How might we interact with everyday objects with technology?

By Vicky and Matthew
We wanted to make a game that enabled people to play games in real life, like a VR headset, but using household materials and technology. We then came up with the idea of our Genius Hour project question. At first we wanted to try and make people laugh by making joke machines, but then we thought to ourselves, what if we made a game like COD (Call Of Duty) or Halo. We thought some more and came up with our base idea of a real life fighting simulator. We chose to make a fighting game because majority of online games are sitting and non-movement, a fighting game would get kids up on there feet and moving, if used a lot, making children more active.

Our impact will be on our community if not ourselves and friends. Our project will give young gamers a change play games, but not using phones, laptops, TV’s or using up their parents house data; an ecofriendly game.
We learnt a lot about coding during the making of the game and crafting the tools we needed to make our project. We were doing things we are not familiar with, so there was a lot of trial and error. It ended quite well, but after about four tries we narrowed out what our main problem was, and found a solution.
What challenges did we face?

One of our troubles was finding what we were going to do as a project. We were going to make a robotic arm, but that was too advanced. It would’ve taken us months to finalize the arm and we didn’t have that much time. We were also planning to build a Makey Makey fruit machine. Where a fruit platter would tell jokes when students picked up fruit, it would make the St Marks community more joyful. That was going to be our original project.
What did we make?

For our project we made a fencing game including two fencing rods, and two aluminium foil vests and a total of 12 metres of wire.

In order to make the equipment we needed the following:

+ Cardboard - for the vests
+ Aluminium foil - to catch the electrical current
+ Wire - to connect the Makey Makey and aluminium foil together
+ Small blocks of wood - for the handles of the fencing rod

Some tools / stationery needed were:

+ Pedestal drill
+ Leath
+ Sticky tape
+ Staples
How does the Fencing Game work?

The Fencing Game works through the aluminium foil vests and rods. Each of the vests are covered in aluminum foil and so are the rods. An inch of wire is underneath each of the aluminium foil of the vest, this gives a connection for the electrical current to flow.

The rods are a stick of wood with some wire wrapped around the bottom. The whole stick, except the handle, are wrapped in foil. This is so, when the rod touches the opponent's vest, an electrical current is sent through the foil of the rod to the foil of the vest. On contact, the current goes through the wire, to the Makey Makey, to the Scratch Program and gives the striking opponent a point.

Our link for our SCRATCH Program - Goal Points
The way the Fencing Game works:

- **Sword**
- **Electrical Current**
- **Wires**
- **Vesst**
- **Electrical Current**
- **Electrical Current**
- **Electrical Current**
Rules and Advice for Fencing Game:

**RULES**

+ Stay in marked area
+ First to 5 wins
+ No aiming for face or groin
+ Play fair and no cheating the system
+ Points can and will be deducted for foul play (eg. As hurting people)
+ If you break something you will be helping repair it!!!

**ADVICE**

+ Be careful with the connection of the wires
+ Don’t rush, plan out your attack
+ If you swing your free arm in defence, be VERY careful of the other person's fencing rod
+ Have Fun
Our Scratch Programming

This is what will be shown during the Fencing Game. It is the scoreboard.

The dark oranges are events, the light oranges are controls and the light blue are sensors. So what it’s saying, is when the right arrow is clicked, it changes red teams score up by 1. When the flag is clicked, it will set red team back to 0, and you start the scoreboard again. Same goes for the blue team and left arrow.

This is the lists of codes to make your commands.

These are the codes used to make the scoreboard work.
Our Fencing Game Equipment

Swords
- Matthew's
- Vicky's

Vests
- Matthew's
- Vicky's
What challenges did we face with the equipment?

When we made our equipment, we needed to make some adjustments to the structure of our fencing swords. Some of our foil started to fall off, so we had to fix the blades and the handle.
How did we overcome them?

To overcome our problem, we took our equipment home and drilled larger holes in the handle. We made sure to use extra sticky tape to hold the foil in place, so that it didn’t fall off.

Once we had all of our equipment set up, we finally got to access to the Makey Makey, the main ingredient to our project.
Information about the Makey Makey

The Makey Makey was invented by Jay Silver and Eric Rosenbaum. They created it because they believed everyone is creative, imaginative and inventive, and that everyone can change the future and the world.

The Makey Makey lets children, teens and adults create whatever they like using a control pad, alligator clips, laptop and household materials. You can play Mario on play dough and piano on bananas. The Makey Makey can assist you in making “art, engineering and everything in between.”

The Makey Makey works by channeling the electronic current in all living things. Such as yourself, fruit and the electronic devices you can connect the Makey Makey too.

* Quote from Kickstart - Makey Makey; An invention kit for everyone
How the Makey Makey works

An example often shown to people who don’t know anything about the Makey Makey, is the ‘Apple Bongos’. The way this works is, you connect the alligator clips to the Makey Makey board, and plug the Makey Makey computer cable into your laptop. There is a software specially made for the Makey Makey, (The Link to that website is here). The other end of the alligator clip is to be stabbed into the apple. If wired up correctly, when you touch an apple, the bongos on your laptop screen should make a sound.
Did you know that a huge fraction of your body is made of water, so humans are extremely good conductors of electricity!

“An electric shock from a 240 volt power point can kill you, but on a dry day your car door can zap you with 10,000 volts and just make you swear.” (By ABC News)

“Ever wondered why birds that sit on power lines don’t get electrocuted? If a bird sits on only one power line it’s safe. If the bird touches any part of its body to another line, it creates a circuit, causing electrocution.” (By Heads up)
THANKS FOR READING!

AND ENJOY THE FENCING GAME!
### Websites

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