6th Class: Using Lego Mindstorms to Explore Time

BACKGROUND

Sixth class had been doing work in maths on the subject of time and, in particular, the theory of average speed. They had also completed a science/maths lesson on gears and cogs.

The children were tasked with designing, building and coding a drag racer to travel as fast as possible along a 10m track using Lego Mindstorms.

Children had to work out the average speed of the racer after it was timed travelling 10m on its final run.

They were allowed test their racer ahead of the final run and refine design or code where necessary.

TASK

The class was split into groups of three and given a Lego Mindstorms set.

They were shown a sample 3-gear gearbox which had been prepared by the class teacher and allowed to investigate how it worked.

They had to work in a group and draw a design of their "Drag Racer" and then build it.

They were then given time to refine or tweak their designs and code, if necessary. They then timed their racer and worked out their average speed.
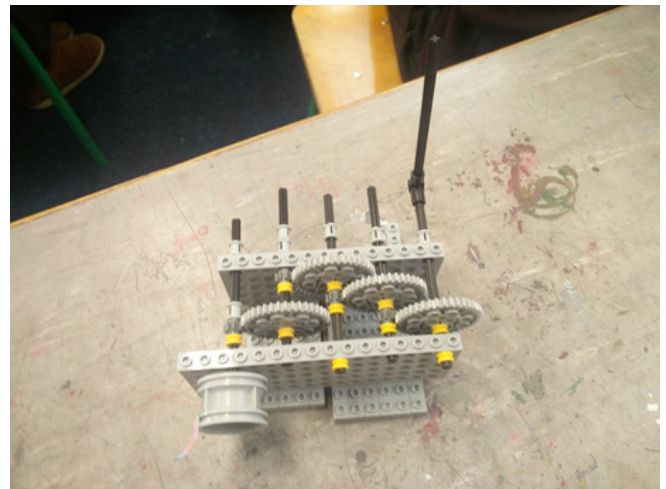
Sample gearbox children could examine and test prior to construction

Children had to design the drag racer ahead of programming; the engineering skills to make their racers was as important as code. Some wrote efficient code but had a poorly designed Drag Racer and vice versa.

Groups had to then debug and refine the code and/or the design of the Drag Racer. In doing this, some of the children made a connection with how the gears on their bikes worked.

Example of racers