EPro8 Challenge

Engineer Problem Solve Innovate

Getting the Most from your Equipment

Summary

Your EPro8 School Equipment comes with 30 associated challenges. Each of these activities is an adaption from one of the challenges we have used at events in the past.
Each challenge has:

- Teacher's Notes
- Challenges
- Electronics Simulator
- Tutorial

The challenges are designed to be student led. Students can undertake the challenge on their own with little or no teacher input.

Which Challenge?

All teams should start with the "getting started" challenge. This explains how to use the equipment and includes important information such as how to correctly pack it up afterwards.

The remaining challenges are in no particular order. All challenges have easy parts and more difficult parts. The teacher or the students should choose whichever challenge appeals to them the most.

What to Aim For

Teams who are new to engineering and problem solving may only be able to complete some parts of the chosen challenge. There is NO expectation for teams to be able to complete all parts of a challenge.

Having completed the first parts of the challenge, they will now have something to attach future learnings to as they watch the tutorial, which will explain the later parts of the challenge.

As teams become more expereienced at engineering and problem solving they will be able to complete more parts of a given challenge.

Finess Test

All the constructions should be "fit for purpose". You are not just meeting the criteria, but doing a good job as well.
This means that the builds are of a good standard and all components are bolted together.

Measurements

Carefully check the measurements as described in the challenge cards. The stated measurments may be “approximately”, “at least” or “less than”.

If the measurement says approximately 400mm, we interpret this as closer to 400mm than 300mm or 500mm: ie 350mm to 450mm.

Maths

Where challenges have a mathematics compoonent, the numbers and maths should be written down and laid out cleary, including:

- Units
- Words to describe what the measurment is
- Show all working

See the module “EPro8 Maths” for exercises on laying out practical mathematics.

Teacher’s Notes

The Teacher’s Notes provide a background for the challenge, highlight any extra equipment that is required, and what to look for from the student’s construction.

Additional Equipment

Some challenges will require the use of additional resources. These will be either equipment that most schools should already have (such as stopwatches, paper, calculators, weights) or things that can be easily sourced locally (such as rubber bands).

If your school does not have a set of weights, there a separate document describing how to easliy make your own set of these.

You should read the Teacher’s Notes carefully before setting a challenge for your students, to ensure you have access to all the equipment required.

Electronics Simulator

The EPro8 School Equipment utilises the online Electronics Simulator. The Electronics Simulator contains a model that should be similar to what they have built. Students can then motorise their build and add other electronics features.

Students should have access to a device so they can complete these parts of the activities.

Tutorial

Each challenge has a tutorial video where we demonstrate our solution. Students should watch the tutorial AFTER they have attempted the challenge.

Team Size

The recommended team size is FOUR. A team of four is big enough for teams to be able to share ideas and work together, yet small enough that each team member hss the opportunity to make a signifincant contribution to the outcome.

Time Frame

A typical challenge would take around two hours to complete. But these challenges are NOT a race and the time frame allowed should be flexible.