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The Smallpeice Trust
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About Us

Founded in 1966 by a self-taught engineer, Dr Cosby Smallpeice, we are a vibrant educational charity that is passionate about engaging 10 to 18-year olds to take up careers in Science, Technology, Engineering and Maths (STEM). In January 2018, Smallpeice's sister charity, the Arkwright Scholarships Trust, merged with Smallpeice to offer students between the ages of 11 and 21 years access to leading STEM education and scholarship opportunities throughout their school careers and beyond.

In the last full pre-covid academic year, a record 49,140 students participated in our programmes:

- ca. 50,000 12-18-year-old students benefit from our activities
- 700 events (STEM Days, Courses, Family Events etc.)
- Nearly 70 Residential courses across the UK
- 400+ Arkwright Engineering Scholars
- 50% Female students on courses
- 1 in 2 Students attend a course free of charge

Our Vision

To inspire increasing numbers of young people to acquire life, leadership and engineering skills. In order to increase the number of engineers. To enable society.

We do the things that aren't so noticeable...

- Leading organisation in our space for secure storage of student data
- Safe environments for young people 24/7
- Risk management

And the things that are more noticeable...

- Help you connect to young people, families and communities
- Support recruitment of engineers at Levels 3-7 and help address diversity targets
- Provide development and volunteering opportunities for colleagues (linked to Chartership)
- Evaluation, impact and student tracking

Services

Our Services

THINK KITS

- ca. 6,000 students p.a.
- All materials for school/parent to run a fun, structured project
- Powered Glider Kit £250

STEM DAYS

- ca.40,000 students p.a.
- Suitable for Yrs 7-11
- Opportunity for students to get CREST Award

STEM COMMUNITY EVENTS

- ca. 2,000 students p.a.
- Family events
- Bring your child to work day, celebration events, science fairs

RESIDENTIAL COURSES

- ~ 70 Courses ca. 3,500 students p.a.
- 3-5 days
- Universities and inspirational venues nationwide
- Speaking opportunities: 20 minute , 1 hour and 8 hour projects

ARKWRIGHT ENGINEERING SCHOLARSHIPS

- ca. 400 Scholars p.a.
- Support students through A -Levels or equivalent
- Encourage students to pursue Engineering, Computing or technical Design

PROJECT DESIGN & EVENT MANAGEMENT

- Bespoke projects for leading companies
- Big Bang Fairs, Regional events

The Smallpeice Trust range of activities

- 1) **STEM Days in target schools – page 4**
- 2) **Become a Lead Sponsor for a Residential Course – page 5**
- 3) **Sponsoring Students to Attend an Existing Smallpeice Course – page 6**
- 4) **STEM Clubs Kits – page 6**
- 5) **Family Events – page 6**
- 6) **Arkwright Engineering Scholarships - page 7**

Activities

1) STEM Days in target schools

These are a way to reach out to quite high volumes of students. Each STEM Day could be full day. Suitable for up to 60, Year 4 (age 8\9) to Year 11 (age 15\16) students for primary and secondary school STEM Days.

Examples of STEM Days:



- Using Lego Mindstorms, students build and programme buggies which they navigate around a city scape without any human interaction. As they get proficient at programming, students programme their vehicles to react to emergencies and avoid pedestrians.
- Learning the physics of flight, then designing and building a balsa wood glider that can fly over 20 metres
- Coming up with a new energy efficient smart building to capture, filter and pump the rainwater to be used around the building.
- Helping inhabitants of an island access clean water and generate electricity through designing and constructing a wind turbine and reservoir with pumping system.
- Company messaging/videos/talks inter-dispersed into the STEM Day.

