Quality of Our Services

Approved Quality

The quality of our service provision is ensured by the support and approval we have received from leading science associations across the U.K in our past projects.

For our Heritage and STEM project we have received funding from several prestigious science organisations, including the Institute of Physics (IOP), British Science Association (BSA), Institute of Mechanical Engineers (IMechE) and Royal Academy of Engineering (RAE).

Through funding from the Royal Society of Chemistry (RSC), Society for Applied Microbiology (sfam) and Biochemical Society, we have compiled an exciting array of experiments for our Health and STEM club.

About Our Clubs

Bespoke Science Clubs

Our clubs offer informal science workshops for children aged between 6 and 16. These workshops retain a degree of distinctiveness from the formal school curriculum, while still remaining attractive to schools and children.

In the workshops, a lead scientist first provides a brief background on the STEM subject the workshop centres on. The children then receive the science experiment kit, which contains all the tools and materials they need to complete the experiment. Each experiment also includes a maths exercise.

After the session ends, the children will take their completed experiment or model home, where they can repeat the experiments with family and friends.

Our Goals

With a shortage of qualified STEM subject teachers, it is difficult to find the extra support required to increase attainment and, without support, pupils often develop negative attitudes towards STEM subjects.

Our long-term goal is to reverse this trend, engaging Black, Asian and Minority Ethnic (BAME) and disadvantaged children in the sciences through fun and exciting activities, and encouraging them to pursue further education in and to consider future careers in STEM.

Call Us for More Info:

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Toranj Tuition

Informal Science Clubs

We are the only organisation in the north of England which is supported by almost all the most prestigious science associations in the U.K.

Health and STEM

THE CHEMISTRY OF HEALTHY EATING

We designed the experiments to inspire and improve children's understanding of chemistry, biochemistry and microbiology. These workshops use fun activities to engage children in these subjects and encourage healthy eating. Behind the fun, there is a clear focus on teaching the underlying concept of these sciences by providing a real-life experience.

Experiments

Healthy and Delicious DNA

Many science experiment kits make DNA models using sweets, however in this workshop participants make theirs from chopped fruits, celery stalks and cocktail sticks.

The Chemistry of Healthy Eating

After learning about macro- and micronutrients, participants test the fat, sugar and protein content of popular foods and are guided by nutritionists into making healthier food choices.

You Are What You Eat

Preservatives play an important role in the food industries however some are unhealthy. This workshop examines the health benefits of spices and promotes the value of traditional ethnic foods.

C: A Fantastic Vitamin

Did you know different cooking methods can change the nutritional value of vegetables? In this workshop, participants learn how the boiling of carrots can decrease their vitamin C content.

Heritage Trips

Our Delight of Light project combined STEM with visits to local heritage sites. Participants visit one of four local lighthouses. These are Spurn Lighthouse, Withernsea Lighthouse Museum, Flamborough Head Lighthouse or Whitby Lighthouse. Heritage talks are delivered on-site. As Kingston upon Hull used to be a major port, the speaker will tie the importance of lighthouses to Hull's maritime history to help participants learn more about their home city. Participants will take photographs of the lighthouse which will be used to create 3D models. Heritage Lottery Fund supported the heritage aspect of this project.

heritage lottery fund
LOTTERY FUNDED

> The creativity in this project is achieved through its interesting approach that links heritage with engineering via lighthouses. This enables the target audiences to develop not only their knowledge and confidence of engineering, but in a way that is contextualised to their local environment.
>
> Anonymous External Reviewer, Royal Academy of Engineers

Heritage and STEM

THE DELIGHT OF LIGHT

We first take the participants to local lighthouses around Yorkshire. The participants' photographs of these lighthouses are used to produce a model using a 3D printer. We then introduce them to optical physics and structural, electrical, acoustical, computer and mechanical engineering through our science experiment workshops.

Experiments

01 **Lighting the Project**

Using a 3D printer, participants make a model of a lighthouse for use in subsequent experiments.

02 **Delight of Light**

After the design of lighthouses, participants study optical physics and structural engineering.

03 **Light Waves**

Focusing on acoustic engineering, participants will learn about sound and waves.

04 **Lighting the Way**

Participants make a basic circuit to power a lightbulb, which they will add to their 3D model lighthouse.

05 **Light Delights**

Participants learn about communication devices which enable communication between lighthouses and ships and practice programming.

06 **Lighting the Future**

The last experiment introduces the automation of lighthouses and the technology which enables this.