



Great Linford
Primary School



ECO RACING

STEM FAMILY CHALLENGES

Create a self-propelled car that can travel over 1 metre.



Real Life Context

Due to environmental and pollution concerns, the popularity of electric vehicles in the UK has increased over recent years, with over 500,000 electric cars on the road in 2020. Even sport is turning to more eco-friendly solutions with Formula E (electric car racing) growing in popularity with viewers and car makers since 2014.

Step 1: Grand Designs

Create different designs for the car chassis. Research different car designs and think about why they might be made in that shape. How might reducing air resistance improve the speed or distance your car can travel? What materials might you use that are eco-friendly and promote recycling?

Optional Digital Links: tinyurl.com/bbtjxa4z tinyurl.com/xpmom0ia



The chassis is the car's frame (skeleton). What materials will you use: cardboard, Lego or twigs?

Step 2: Eco-Powered Think how each of your designs could be powered. For example, you could attach a balloon to the chassis to use wind to propel your car forwards. You may decide a rubber band could be used to spin the wheels and move your car. Add details to your designs to show how you will attach your method of power to your car chassis. **Optional Digital Links:** tinyurl.com/13zljfxp tinyurl.com/5y9kxyjk

Step 3: Construction Build at least one of your designs to test if it works. Does the axle spin or is there friction slowing it down? Are your wheels all the same size? Does your choice of power work? Evaluate your design and make any changes. These may be small changes, or you can start again with one of your other designs. You could build two designs and see which is best.

Hint: How could you measure how far each design has travelled?

Step 4: Challenge Confident you have the ultimate eco-race car? Why not challenge someone in your house to a race? Get them to design their own eco-car or let them use one of your other designs. Who travels the furthest distance? Could you build a race track and time how long it takes each car to finish?

Submit Your Entries: **How will you present your challenge?**

Show as many of the steps as you can as part of your project. We look forward to seeing whose travels the furthest! You could create a booklet, a set of slides on a computer, build a display board with writing and drawings, photograph or video your car in action, or something of your choosing!

Ask your adult to submit your project to stem@greatlinfordprimaryschool.co.uk by **Sunday 28th February**. By submitting work, you agree to your project being used on the school website or social media platforms.