

NORTH  
OF TYNE  
COMBINED  
AUTHORITY



CATAPULT  
Digital

North East  
Tees Valley



# ELECTRIC CAR CHALLENGE

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INSPIRE NORTH OF TYNE





# PROJECT BACKGROUND

Electric cars and autonomous driving are rapidly increasing in popularity and will soon be part of everyone's everyday life. Compared to traditional cars, they're easier to use, more environmentally-friendly, and more efficient. This means they're an example of intelligent mobility: a type of mobility that changes, enhances and improves lives for the better.

## VIDEO

Check out this video for an idea of what Nissan are hoping to achieve in the future and what driving might look like 20 years from now!

<https://www.youtube.com/watch?v=aGfwX9QgIRM>



Nissan are passionate about building a better future with intelligent mobility, where cars and drivers are more connected by utilising new technology. The overall vision and future goal is to produce a zero emission car and have zero fatalities on the roads. Nissan already produce a zero emission electric vehicle called the LEAF, 12% of which are manufactured in Sunderland using renewable energy sources to power the factory. The Nissan Leaf is the worlds biggest selling electric car, with over 450,000 sold since launch! Nissan aim to produce more electric vehicles to change and improve lives, while reducing the environmental impact caused from conventionally fuelled cars.



# THE CHALLENGE

Digital Catapult NETV has teamed up with Nissan to create a design challenge!

We want you to design an all electric car that will use new technology to enhance and improve people's lives. The design should help make travelling and driving easier and more efficient and should use new technology to perform functions current cars can't do. The design can be anything you like, you can even use technology not currently being used for cars (like magnetic levitation!)! We want you to be as creative as possible - it's a car of the future after all! But it **MUST** be able to meet all 5 objectives below. Use the considerations on page 5 to help you!

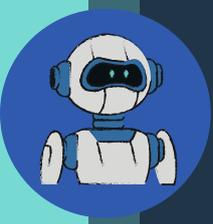
You can present your work anyway you want - posters, videos, prototypes, computer models, anything! But alongside your design, you need to write no more than 250 words explaining how your new vehicle meets the below objectives.

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## OBJECTIVES

1. The design must use **ATLEAST** 2 types of technology listed on page 4.
2. The design must have **ATLEAST** 1 autonomous function.  
(it can do something independently without the driver having to control the car e.g. park itself, move off at traffic lights).
3. Driver must able to 'instruct' and 'communicate' with the car via an easy to use interface.
4. It must be able to connect with a variety of devices.  
(e.g. phones, watches, computers etc).
5. It needs to be easy to charge.





# TECHNOLOGY REQUIREMENTS

The design MUST include ATLEAST 2 of the following types of technology:



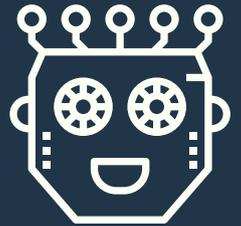
Sensors



Networks



Internet of Things



Artificial Intelligence



Touchscreen



Augmented Reality)



Biometrics



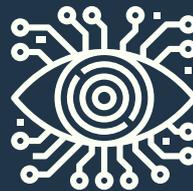
Solar Panels



5G



Machine Learning



Machine Vision



Cloud Computing



# CONSIDERATIONS

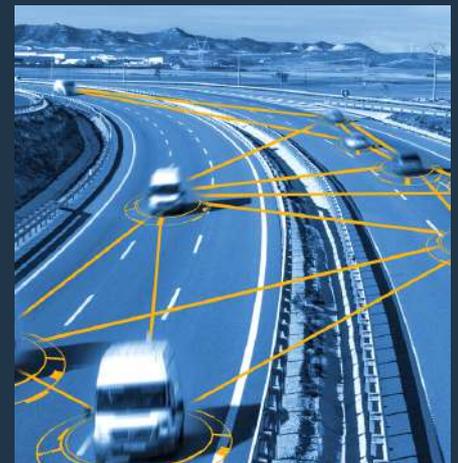
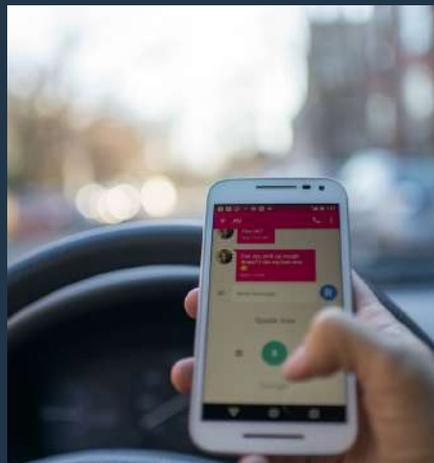
Here are some considerations and questions to get you thinking about your design and how it could meet the objectives!

- What can electric vehicles do now, and what will cars of the future be able to do?
- What technology will be used? What will this allow your vehicle to do?
- How will your vehicle improve peoples lives?
- How will your design connect to different devices and everything around them? What technology will enable these connections?
- How will people be able to communicate and interact?
- How will the vehicle be charged?

## BONUS QUESTIONS

Bonus: Consider the security and ethical implications of this technology.

EXTRA BONUS - Consider what materials the car will be made from and the advantages these materials have over other more conventional materials.





# WHAT DO I GET FOR COMPLETING THE PROJECT?

The best entry per academic year (years 7-13) will win prizes!

Prizes include a factory tour of Nissan Sunderland, Lego and shopping vouchers! Each winner will also be presented with a trophy for their work.

But there is something for everyone! Every submission receives a certificate for their incredible work and efforts on this challenge!

**Once you've finished your work, you're ready to submit! You can do this by emailing your design and written work to the email address below. Be sure to include your name, age and school in the email.**

**DEADLINE IS 30TH JUNE.**

**[info@sunderlandsoftwarecity.com](mailto:info@sunderlandsoftwarecity.com)**

**We look forward to seeing your new vehicle designs!**

