

Multiplication and Matatalab as a game board

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 60 minutes:

- *The learners/students will explore and explain how the four types of calculations are connected and use these connections can be used for appropriate calculations*
- *Use strategic methods for finding these calculations*
- *4 main/core targets: exploration, problem solving, reasoning and dispute*

Learning activities set up as five working stations:

1. *Multiplication mastering on website named "Gangetesteren":
<https://www.matematikk.org/trinn8-10/gangetesteren/>*
2. *Multiplication as Connect Four in a two-player game, played on a gameboard using colours and filling in numbers. The aim is to connect four numbers*
3. *Multiplication on hundred boards – patterns and evidence. The learners pick up numbers from a pile and use a rubber band on the board to make multiplications*
4. *Multiplication relay using a dice and the blackboard*
5. *Multiplication by using the map in Matatalab. Each square has a number, from 0 to 10. It's written in the square with whiteboard marker. Since there are sixteen squares some of the numbers are repeated. On a table there is a pile with numbers functioning as answers when you multiply numbers together. The learners must then code the robot to*

make a route that add numbers to the answer. On each square the learners need to put in a song or a dance. The route must be programmed to have the shortest way possible. After the robot has made the correct route, the learners will pick up a new answer from the pile.



Narrative overview

Subject: Mathematics and multiplication

The class is divided into 5 groups with five or six learners/students in each group. Each working station has a durability of 15 minutes.

The learners/students must pay attention to when the teachers make a signal for changing groups.



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

The teacher in our example started up the math class by underlining the importance of working well together

Approach to assessment

The five groups have five or six children in each group. The students are given instructions by the teacher every 15 minutes



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

Teacher from a kindergarden joined this session and took part in the teaching by explaining the assignment for the learners/students



Learning environment

Ordinary Norwegian classroom. Kvernevik skole - <https://www.minskole.no/kvernevik> is a primary school located in Stavanger, on the southwest of Norway. The school is quite old. It was built in 1970 and then expanded with two new buildings in 1997.

The classroom used in our session was quite old and is mainly used for groups activities. There are no digital screens available in this room. The purpose of this room is exploration, playfulness and learning as a team.



Learning activities

5 working stations, as described above. The learners move from one station to another after 15 minutes.



Possible challenges

Having enough Matatalab kits and enough space to work in stations



Resources

The learning scenario has been adapted from the original template created by the Design FILS project (<http://designfils.eba.gov.tr>), funded by EU's Erasmus+ KA2 (grant agreement 2019-1-TR01-KA201-076567). The publication is made available under the terms of Creative Commons License Attribution–Non-Commercial (CC-BY-NC).



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The assignment with Norwegian text (check the attachment)
Pictures from the activities (attached)



Literature to support

No extra literature for this assignment