

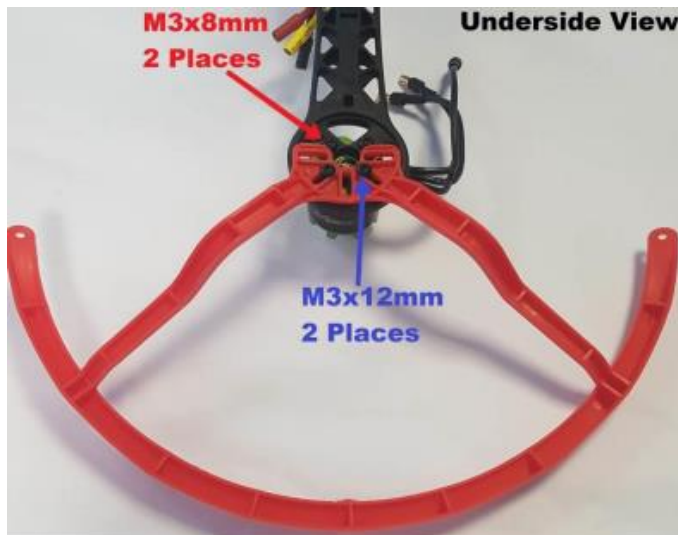


## PRE -EVENT CHALLENGE

### The Task

You are a test engineer, working to create a new Quadcopter to explore Mars, you have a problem! The rotor guards can be easily broken when the Quadcopter crash lands or bumps into things. Damaged rotor guards need to be easily and quickly repaired and/or replaced so you can continue to fly as quickly as possible. For safety reasons the quadcopter cannot fly without any of the rotor guards in place to protect the propellers from damage and damaging people. Can you come up with a better design and build it?

### What they look like now



Red Rotor guards are currently made of plastic



**Raytheon**  
UK



**STEM**  
SCIENCE, TECHNOLOGY  
ENGINEERING & MATHS



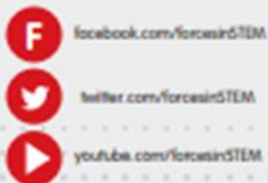
### What you will need

- Pencil
- Paper
- Anything you want!



Design Ideas...

Write down your ideas and sketch out some designs on the space below:





The Build

Now you will need to build your design.

Materials

What materials could you use? Examples:

- Metal
- Plastics
- Wood
- Card



What material/s did you choose? .....

Why? .....

How is your design better? .....

What are the downsides of your design?.....

