

**APPRENTICE
AUTOMATION
CHALLENGE:
RULES & INFORMATION
PACK 2020**

ELIGIBILITY

The challenge is open to teams of apprentices from companies, colleges and training providers of engineering and manufacturing technologies.

- More than one apprentice team can enter from any particular company, college or training provider.
- The competition is open to UK and International teams.

COMPETITION RULES

- All team members must be a member of the Institution of Mechanical Engineers at the time of the competition.
*To apply for **free** IMechE membership please complete the following [online](#) form.*
- All team members must be on an apprenticeship scheme at the time of the competition.
- Team size must not exceed 6 team members.
- Completed registration forms and team reports must be submitted by the deadlines.
- HQ must be notified of any changes of team members by contacting AAC.challenge@imeche.org
- All electrical equipment must be PAT tested prior to the finals event.

SCOPE

Design and make a product for automating a process in the home or garden, with the aim of improving the lives of the target market. This could be through improving people's capabilities at home, reducing energy consumption, or reducing waste from a task in the home.

The product needs to be suitable for mass production. You must make a full-size working concept of your idea, as well as write a report containing the details of what your product is, how it works, and how it will be manufactured. You will need to produce a business case for your idea, with some idea of what makes your product attractive to the market.

An example of an automated process in the home is a toaster, which takes bread and creates toast. A toaster would usually come with operating instructions, and some information about safe disposal.

Examples of ideas within the scope are: an automatic seeding machine, or an automatic recycling sorter. We will not accept a purely software solution to the problem, or something that has an industrial application.

Other acceptable examples are:

- Automated Baby Gate
- Charger built into household surfaces
- Automatic waste compactor
- Wall painting robot
- Automatic Clothes Folder - device to fold clothes laid onto the device.
- Automatic Pet Feeder
- Automatic watering system using rain water harvesting and humidity sensors
- Automatic rubbish removal system
- Automatic letter opener
- Kitchen surface cleaning system

DELIVERABLES

Your product will be marked based on a 50/50 grading of your final prototype and your report.

For your report, you must have a detailed specification of what your product is and how it works. You must also include details of how to operate your product. Great consideration must be given to how your product will be mass produced. We expect to see some detail around all the processes that you will consider using to manufacture your product in a safe and economical manner. As part of your report, you must include a business case detailing the costs involved, your target market and the unique selling point of the product. Please also consider the product lifecycle, health and safety, and any other regulations which will have to be adhered to in order for your product to be used in the home.

The final demonstration event will be an opportunity for you to showcase your product to all who attend. During the day, judges will be assessing each participating team on how well you delivered upon key criteria.

TIMINGS

Registration form by **31 January 2020**

Submit report by **15 May 2020** (50%)

Prototype ready for final **10 July 2020** (50%)

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July
Registration Form			31 st						
Report Submission							15 th		
Competition Final									10 th
Design Specification									
Manufacture Prototype									
Final Documentation									
Manufacture Demo Unit									