Going the Distance

NXT-G Blocks:
Move block

Activity Summery and Scenario:
Developing fluid knowledge of the capabilities of the move block will save time and headaches. In this challenge students will use the time duration on the move block with a fixed power level to calculate how far the robot will travel. The variables that can be changed are the time duration and how the robot breaks (stop or coast).

After a sufficient amount of data has been collected (10 samples) a secret stopping distance will be announced. Using math to determine the various rates of speed (speed = distance/time) you should be able to then determine the proper amount of time to travel a set distance (time = distance/speed). You may make ONE change to your program. All bots line up and test.

Teacher Preparation:
This activity can be done with no prior knowledge of programming. Decide how the students will select their power level as it should be fixed and you will want a variety of power levels demonstrated (random, assigned, rolled dice math facts, ect.). While initial testing sites can be anywhere within the classroom or hallway the final test should be in one area. We like to set up Lego People at the end of the secret distance. A vehicle testing site can be created by teacher or student for additional connections between safety procedures and industry protocols.

Curriculum Connections:
- Basic math facts required to complete calculations sans calculators.
- Distance required to stop at various speeds

In the Classroom:
Especially when collecting data that requires re-programming I give my students more time than I think it would normally take to complete the task, but I am constantly motivating and pushing them aggressively to finish data collecting and calculating.