Lego programming - WRO

The World Robot Olympiad (WRO) is a learning course in technology understanding and an international competition in the construction and programming of robots. In the Robot Olympiad, they work with two categories: RoboMission and Future Innovators.

Every year there is a new theme for the assignments. The themes are always based on one or more of the UN's Global Goals. With WRO, they want to inspire children and young people to be curious about how technology and natural science can be used in society.

All 3. graders from Munkebjergskolen try to qualify for the finals every year.

We participate in the “RoboMission”
In RoboMission, the participants must build and program a robot that can solve a series of tasks on a time course. The focus is on the following learning objectives:

- General understanding of programming and basic knowledge of robots (control and navigation).
- General engineering knowledge (being able to build a robot that can lift/push objects of a certain size and shape).
- To be able to develop a strategy so that the specific missions can be solved most appropriately.
- Computational Thinking (e.g., experimenting/testing yourself, troubleshooting, collaboration, etc.).

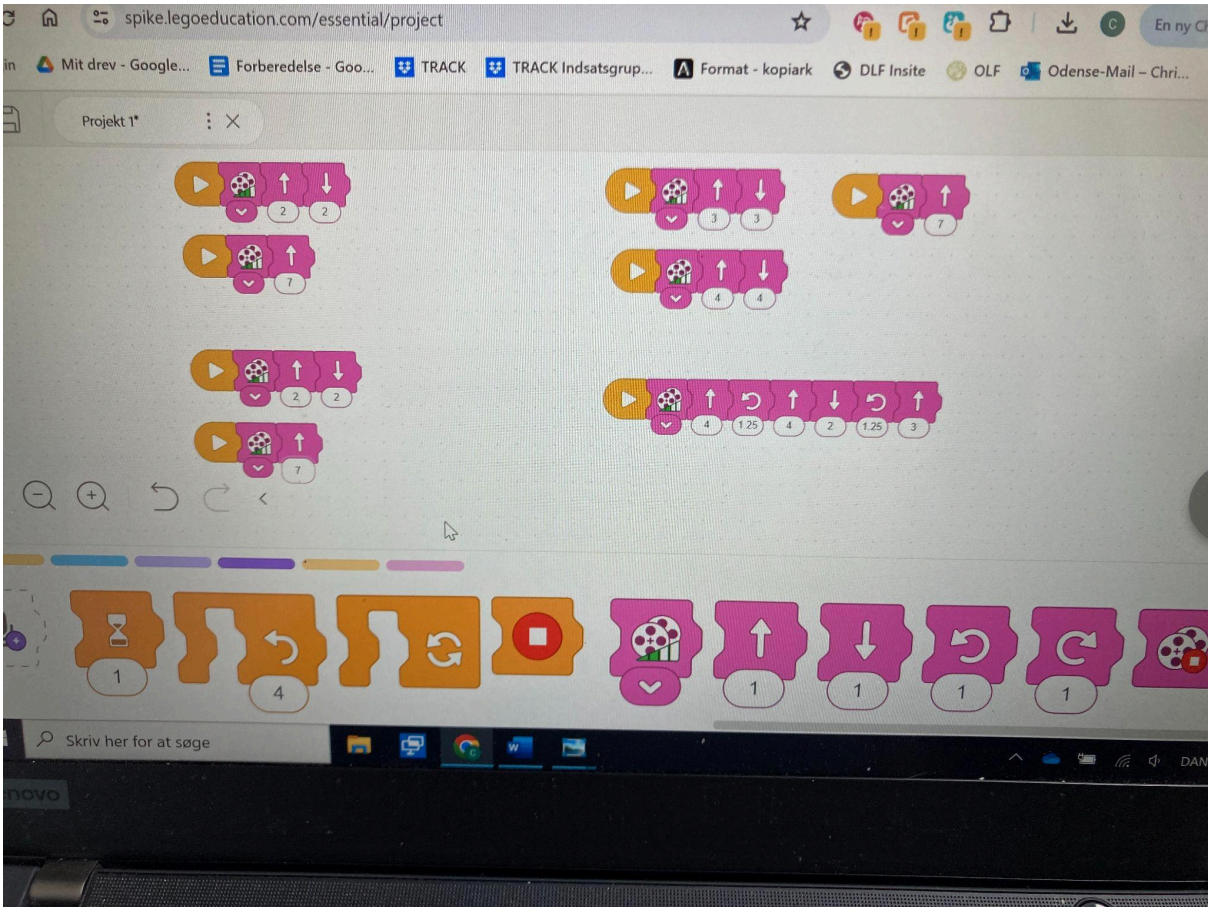
5 teams from each class can qualify and will move on to the finals in Odense, where they have to compete against students from other schools.

Procedure and duration	Activities	Materials
18-20 lessons (45 minutes per lesson)		
The students work in groups of 2	The students are introduced to the course and the 4 tasks at hand. ● Help the polar bear back to land ● Bring water to the hippo ● Put out the fire and drive the deer out of the forest fire ● Clean the sea of plastic and save the turtle	website with rules and points system. https://drive.google.com/file/d/1-A23ixNDAVkht1dnYufQmXVy513h_D_c/view

	Build the WRO basic car WRO - car building instructions: https://drive.google.com/file/d/15e_IaDSGpDelf6Uh5mfsI0tVmQA3TQqt/view	Lego spike boxes. 1 box for 2 students. https://www.lego.com/da-dk/product/lego-education-spike-essential-set-45345 Computers or ipads with the legoeducation app downloaded. https://spike.legoeducation.com/
	Open the program, Homepage of legoeducation https://spike.legoeducation.com/ We chose lego spike →new project→ icon-blocks→ https://spike.legoeducation.com/essential/project To add motion to the chosable blocks pres the block-icon in the right bottom corner and add motion blocks. https://spike.legoeducation.com/essential/modal/extensions connect the car and the coding programme, and code the car to drive, before you work on the design. What does your car need to be able to do the tasks at hand.	https://spike.legoeducation.com/
	Design your car - then start to solve one task at the time. Do it by: build, code, test - adjust design, code, test - adjust coding, test, and so on… when you have a coding that can solve one of the tasks, write the code down on these codingblocks Empty codingblocks:	Empty codingblocks: https://drive.google.com/file/d/1vHJFbPXKvqCRmDRqgagGXTigkJw4mcsb/view

	https://drive.google.com/file/d/1vHJFbPXKvqCRmDRqgagGXTigkJw4mcsb/view	
	The students take turns on the table - practicing their driving. Organized with one group in each corner, after 5 minutes, they move clockwise and after 4 shifts, 4 new groupes take over.	
	Now we run for points. Each task has a certain set of points, and the students now compete to get the most points. The 5 top positions, qualify, and are going to the finals. 1 group, at the time is driving all 4 tasks or as many tasks as possible, earning as many points as possible in 2 minutes.	

KIDS ROBOMISSION
PARKING AREA
PARKING AREA
SAFE NESTING AREA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