Instructions for teachers

These resources will help your students explore the four Industrial Strategy Grand Challenges and the impact they have on lives now and in the future:

- Ageing Society
- Artificial Intelligence (AI) and Data
- Clean Growth
- Future of Mobility

The resources in this pack have been developed with some of our partners, who have kindly contributed resources on the Grand Challenge topics.

In this pack you will also find pages that can be used as a handouts for students. These are indicated in the titles and contents page.

Choosing a project

We want young people to use their project to explore innovative ideas and solutions. Encourage them to consider local and personal connections with the Industrial Strategy Grand Challenges. What do they imagine the future could be like? What problems might arise with new technology and these changes in society? What most interests and excites them? Students can use the project ideas on pages 11-19 as inspiration or use the activities on page 5 to help them design their own project around the theme and topic which most interests them. They could work individually or in small groups on the same project.

Resources

There are new developments around these areas all the time. The resource links on the project pages give a starting point for students to research but they could also search local and national news articles for more recent developments on each theme.

Project outcomes

Your students could design and make a new product, carry out a practical investigation, do a research project or create a communication campaign for their target audience. Encourage them to consider the impact of their project on people's lives now and in the future. Students should record their work in a final project report or presentation.

Supporting students to complete their project

Each project should involve approximately 10 hours of student work from start to finish. The project should be led by the students. As a teacher or mentor your role is to:

- Act as a sounding board for students' ideas and nurture the students' work;
- Check your students' project plans before they begin the next stage;
- Help students see mistakes and setbacks as an opportunity for positive learning and lateral thinking (leading to creativity);
- Where relevant, support students to access professionals or experts who could support them;
- Provide access to the Internet, library books and magazines;
- Help students to complete their project and record their findings;
- Encourage them to reflect on their own performance and learning.

Use the tips on page 10 to help students complete their CREST Bronze project report.

Health and safety

Students should be encouraged to make their own risk assessment before they carry out any activity, including surveys. They can use the CLEAPSS student safety sheets to help them science.cleapss.org.uk/Resources/Student-Safety-Sheets/.

They should write out their project plan, identifying the risks involved in each stage and the control measures and precautions they will take.

In all circumstances this must be checked by a competent person.

Students using specialised equipment should be supervised at all times. Students may want to set up unorthodox experiments and you may need to seek specialist advice. Contact CLEAPSS directly cleapss.org.uk for advice if you are unsure.Teachers in Scotland should refer to SSERC www.sserc.org.uk.

Unless stated, no external links have been checked by CLEAPSS.

Safety checked but not trialled by CLEAPSS.