| VRIJE ASO.SCHOOL |  |  |
| :---: | :---: | :---: |
| Here we go! The creation of a mechanically controlled car |  |  |
|  | Test your car |  |


| TEAM A2. |  |
| :--- | :--- |
| Pupils Belgium | Pupils Sweden |
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## 1. ORIENTATION

### 1.1. Research questions:

$>$ What will be the average speed of the mechanically controlled car?
$>$ Which changing of parameters has the best result (fastest speed)?
1.2. Hypothesis
(here you only have to make a hypothesis about question 2)
Sweden: (no changes made)
Belgium: We think that the car will start to run fast with small wheels because it takes less time to turn a lap.

## 2. PREPARATION

On the other document (twinspace) you see the sketches and propulsion of the car.

### 2.1. Parameter that will be changed:

(here you describe what you will change to the car)
Sweden: (no changes made)
Belgium: Our change to our car is: we change the wheels from big to small but the car remains the same and the stretcher too.

### 2.2. Method:

2.2.1. Let your car drive and measure the distance that is possible.
2.2.2. Now, for the experiment, choose a distance that is shorter then the maximum distance. Make a sign on the floor on that distance.
2.2.3. Let the car drive and measure the time.
2.2.4. Calculate the average speed.
2.2.5. Repeat this three times.
2.2.6. Now, change a parameter and repeat the whole experiment.

## 3. DATA ANALYSIS and DISCUSSION

### 3.1. Observations and Measurements:

|  | DISTANCE (m) | TIME (s) | AVERAGE SPEED <br> $(\mathrm{m} / \mathrm{s})$ |
| :--- | :--- | :--- | :--- |
| 1 | 1,30 | 1,64 | 0,79 |
| 2 | 1,30 | 1,82 | 0,71 |
| 3 | 1,30 | 1,45 | 0,90 |

Changing of a parameter: (describe what you change)

|  | DISTANCE (m) | TIME (s) | AVERAGE SPEED <br> $(\mathrm{m} / \mathrm{s})$ |
| :--- | :--- | :--- | :--- |
| $1:$ | 1,30 | 1,12 | 1,16 |
| $2:$ | 1,30 | 1,12 | 1,16 |
| $3:$ | 1,30 | 1,08 | 1,20 |


|  | DISTANCE (m) | TIME (s) | AVERAGE SPEED <br> $(\mathrm{m} / \mathrm{s})$ |
| :--- | :--- | :--- | :--- |
| 1 | 0 | 0 | 0 |
| 2 | 1.73 | 3.7799 | 0.4576 |
| 3 |  |  |  |

## 4. REFLECTION

4.1.Conclusion: (here you discuss when the car drives fastest with or without changing)
Belgium: The car drives faster with smaller wheels.
4.2. Comparison of the results of the different countries:

