

Glasgow Science Festival Creating Engineers 2024 Glasgow's Transforming Go-Kart Challenge

The Glasgow Science Festival (GSF) **Creating Engineers** competition has run for nearly two decades. Each year, we welcome thousands of primary 5 & 6 pupils from across the West of Scotland and surrounds to take part.

Pupils work in pairs and compete through four rounds classroom, cluster, area final & grand final for the chance to become the **Glasgow Science Festival Creating Engineers Champions**. The competition tests the pupils on their teamwork, problem solving, construction skills and creativity through engineering-based challenges.

After a successful smaller scale post-COVID launch in 2023 we are pleased to say the **Creating Engineers Competition** was back at full capacity for 2024. Due to the hybrid nature of Glasgow Science Festival we have included a Creating Engineers challenge that is open to anyone who is interested.

As part of GSF24, we invite you to take part in our **Creating Engineers 2024 Challenge**, anytime throughout May and June.

The Challenge

The challenge can be found attached to this document. This year's theme is Glasgow's Transforming due to the city undergoing significant change through development and regeneration.

Share with us on social media:

Twitter: @GlasgowSciFest #GSFCreatingEngineers

Instagram: @glascifest

Facebook: @glasgowsciencefestival

Join our **GSF Mailing List** to hear about Creating Engineers 2024

For more information on Creating Engineers please visit our website

www.glasgowsciencefestival.org.uk

How to run a Creating Engineers challenge:

- Pupils compete in teams of two.
- One hour to complete challenge, including preparation and planning.
- Each team is provided with paper and encouraged to plan out their designs.
- Designs are rated using the GSF Judging sheet last page of this document.

We have included the judging sheets used in our competition stages. However, it is entirely up to you if you would like to run it as a competition or a classroom project. The official competition requires the use of K'Nex kits, if you do not have these available, please tackle the challenge through whatever means you have.

www.glasgowsciencefestival.org.uk



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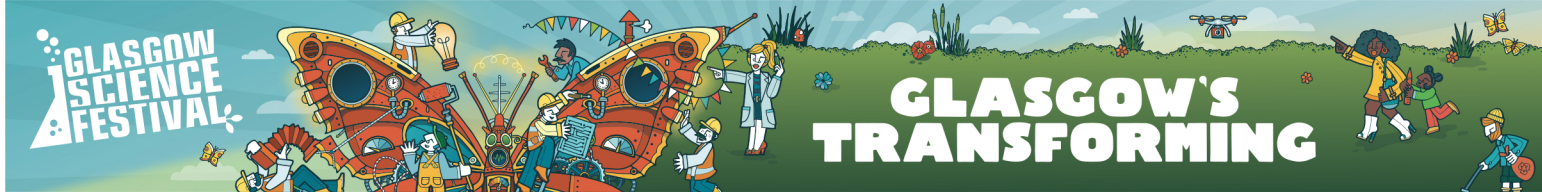


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For example:

- Lego or similar
- Diagrams and Schematics
- Models made from paper, cardboard, sticks etc
- Multimedia.

Celebrating Pupils Work

As a thank you and to recognise the pupil's work:

For Pupils in our Challenge Local Authority Areas*

Complete our online form (link below) to receive:

- Creating Engineers 2024 class participation certificate
- GSF Creating Engineers badge per pupil

**Dumfries & Galloway, East Ayrshire, North Ayrshire, South Ayrshire, East Dunbartonshire, East Renfrewshire, Glasgow City, Inverclyde, North Lanarkshire, Renfrewshire, South Lanarkshire, West Dunbartonshire*

For all other areas

Complete our online form (link below) to receive:

- Creating Engineers 2024 class participation certificate

[Glasgow Science Festival Creating Engineers 2024 Online Form](#)

This asks for school name, teacher contact name, email address, postal address, pupil numbers per class. The info will not be used in any other way except to send you the certificates and/or badges.

Glasgow Science Festival: Glasgow's Transforming 6th to 16th June 2024

Glasgow Science Festival returns to the City throughout June with our action-packed programme of events delivered in partnership with research staff and students from Glasgow and beyond.

Find us popping up in museums, libraries, Glasgow Botanic Gardens, and lots of other spaces. Why not combine a school trip to the Glasgow Botanic Gardens or the Riverside Museum with some GSF fun!

