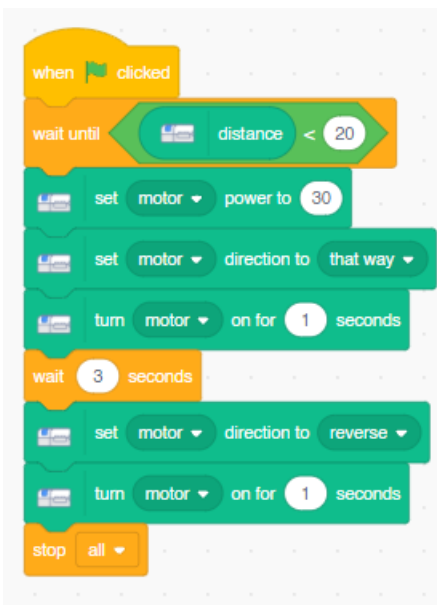## Teachers' Guide

This lesson is an open activity. Students are separated into groups. Discuss with them about the stages of the implementation of a project and when you are on each stage of the project you can discuss about it with your students.

Before they get their sets and start building, ask your students to try to design what they want to build. This is a process that will help them select the appropriate pieces. The final goal is to build a gate that opens and closes, using the motor. Also, they need to build a vehicle that passes through the gate.

A suggested program for the toll gate, that activates using time, is the one below:

Beware that the direction of the motor could be either "this way" or "that way", regarding the building.

A suggested program for the toll gate, that closes with the sensor, is the one below:

It was also suggested to insert the variables. You will show your students how a variable is created on Scratch and you will change the program appropriately, so it counts how many cars have passed through the tolls. You will need to use the block "forever", which you could have used before as well, but then it was not necessary.

A suggested program for the toll gate, using a variable is the one below: