

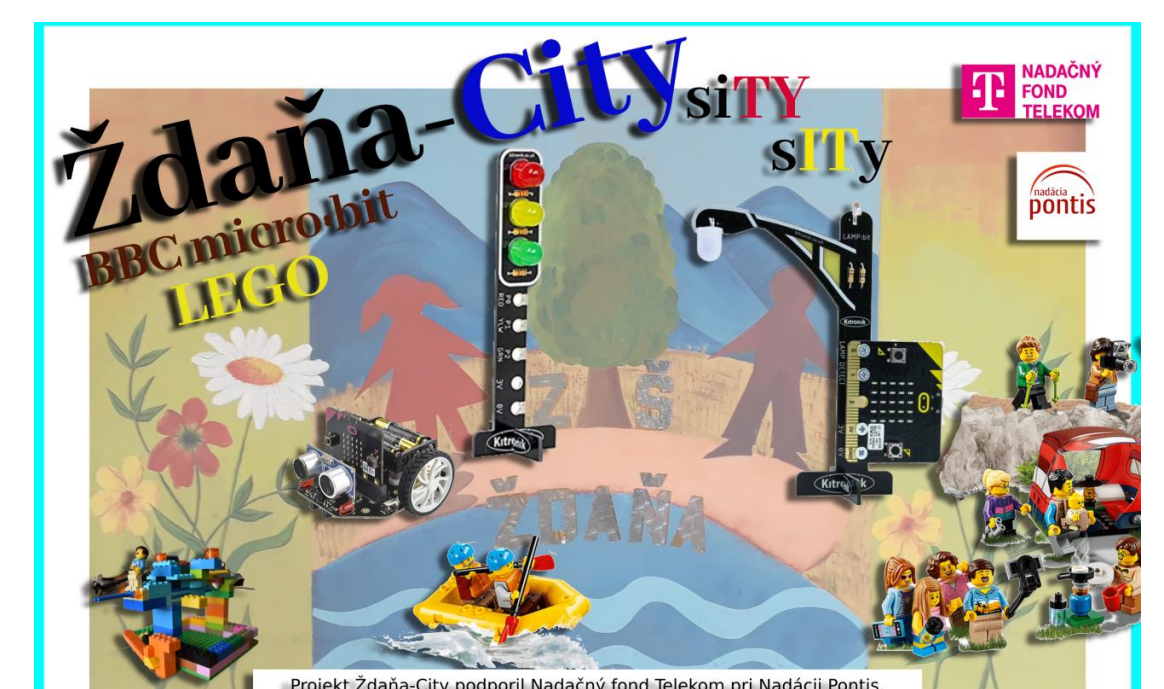
TECHNOLOGIES IN STEM EDUCATION

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Ždaňa Smart City

How Micro:bits help to transform our town to smart city

The Ždaňa Smart City project was created thanks to the ENTER program that enabled to purchase sets of micro:bits and other HW that opened the gates to the world of STEM in an interesting and interactive way. Pupils designed a model of a smart LEGO city coding micro:bits to control various devices and sensors. Pupils were challenged with interdisciplinary problems to apply their knowledge related to computer science, biology, chemistry, physics, civics, traffic rules and music.

