Maker {Futures}

Think Like an Engineer!

March - June 2021

Project Information

The University Of Sheffield.

Royal Academy of Engineering | Ingenious

Welcome!

We are really pleased that you can be part of this exciting programme developed by **Maker{Futures}** at **The University of Sheffield** and funded by **The Royal Academy of Engineering**. This guide contains the key information required to run the project and should be read by each teacher with a class involved.

The aims of the programme are:

1. to introduce schools to maker education with a STEM and DT focus.
2. to provide schools with engaging maker-based projects that can provide enrichment opportunities during COVID-19 restrictions.
3. to provide a connection between schools and local engineers to help children better understand what engineers do.
4. to support engineers with public engagement and outreach.

Who can get involved?

Each school can have between three and ten classes taking part. There are a range of activities to choose from suitable for children in Reception to Y6. Each school needs to have a minimum of three classes taking part, but the more the merrier!

When?

The projects can be completed between March and the 11th June at a time to suit your class. All schools involved will be invited to a final event on the 23rd June to celebrate the work that classes have achieved.

Think like an Engineer

Your school will receive a Maker{Kit} packed with resources and ten engineer inspired activities to run in school. Throughout the project, children will be encouraged to ‘think like an engineer’. To help them do this, pupils will:

- use the Maker{Cycle} to revisit and make improvements to their projects.
- ‘meet an engineer’ via short video clips and a live online meeting.
- become an ‘engineer volunteer’ by setting the projects within real-life contexts

How can I get started?

All the project information contained in this guide, together with the project activities to run an engineer inspired project in your class are found online at the following site: https://sites.google.com/sheffield.ac.uk/thinklikeanengineer2021/home

There are 4 stages to completing the Maker{school} project. A more detailed breakdown of the timescales involved are shown below.

1. Gain an insight into Maker{School} and the 'Think like an Engineer project'

This document and the project website provide information on the *Think like an Engineer* project. This project fits into a much larger programme for schools called Maker{School}. To find out more about the Maker{School} approach, an introduction guide can be found here.

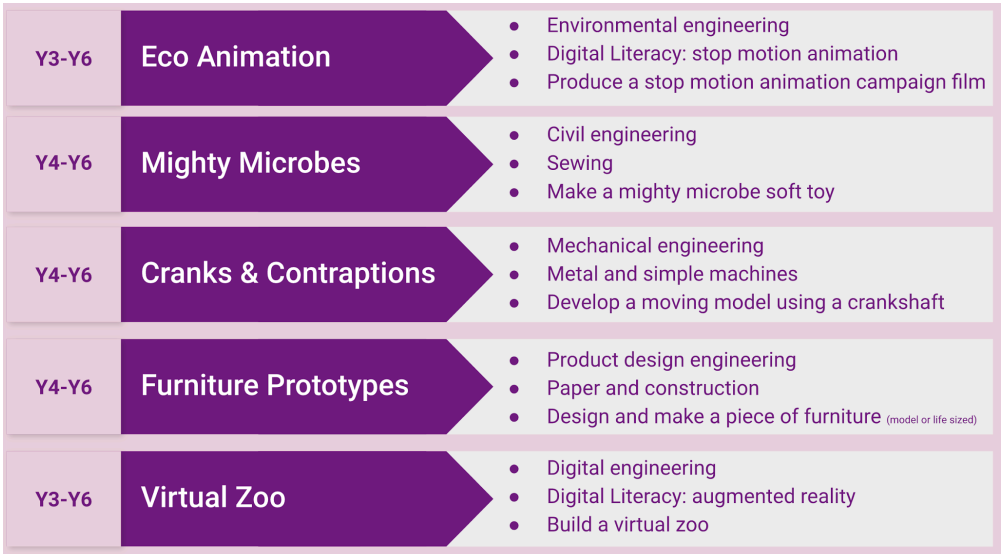
2. Complete the pre-project questionnaire

This project has been kindly funded by The Royal Academy of Engineering and it is a requirement that we collect pre and post project feedback from all teachers taking part. Please spend 10 mins completing the pre-project questionnaire here.