- Company welcome to send apprentices/volunteers along to give a talk, assist with mentoring and the prize-giving part of the day.
- Smallpeice would manage all the school liaison, bookings, admin, risk assessments, bring all the equipment, materials and resources for the day.
- STEM Days lend themselves to good local publicity. Smallpeice can request media consent from the school at the time of booking.
- Smallpeice uses the IMechE 7-point model for assessing the impact of the STEM Days. This is split by gender. Smallpeice would request that all students and teachers complete a feedback form. This is compiled manually into Excel spreadsheets.
- Students can gain the prestigious British Science Association's CREST Discovery award by completing a reflective learning passport that embeds their increased skills and confidence. The award is an invaluable addition to future UCAS or job applications.

Secondary STEM Days are £1,000 per day inclusive of time, delivery, resources, materials, school liaison, small prizes, feedback reporting, travel, accommodation. (+£300 - CREST Discovery award and certificate for each child)

Bespoke STEM day activity development is on a case by case basis and ranges from £5,000 - £10,000

2) Become a Lead Sponsor for a Residential Course

In our last full year, Smallpeice ran 70 different residential courses and has been running Virtual courses during the lockdown period. These take place at universities and other leading venues across the UK. These are high impact programmes. We offer a full continuum of courses for students in Years 8 to 12 and our courses are normally 3 to 5 days in duration. In the last academic year, 50% of our residential course students were female.

Subjects are varied and include: An Introductory Humanitarian Engineering, Engineering Experience course, Girls into Engineering, Chemical Engineering, Computing, Aeronautical Engineering, Electronics, Marine Technology, Motorsports Engineering, Off-road Vehicles, Railway Engineering and Future Energy.

The combination of running a series of STEM days to high volumes of students and then selecting 10%-20% of the students to attend a high-quality residential course can be a beneficial option for partners to help them meet their numbers and impact requirements.

In all instances, Smallpeice can manage all the marketing, school liaison, parent liaison, dietary requirements, risk assessments, provide 24/7 supervision, provide in loco parentis responsibility, course delivery and feedback.

Student safety is our number one priority, be that:

- Major investment in systems to secure student data that have the highest rating for Cyber Security for the type of data that we hold
- Providing 24/7 supervision on our residential courses
- Managing risks inherent with education programmes
- Our zero-tolerance approach to discrimination of any kind

Role-model engineers and specialists guide the students through every stage of the programme. Practical workshops, masterclasses, career presentations and a university tour usually feature in the courses. We would also include a fully supervised social programme in the evenings. Students get to develop their team working, creative thinking, leadership and financial management skills. Students gain real work experience through completing similar complex tasks to that of a STEM professional.

Residential courses enable students to make a more informed career choice, experience university life, whilst improving self-esteem and confidence. Above all, students have fun. The impact of our residential courses is considerable. It is not uncommon for us to receive feedback from parents stating that the residential course has had a life-changing impact on their son or daughter.

3) Sponsoring Students to Attend an Existing Smallpeice Course

Smallpeice will run around 65 different residential courses in 2022 covering subjects mentioned above and many more. An option to consider is sponsoring 'potential' students from the STEM Days to attend an existing Smallpeice course to continue their STEM journey. There are lots of course options including our foundation 'Engineering Experience' for Year 8/9 students or our 'Girls into Engineering' course for Year 8/9 students.



These vary in price depending on the course length and location. Prices are typically between £375 and £495 per student inclusive of all accommodation, meals, social activities and course materials.

4) STEM Clubs Kits

To continue to build momentum of STEM, each school would be given a 'Powered Glider' STEM Club kit. All the materials, resources, week-by-week lesson plans would be included in the kit to enable the school to run a STEM Club for an hour each week, over 6 weeks. It comes with a step-by-step video guide. There are enough components to build five powered gliders; meaning 20 students split into five groups of four can participate in the project.

Each Powered Glider Think Kit is £250 including packing and shipping.

5) Family Events

Parents can help their child make better informed decisions about their future and raise their aspirations beyond school.