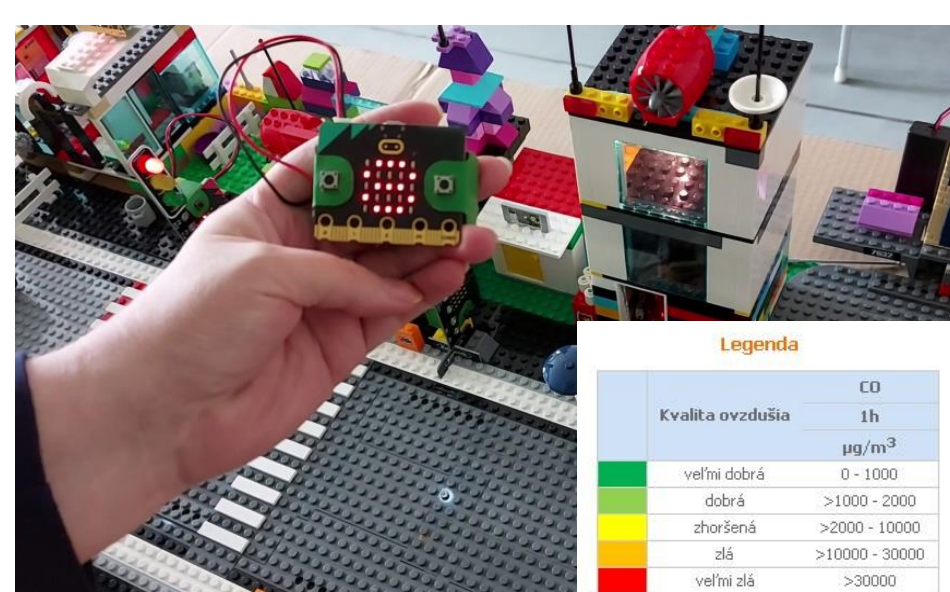
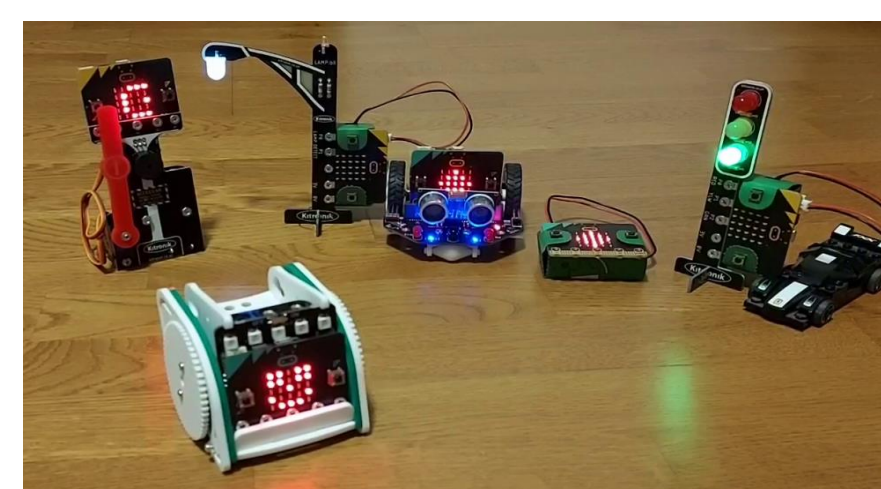


How to use wind to generate mechanical power? Designing wind turbine and fans. Fan switches on when temperature rises about certain level.

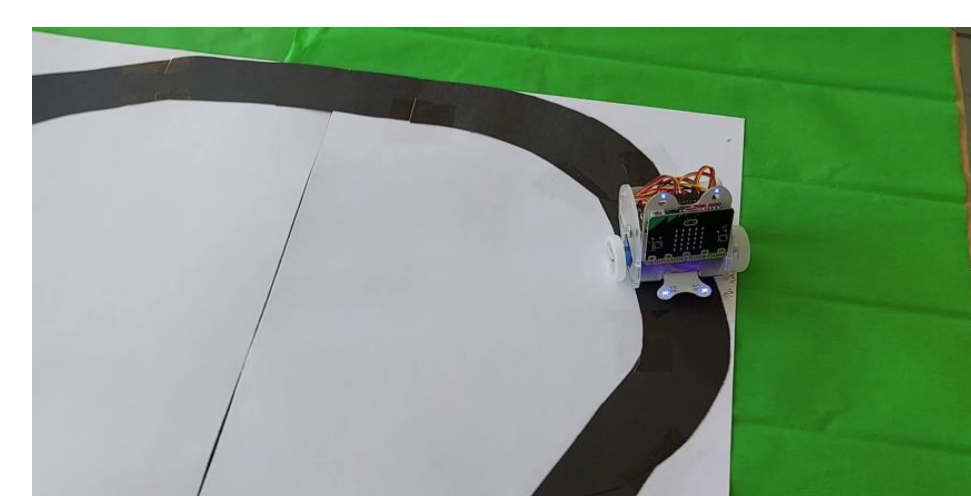
How to water crops, vegetables, plants or lawns? Designing self-irrigation system to control the amount of water to grow plants



