
- *Design a house by using instructions and pieces in the kit*
- *Draw an obtuse angle*
- *Draw an acute angle*
- *Draw and design your own figure*
- *Explore the map by using obstacles to create barriers for the robot. Make it move from one place to another by coding the robot*



Narrative overview

Subject: Mathematics and geometry

The class is divided into 5 groups. Each group works 18-20 minutes before there is a change of members in each group. The learners/students must pay attention to when the teachers make a signal for changing groups.

The learners/students also try out other methods to learn geometry alongside the Matatalab kits



Approach to teaching and learning

Approach to teaching and learning

The teachers introduce how to use the pieces in the Matatalab kit and explaining the symbols. The students are divided into 5 groups and follow the learning objectives. The teachers closely support each group

Approach to assessment

The five groups have three or four children in each group. The students are given instructions by the teacher every 18-20 minutes. The time that is left is for exploring further



Roles

Teachers

The teachers give the instructions and set up the groups

Learners

The students/learners operate in groups and support each other along the learning process, coding and programming the robot

Others

Assisting teacher helping children with special needs



Learning environment

Ordinary Norwegian classroom. Eigerøy skole is a completely new school located just outside the city of Egersund, on the southwest of Norway. Check out the website for more information and pictures: <https://eigeroy.eigersundskolen.no/>

The teachers used classrooms and the hall outside the classroom for the learning activities



Learning activities

Using paper and pencils to make the robot draw

Using the map to make the robot move from one place to another, framed as a coordinate system

Working in groups



Possible challenges

Having enough Matatalab kits and the need for more pencils to draw



Resources

The assignment with Norwegian text (check the attachment)

Pictures from the activities (attached)



Literature to support

No extra literature for this assignment