Work Experience equivalents for budding Engineers

The Department of Engineering's work experience programme for 2021 is another covid victim, you are highly unlikely to find a work experience placement anywhere this summer. This leaves a super-curricular* shaped hole in your UCAS or job application personal statement, these suggestions are DIY alternatives. Most are cheap or free, I mention a couple of pricier ones for completeness.

Engineers design and make things, they fix things. What maker opportunities do you have? Do you have access to any tools? To a bench vice? To a sewing machine? Can you invent and make a gadget for another hobby? Something for sport, to assist with music or to relieve the thumb strain for gamers. Have an idea, make a roughly working prototype, USE IT, make a better prototype… This is the approach used by James Dyson, it worked out OK for him. What have you learnt from this process?

Does your bike/skateboard/scooter run super-sweetly? Use Haynes manuals from the library or YouTube videos and learn how to fettle your favourite mode of personal transport so it runs perfectly. One colleague suggests buying a broken petrol lawnmower from ebay, stripping it down, cleaning it and reassembling it. Can you get it running again? But be warned, an engine might disgorge several pints of thick, tarry oil. Pick your workplace carefully, wear nitrile gloves and have plenty of old newspapers on hand. Again, what practical learning does this experience give you?

Making things is easier if you have access to some tools – a craft (Stanley) knife, a handle with interchangeable screwdriver bits and sockets, a saw… Look on market stalls, cheap DIY shops and online sites to find bits and pieces. Buy what you need when you need it. Cheap tools won't last forever but they will get you started and in a few short years you will be rich enough to buy top line products.

Are you a wannabe Aeronautical Engineer? Use paper aircraft to investigate flight scientifically, see these YouTube videos for more details: bit.ly/Make-paperang, bit.ly/Make-launcher, bit.ly/Make-science

Designing and making physical objects not your thing? Learn a new programming language. Learn Python is you have never used it, this is free and will be good preparation for University. Set yourself an objective like build a game of Snakes or Pong.   Are you an absolute beginner? Start with resources aimed at kids, you will make slower progress instead of getting completely stuck in jargon. If you have never done so, build a website and learn some javascript. Again, loads of free websites and YouTube videos help you get to grips with this open source software.

Seek inspiration in TV documentaries and YouTube videos. Lift your viewing above casual browsing with deeper research using the internet and libraries. Read some books from Engineering's suggested reading for budding Engineers: https://www.admissions.eng.cam.ac.uk/information/reading

Expensive robotics ideas in ascending price order, great fun if you can afford them, shop around for the best deals: BBC Microbit robotics kits, about £25, Ardunio starter kits, about £80 and Lego Mindstorms, about £300 plus the cost of a micro SD card to run Python.

Whatever you do, keep a journal with dates, either electronically or with a notebook, pen and sketches. When you come to write your personal statement, this record will help you sift out the highlights to fit a tight word count. And if you create worthwhile intellectual property this summer, the dates will be essential to prove you were the first to realise your idea. Your goal is to do something, learn from it and reflect on that learning in your personal statement.

Work experience will be out of the ordinary for your cohort of sixth formers but you have more opportunity to demonstrate drive, motivation and self-determination than most years. You also have a shortcut to the sense of empowerment that comes from making something that works, fixing a broken thing or tuning a machine to perfection for yourself. Have a good summer!

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*Supercurricula: Things outside the regular sixth form curriculum that demonstrate a current interest in Engineering related activities.