3. Choose your class project and complete it with your pupils

Here is a brief summary of the projects to choose from. The project website contains each project in detail.

EYFS - Y6	Light up Sparklers	• Electronic engineering • Circuits and Craft • Make a safe electronic sparkler
Y1-Y6	Make a Story	• Structural engineering • Cardboard cutting and construction • Make a box theatre to tell a story
Y1-Y3	Float your Boat	• Materials engineering • Materials attachment and prototyping • Design and build a boat to meet the criteria
Y2-Y3	Plastic Fantastic	• Chemical engineering • Materials and chemistry • Expressive artwork or make a pencil grip
Y2-Y3	Paper Plane Launcher	• Aerospace engineering • Cardboard construction • Design, build and test a paper plane launcher



4. Pupil and teacher feedback & celebration event

As we mentioned earlier, it is really important that we get feedback from you and children to help us (and the funders) evaluate the project. Details and feedback forms can be found here. Please complete all feedback by 11th June.

Your school is required to submit a 3 min video of their projects to be shown at the celebration event on the 23rd June. Each school has been sent a link to a separate Google file where you can upload completed feedback sheets, videos and photos.

Resources - Maker{Kit}

During the week of 8th March, your school will receive a Maker{Kit} with the resources needed for the ten project activities.

If you have any questions about the kit, please contact Patrizia Baldi - p.baldi@sheffield.ac.uk

Risk assessment

Each activity has been risk assessed and it is important that teachers read these before carrying out their projects. These can be found on the project website and also here.

Project Checklist

Date & Item	What will I be doing?	✔
Planning **March - April 2021**	Complete the pre-project questionnaire	
	Decide which classes are participating & when (min 3 - max 10 classes)	
	Choose your class project	
	Familiarise yourself with your project	
	Book an introductory online session to ask questions and get support with your activity. These drop-in sessions are an informal way for us to chat to you about the activities and for you to ask questions and feel confident in getting started. Choose from the following dates: 15th March 4.15 - 5pm 29th March 4.15 - 5pm 20th April 4.15 - 5pm	
	Organise any additional resources required for your project	
Project & Feedback **March - 11th June**	**Project time!**	
	Complete the Exploration, Skill builder and Tinker-time elements of your project with your class	
	Capture photos and/or videos of your project (it may be helpful to ask another adult to be responsible for this throughout each session)	
	How about ... booking into a 'Meet an Engineer' online session with your class to ask questions about your project and speak to real engineers about what they are doing? 21st April 2.30 - 3pm 26th April 1.15pm - 1.45pm 5th May 2.30pm - 3pm 18th May 1.15pm - 1.45pm	
	Feedback - By Friday 11th June	
	Whole school video (approx. 3 mins) uploaded to your school's project google folder	
	Pupil feedback completed (details can be found here)	
	Teacher feedback questionnaire completed (details can be found here)	
Celebration! **23rd June** (afternoon - times to be confirmed)	Join us for a special online celebration event on International Women in Engineering Day! • Join the online 25 min celebration event • We will screen the collection of videos showcasing the brilliant work each school has achieved • There will be a special message from our project engineers	

Help & Support

We want to support you and your class throughout your project and are always here to help.

Email us to ask questions or ask for help and guidance.

- alison.buxton@sheffield.ac.uk for general support or questions
- p.baldi@sheffield.ac.uk for queries regarding resources

Or book an online call with Alison Buxton to discuss your project and any questions you might have. This could be a single teacher, a cluster of teachers or a class call if children wish to ask questions. Email alison.buxton@sheffield.ac.uk to arrange.

Frequently Asked Questions

We've compiled a list of frequently asked questions on the website. We will update these throughout the project.

If you have any comments, concerns or questions please contact us