# STEM from Home Pack 5

## Engineering!

The fifth pack in this series focuses on engineering. An engineer is a person who designs and builds products, systems, or structures. This can include buildings, machinery or roads and can also include environmentally friendly changes to our homes.

You're going to become an engineer for the week! Your tasks are to design and build your own virtual helicopter, construct a model bridge and go on an engineering hunt!

## This week's activity – Create your own Tech Toys

### Introduction

In this project you'll learn how to code your own tech toys. You'll start off with a pair of sunglasses and then move onto a helicopter!

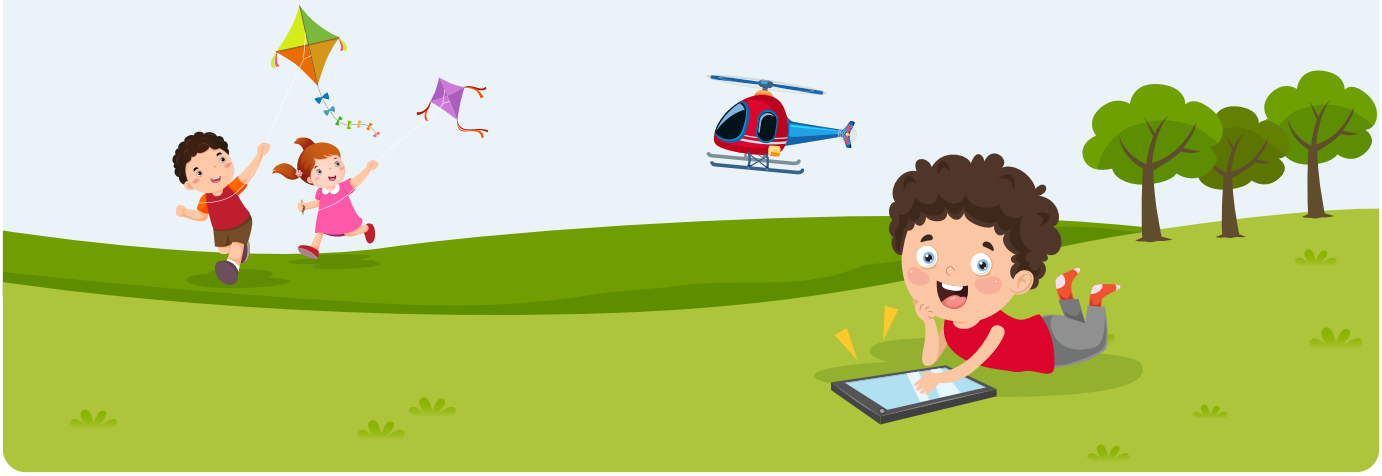
### What you will need

A computer capable of running Scratch and Scratch 3 software (either online or offline).

### What you will learn

In this activity, you will learn how to animate sprites, how to respond to keyboard input and understand how broadcasts work.

Access this activity here.



# This week's bonus activity – Construct your own bridge!

The definition of a bridge- a structure that carries a road, path or railway across a river, road, or other obstacle. Can you think of any famous bridges? **Some examples include:**

| | | | | |
|---|---|---|---|---|
| Golden Gate Bridge | Tower Bridge | Sydney Harbour Bridge | Brooklyn Bridge | Rialto Bridge |
| San Francisco, USA | London, England | Sydney, Australia | New York, USA | Venice, Italy |

This week's competition is to design and build your own bridge! Bridges can be made out of any materials you have lying around the house, including recycled cardboard, containers, bottles and any craft materials. Build your bridge between two chairs or tables. **Your bridge should meet the following criteria:**

| | | |
|---|---|---|
| Be at least 1m in length | Be able to support the weight of 0.5kg | Rest no more than 7cm on each chair/table |

Make your designs as creative and colourful as possible! Think about existing famous bridges, parts of their designs that you may want to use and/or change.

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

# This week's active activity – The Big Engineering Hunt!

This activity involves incorporating a hunt for as many types of engineering as you can find into your daily exercise routine. The checklist below outlines many common types of engineering that you may find on your walk, but can you spot any others? Use our types of engineering fact sheet to help you.

Record each type of engineering that you spot, how many times you spot it and any bonus types of engineering that are not on the list! Common types of engineering in our communities will include roads, bridges and buildings, but can you look even deeper? Think outside the box and realise how important engineering is in our society!

Access the checklist for this activity.

Remember that you should be accompanied by a parent/ guardian at all times and look both ways when crossing roads. Remember to **adhere to social distancing practices and leave the house for exercise only once per day in line with government recommendations.**

**Make sure you abide by Government advice at all times when leaving your home as part of your daily exercise.**

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





Thank you for reading this note. We hope your children enjoy our STEM at Home Programme.