STEM from Home Pack 10
New Technologies

Technology serves a variety of different purposes and it is important that it continues to advance in order to improve the quality of societies and businesses. Advances in technology can help improve education, enabling further research and the ability to meet and teach virtually. New technologies can also keep our physical and virtual property secure, enable mass production of goods and help us to learn more about space!

This week, children will design a robot to help build the schools of the future, code a dodgeball game with Scratch, build a home projector and create a model of a rocket using Blender!

This week's Activity – Design a Robot to Build the Schools of the Future – Win a Marty Robot!

Robots aim to replicate human movements or functionality automatically, so are always designed with a purpose. Some robots are designed to build cars, some to organise our day-to-day lives and some are designed to teach children how to code and inspire the next generation of scientists and engineers!

In this week's competition, your task is to design and build (or draw) a robot that can help to build and run the schools of tomorrow. Think carefully about what the schools of tomorrow might look like, how will they be different from today?

You may want to consider the following factors:

- How will your robot help to ensure that your school is environmentally friendly?

- Will your robot help with teaching any classes?

- Will your robot use renewable energy sources?

- How will your robot help to feed hundreds of students?

- What will your robot do to ensure that children stay active and healthy in school?

- How will your robot make break and lunch times interesting for students?

- How will your robot be powered?

Your final product can be presented as a model or drawing, it's up to you! Just be sure to let us know all about your robot's exciting features!

Ask your parent/Guardian to upload pictures of your STEM creations to **Twitter**, **LinkedIn** or **Facebook** using #STEMfromHome and #ExperienceCGI, remember to tag us!

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Robotical are running a competition to win a Marty Robot! Check out Robotical's webpage for more information.

Marty is a real robot designed to help teach coding to children, for the price of a smart toy. Marty comes as a kit or pre-built, so you can either choose the fun of building a robot, or to just jump straight-in to playing and coding with your new walking robot companion.

Marty is Wi-Fi enabled and with nine individually controllable servo motors. You can use our app to remote control Marty, and add a bunch of sensors to react to the environment — Marty can walk, turn, dance, even kick a football!

Robotical have also developed a dodgeball game that you can code and play using Scratch!

In this activity, you will learn how to create a platform game in which the player has to dodge moving balls.

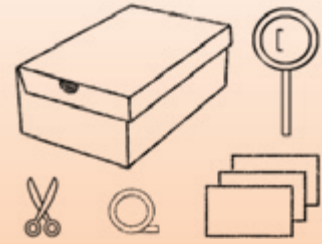You will need a computer capable of running Scratch 3 either online or offline.

You will learn how to use the keyboard to control a sprite, how to use different scratch blocks and how to clone a sprite.

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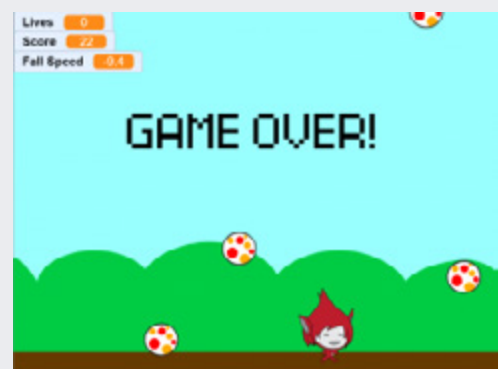
This Week's Bonus Activity – Build Your Own Home Projector

In this activity, you will learn how to build a projector for a mobile phone using materials that you can find lying around the house. The image/video from the screen will be projected from the phone onto a wall, creating your own home cinema experience!

Access the **guidelines for this activity**.

This Week's Technical Activity - Rocket

Introduction
In this project, you will create a model of a rocket using Blender.
Access this activity.

What you will need
A desktop or laptop computer capable of running the **Blender** software.

What you will learn
In this activity, you will learn how to design basic 2D & 3D assets.

For more information or additional support with STEM activities when working remotely, contact **enquiry.uk@cgi.com**