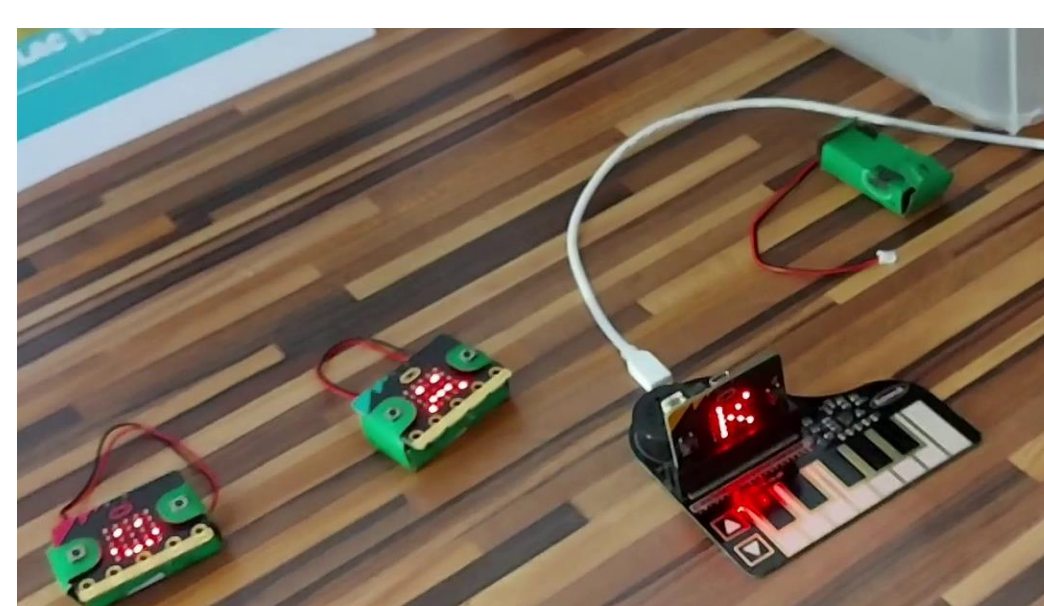
How are traffic lights and other similar devices controlled? Sensors and timers to control traffic lights to cross the street safely, alarms, barriers and lamps to give sound or light signals to produce safety warnings.



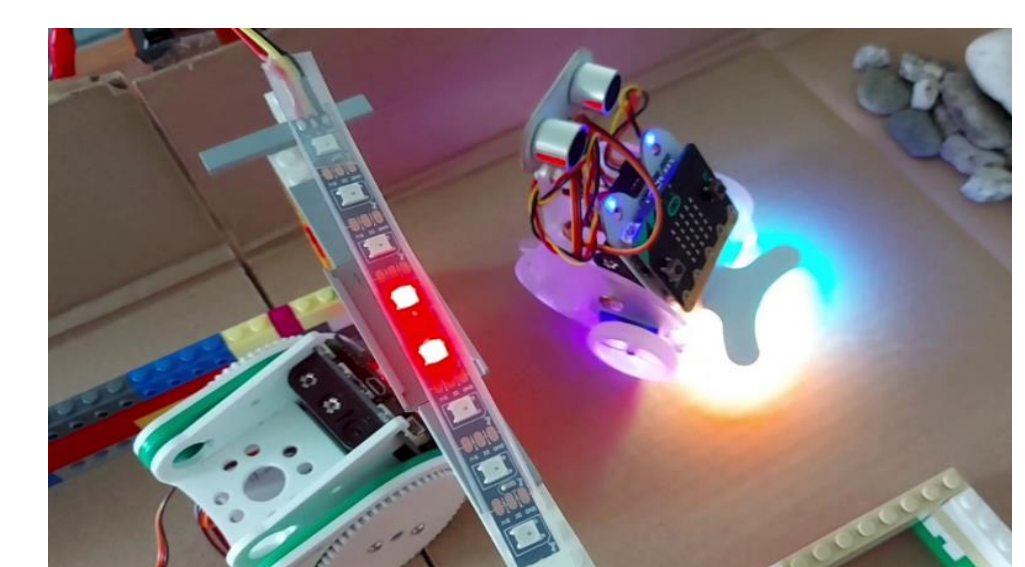
How to monitor air pollution? Compare how clean is the air in city and in forest?



How is sound generated? Designing musical instrument, let's play our own piano.



Robots do not crash, they use ultrasonic sensor to identify locations of surrounding objects. Robots – cheerleader waits for the winning car.



Street lamps are switched on when it gets dark in city



Ring: bit car moves along the drawn path
Which car is the fastest?



STEM EDUCATION has unlimited possibilities.

