Connecting STEM Teachers Programme
Collaborative Project 2023

As part of the Royal Academy of Engineering's (RAEng) Connecting STEM Teachers Programme we will be hosting a Collaborative Project for 50-60 S2-S3 pupils from schools across Aberdeen City and Aberdeenshire at Lochside Academy on Wednesday 31st May 2023. The collaborative project aims to bring together pupils to solve the problem of how we design, plan, construct and live in a home that is sustainable, thinking about the range of industries that are required and how they link to STEM subjects.

We are looking for industry partners from a variety of sectors to attend the day and support the students in the design of their 'home for the future', running small workshops with groups of up to 4 students that provide them with information required to plan their home and participate in the judging of a selection of designs.

Please see below a proposal for the event, including the pupil brief, outline of the day and the categories and questions that the students will be asked to consider.

Pupil Brief

You are tasked with designing a 'home for the future'. As part of the challenge you will explore how we can design, build and inhabit our homes in a way that is sustainable and does not negatively impact the environment.
Working in groups you will explore a variety of engineering challenges that will provide you with the knowledge required to design your own 'home of the future'. Following the challenges you will design your home and present your ideas explaining how you plan to create a sustainable home.

Proposed Day Plan

Round Robin: Throughout the morning students will work their way round industry partners exploring how they work to ensure that our homes are fit for the future in all, completing challenges that get them thinking about each aspect and considering different alternatives to each problem. Approximately 10 minutes spent at each station.

Design: As a group pupils will plan their home for the future, considering the design, construction, energy, waste and habitation aspects of the home.

Presentation: In small groups students will present their ideas to industry partners, (think Dragon's Den) taking questions about their designs.

Judging and Awards: Awards will be determined and presented to different groups covering the 5 main aspects of their design.

Categories and Questions

Design: What are the considerations when designing sustainably, from location, materials,

Construction: How does the construction industry reduce their environmental impact and what elements should be considered when planning the construction of a house?

Energy: How can we power and heat our homes in an environmentally sustainable way? Where do we source and generate power?

Waste: How should we dispose of waste both during the construction of a building and once the property is inhabited, reducing the amount of waste ending up in landfills and being wasted?

Habitation and Technology: What technology can be used to make homes the most efficient they can be?