

GET YOUR STUDENTS STARTED WITH YOUR *ENGINEERS MAKING A DIFFERENCE* SCHOOL KIT

With British Science Week 2023 now upon us, what better time to make use of your new school kit. Here are a selection of activities that you can use to help students engage with the resources available. There are also lots of great activities available in your Teacher's Guide!

1. Engineering is an industry with lots of overlap between sectors. Students can read the profiles of Alan James Proud (pages 80–81), Jennifer Olsen (pages 188–189) and Dr Ugur Tanriverdi (pages 92–93). All these engineers work in the field of prosthetics – but feature in different chapters. Use these examples to encourage students to think about how engineers may work across different areas. Can students identify themes that run throughout the chapters? Ask them to find profiles that fit an assigned theme – such as sustainability, innovation, battling climate change, and so on.
2. Ask students to read Professor Mischa Dohler's profile (pages 127–129) and think about the Internet of Things (IoT). Students will likely be familiar with devices in a smart home – ask if any of them use a smart speaker or thermostat, for example. Through their own knowledge or research, ask students to list as many tasks as possible that smart devices can control in homes. Students could then discuss which devices can be linked to complete those tasks or new ones.
3. Ask students to find any examples on the timeline of engineering feats that build upon each other – for example, the first practical car in 1886 needed the paved roads from 4000 CE to drive upon! Timeline entries are divided by chapter – encourage students to think about how different areas of engineering impact each other by thinking about how these entries intersect. You could ask students to write their favourite timeline entries on flashcards and have them organise the entries in as many different groups as they can think of. Students could here be encouraged to think about the different types of engineering (pages 10–11).
4. Read the profiles of Dr David Trevelyan (pages 170–173) and Pavlina Akritas (pages 166–169) and watch Pavlina's video case study (www.youtube.com/watch?v=LTgdtRfrp3Y). David and Pavlina use sound and light respectively to connect with people. Ask students to choose either sound or light and make a list of different impacts associated with different elements (for example, rain = calming, red light = danger). Can students think of examples of how sound and light work together? Students could create a mini-scene using sound and lighting effects to convey a particular emotion. This could either be in script form or, if resources allow, students could work in groups to act these out. Have them think about their favourite scenes in television and film to give them ideas.
5. Read the profiles and the poster in the Transportation chapter (pages 150–163) and ask students to create a fact card of their ideal mode of transport. This could be for air, sea or road – consider the area your school is in, how easy is it for students to travel to the nearest city, to the beach or into the countryside? Could that trip be faster or more efficient? Students should think about sustainability, efficiency and even aesthetics. Have students illustrate and name their mode of transport on their fact card before sharing with the group.