We will be taking bookings for our **Glasgow Botanic Gardens event**. More info available on the website.

www.glasgowsciencefestival.org.uk

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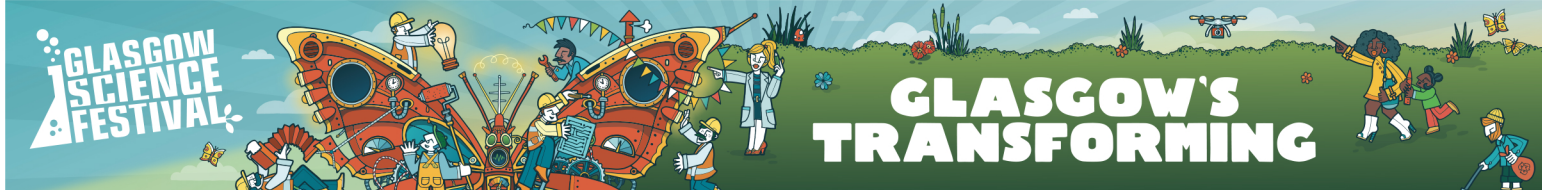


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Online Content

We will also be online with Science on the Sofa. Our digital content packed full of experiments and other activities for you to do at a time and pace that suits.

Our digital programme **Science on the Sofa** features dozens of activities suitable for the classroom. Created with our partners, including the University of Glasgow, Historic Environment Scotland and The Open Uni. All content is designed to be self-led and readily available for you to engage with at your leisure.

Science on the Sofa is divided into three strands:

1. **Hands-Online:** dozens of experiments, activities, demo's and workshops. Covering a range of subject areas. The activities are supported by instructional videos, how-to guides and activity packs. Designed for use at home, in the classroom or community settings. Using readily available and inexpensive materials.
2. **Citizen Science:** Citizen science projects created by University of Glasgow researchers, inviting you to take part and help collect valuable data.
3. **Talking Science:** talks on various themes presented by researchers.

Information on the in-person programme launches on our website on 30th April, with events starting on the 6th June. Our digital offer, Science on the Sofa, goes live on the June 1st and is available until 30th June.

www.glasgowsciencefestival.org.uk

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Cluster Challenge Information Pack

Design a Go-Kart

The Scenario

Glasgow Science Festival is celebrating our 18th Birthday this year. To celebrate the staff want to have a fun day out at the go-kart racing! We'd like you to use your imagination, be innovative and design and make a model of a 'cool' go-kart from your K'Nex.

The Challenge

You have **ONE HOUR**.

You must build a go-kart with a steering mechanism. It should be able to move backwards and forwards, turn right and left.

The Specifications

Your Go-Kart must:

- Have at least 4 wheels
- Be between 10-20cm tall and 10-20cm wide
- Have a steering mechanism you can turn by hand to allow the vehicle to turn left and right
- Include at least one seat for the driver

Things to think of

- Remember to discuss and plan your design.
- How will you make your vehicle strong and stable enough?
- How will you make the steering mechanism?
- Do you want your vehicle to have brakes?

GOOD LUCK!

Creating Engineers Judging Sheet

Pupil 1		Pupil 2	
Judging Criteria	Consider	Score	Judges Comments:
<p>Presentation, Communication & Teamwork</p> <p style="text-align: center;">Max Points 25</p> <p>Poor Average Good Excellent 1-6 7-15 16-21 22-25</p>	<ul style="list-style-type: none"> Did the pupils plan the model before building it? Do they have drawings they can show, were they made before, during or after they started to build? How well did the team communicate about their design? Do they play to their individual strengths and use them to make a good team? Do they work well together? 		
<p>Problem Solving</p> <p style="text-align: center;">Max Points 25</p> <p>Poor Average Good Excellent 1-6 7-15 16-21 22-25</p>	<ul style="list-style-type: none"> Discuss the problems the pupils encountered during the design & construction stages of the model. Did they overcome the problems methodically & analytically? What ideas were tried before the final solution was adopted? Have they shown a clear understanding of how to problem solve? Did they work together on solving them? 		
<p>Operation & Function</p> <p style="text-align: center;">Max Points 25</p> <p>Poor Average Good Excellent 1-6 7-15 16-21 22-25</p>	<ul style="list-style-type: none"> Have the pupils built an effective model that meets the criteria - interesting, novel and sturdy with moving parts? Does it perform the intended function competently, could it be improved? 		
<p>Design & Visual Appeal</p> <p style="text-align: center;">Max Points 25</p> <p>Poor Average Good Excellent 1-6 7-15 16-21 22-25</p>	<ul style="list-style-type: none"> Has safety been considered, is it strong and sturdy? Review your overall impression of the model, is it visually appealing? 		
Judged by:		<p>Max Score: 100 points</p> <p>TOTAL</p>	Any other comments: