

Review:**What is a Lever?****How are gears used?****Lesson: Mechanical Golf Club**

Designing a mechanical golf club may seem easy, however it will be a challenge to hit the minifigure far.

NO Worksheet

This build will be similar to their first and second day challenge, however, instead of throwing the object we will be hitting it.

Important Concept:

Newtons 2nd Law of Motion :Force = Mass multiplied by Acceleration, or $F=ma$.**Force** is like a push or a pull. In this case it will be a push**Mass** is the objects weight, in this case its the weight of the “golf club arm”**Acceleration** is how fast you are able to make the arm spin before it hits the minifigure. Students can use gears to make their project accelerate faster.

Therefore, if the students are able to increase the mass and increase the speed of their swing, they will be able to hit the minifigure further.

Real life examples:

Anybody ever play golf or seen golf clubs?

The “driver” club is usually the longest and heaviest of the clubs and it is used to hit the ball the furthest. And whoever is able to swing the golf club the fastest will be able to hit the golf ball the furthest. Thats if, they hit it correctly!

Challenge 1 - Individual or Team of 2

Engineer a mechanical golf club that can hit a minifigure 5 feet

Challenge 2 - Individual or Team of 2

Engineer a mechanical golf club that can hit a minifigure 10 feet

Ultimate Challenge- Individual or Team of 2

-Engineer a mechanical golf club that can hit a minifigure the furthest!