Grade 9

Electric Car

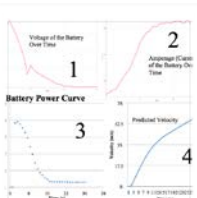
SCIENCE

Driving Question: How do we design and build an electric car?

Project Description:

Students investigate physics and engineering principles to work in teams to design a car powered by electricity. Students used software fusion360 to design a car to print or cut from wood, predict the energy from two lithium-ion rechargeable batteries, power the car with the batteries connected to two motors then analyze the actual car motion with video analysis to determine the forces acting on the car.

上海 Shanghai American School
An International Community



Student Products

- Design of an electric car as well as working prototype
- Data analysis of various tests and experiments
- Poster presentation of process, product and learning

Student Reflections

"Throughout the entire process of designing and finally making a car, there were many obstacles for us to overcome. We had some big issues with the wiring, with accidentally burning one of the motors being one of the biggest problems. It took us quite a long time to get the wiring correct, as it was very hard to properly solder everything together properly. There was also some disagreement between us when we were designing our car, because one preferred aesthetics over function, whereas it was the vice versa for the other. This made our design process a little longer than it should've been, but we are both happy with the final product. " - John and Steve

"I like how we could mess around with our design and throughly use the maker space." - Amanda

"When I was first introduced to this project, I didn't know how to react. There was so much to do, and so little I knew at the beginning. But then I started to gradually learn more through the videos and chats with teachers." - Brandon

"I had always been entered in electric cars and that interest developed even more after this project." - Nicolas

"Our car underwent various stages of improvement. For the first few weeks our car barely moved due to wiring issues with the motors and switches. We experienced two failed switches and one failed motor that slowed down our process…The final times we mode the battery holder slot smaller so that our wires and batteries would press firmly against each other, and our car was able to travel for a full 4.5 meters before the battery ran out of charge." - Naomi and Iris

Find out more at:
http://cards.buildingculturebybuildingpractice.com