Speed Trials

Using the tribot or domobot model, you will test different combinations of gears to find the best options for your Dragster.

Fill in the table below with your combinations and timings. Use the Move block at 80% and run for 10 seconds. Run 3 trials at each setting and find the average distance travelled. Use the average to find the speed for each combination. Use the table and your observations to answer the questions below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Driving Gear(teeth)***A*** | Driven Gear(teeth)***B*** | Gear Ratio***A/B*** | Distance Covered (cm)Trial 1 Trial 2 Trial 3 Ave. | Speed Distance/time |
| 8 | 24 |  |  |  |  |  |  |
| 8 | 40 |  |  |  |  |  |  |
| 24 | 8 |  |  |  |  |  |  |
| 40 | 8 |  |  |  |  |  |  |
| 24 | 40 |  |  |  |  |  |  |

What gear ratio gave the slowest acceleration?

What gear ratio gave the fastest acceleration?

What gear ratio gave the slowest speed?

What gear ratio gave the fastest speed?

Which gear ratio do you think you will use for the dragster? Why?