

## STEM Competitions

Can you complete the STEM challenges at home? Don't forget to complete a design sheet first!

# STEM.1

## Tallest Tower

For the first challenge we are focussing on Engineering. Your aim is to build the tallest free-standing tower out of everyday objects at home. So, your tower must be able to stand without support. Once you have managed to create your tower, measure it. Then, stand next to your tower, hold up the measurement on a piece of paper and ask someone to take your picture.

# STEM.2

## Musical Madness

The Science of sound is the focus this week. Your aim this week is to make your own musical instrument. You need to choose your materials carefully to create an effective instrument. Then I would like you to video yourself (and your family if you have all made one) performing a tune using the instruments.

# STEM.3

## Paper Chain Challenge

This week the aim is to create the longest paper chain using only 1 sheet of A4 paper. You will need to think about how to cut your paper to make the longest chain you can. When cutting, make sure you have help from your adult at home. Finally, take a picture of your paper chain along with a piece of paper that shows the length. You might like to be in the picture yourself to give some context on length.

# STEM.4

## Homes and Habitats

Science is our focus this week and I would like you to make your own bug hotel. For this challenge, you will need to look at what particular animals need to live and the type of environment that they like to live in. Then you will need to draw your design and label it. You may need your adults to help you with the labelling and the making. This mini-habitat doesn't need to be big- it can be something small. Finally, when you have finished take a picture of you with your plan and the mini-habitat.

# STEM.5

## **Paper plane**

This week, your challenge is to make a paper aeroplane that can travel the furthest distance. You might like to try lots of different designs to get the furthest distance, using various techniques, materials and Technology. The only limit for your design is that you can only use 1 sheet of A4 paper. You can use weights, glue, sellotape and other resources if you would like to. When you have made the perfect paper plane, film yourself throwing it and if you can, measure the distance.

# STEM.6

## **Bridge Building**

This week, your challenge is an Engineering challenge- to make a bridge that spans a gap of 20cm. The aim of your bridge is to take as much weight as possible. You must make your bridge out of household items. You cannot use timber, although you may use twigs or sticks. When you are adding weight to your bridge I would like you to film it- so that I can judge how much weight it can hold.

# STEM.7

The final STEM challenge is focused on Maths. I would like you to make a collage of Sicklinghall School using different 2D shapes.