Students from local schools, along with their siblings and parents would be invited to attend a Family Event. Working in small groups, the parents and their daughter or son and siblings would take part in a practical activity. There would also be a career talks, presentations and demos. Refreshments and snacks would be provided.

a) Designing and building a bridge to bring water back across an island which has suffered an earthquake. For every millilitre of water that successfully crosses the bridge, one life was saved.

b) Designing and constructing a speaker that can amplify sound produced by a mobile phone or MP3 player. In teams, participants must solder the components required onto an amplifier circuit board.

Furthermore, during the day, parents will learn about routes into STEM-related careers which will in turn help their children make better informed decisions about their future and raise their aspirations beyond school.

Family events are normally between £2,500-£4,000 depending on size, venue, resourcing, equipment and requirements.

6) Arkwright Engineering Scholarships

Arkwright Engineering Scholarships are designed to identify, inspire and nurture future leaders in engineering and technical design. Arkwright awards its scholarships to high-calibre students from all education backgrounds to support them through their A Levels and Scottish Advanced Highers. This is done through a rigorous selection process, including an interview by industry representatives.

The Scholarships consist of:

- Engineering enrichment for Scholars – support from a Sponsor; Engineering Experience Days hosted by industry; university taster courses; mentoring by graduate Engineers & Designers; e-newsletter with events and opportunities open to Scholars; free trade magazines.
- £600 to each Scholar to purchase textbooks, project materials and enrichment experiences to benefit the Scholar's academic studies and wider experience of engineering.
- £400 to the Scholars' school to be spent on equipment, materials or teacher training for Science subjects, Engineering Science, Computing and Maths, thereby benefitting successive year groups.

On average, 29% of our Scholars are female. 92% of Scholars go on to university or higher-level apprenticeships in engineering. Case studies show the excellent exam results and careers that Scholars have achieved over the years.

To apply to our scheme, candidates' schools must be affiliated to Arkwright, which is a simple process facilitated by our regional liaison officers. We have benefitted over 1100 schools and colleges across the UK since 1991, 73% of which are from the state sector. We continually seek more mentors and schools to take part in the Arkwright Scholarship Scheme.

Arkwright Scholarships are £2,500 for 2022

Why The Smallpeice Trust is different

We develop an educational programme around what you need and where

- Our Education Officers have the expertise to develop bespoke projects, geared around your industry sector.
- All our Education Officers have a degree in either a STEM subject or education.
- Our Education Team work everywhere in the UK. We can deliver programmes to “named” schools, specific towns or regions; wherever you would like us to work.
- We offer complete flexibility so that you can be involved to the extent that you desire.

We are committed to deliver on quality

- Over the years, we have learnt what works. We believe that students learn best by immersing themselves in hands-on activity. We don't hire “actors” to deliver our STEM sessions but provide expertly trained education officers who are knowledgeable in STEM.
- Our reporting is part of our commitment to meet our sponsors' requirements and to build on the good work that we do. We know there is always room to go the extra mile for our sponsors, and that's something we strive to accomplish day in and day out. By working with us, you will get student and teacher feedback and regular reviews to suit your needs.

Safety is of paramount importance

- We have carried our major investment in systems to secure student data that have the highest rating for cyber security.
- We take care of the safety and security of the students. All activities are risk assessed and all Smallpeice staff are DBS-checked and first aid trained.
- All staff actions and decision-making in relation to student protection are guided by departmental procedures and our student protection policy.
- During our residential courses, we provide full 24/7 in loco parentis responsibility.

Solid track record

- We have a professional reputation marked by creativity, wide reach and sound knowledge.
- Our extensive and long-standing relationships with companies are testament to our ability to deliver. Partners include: ARM, Thales, BAE Systems, EDF Energy, GE Aviation, GCHQ, IET, IMechE, Jaguar Land Rover, Leonardo, National Grid, RAF, Rolls-Royce Aerospace Royal Navy, Siemens Rail, Southern Water, UKESF, McLaren Racing and Virgin Galactic