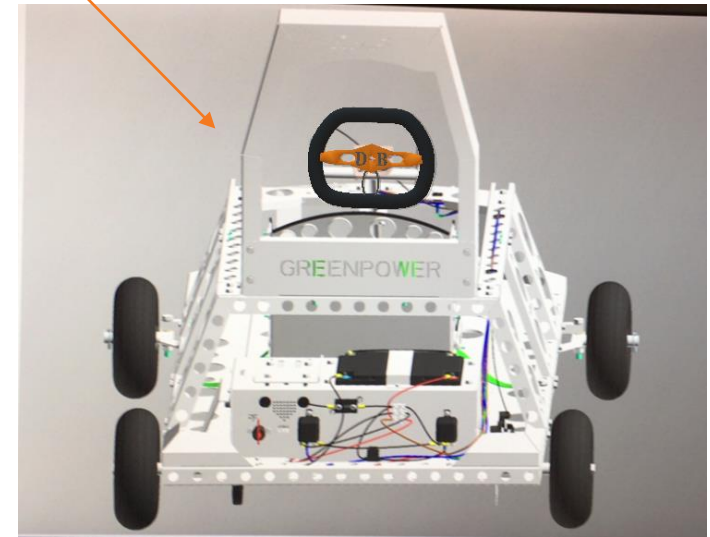
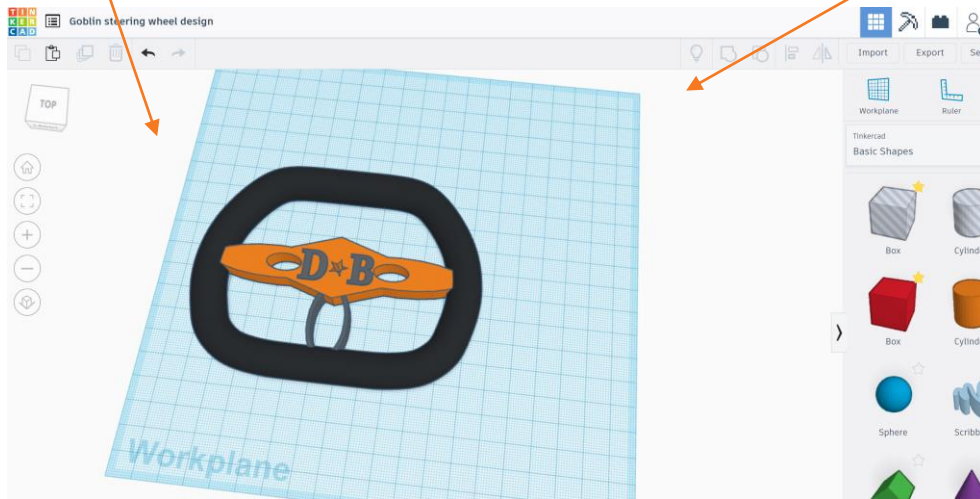


Greenpower steering wheel design virtual workshop

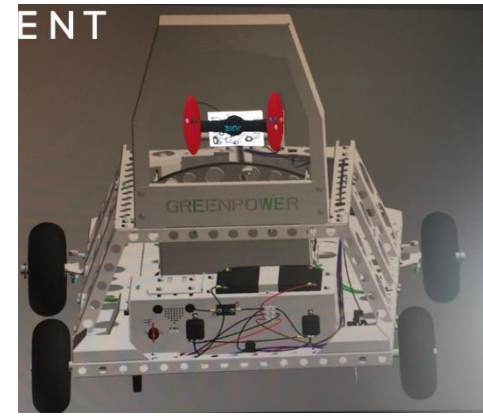
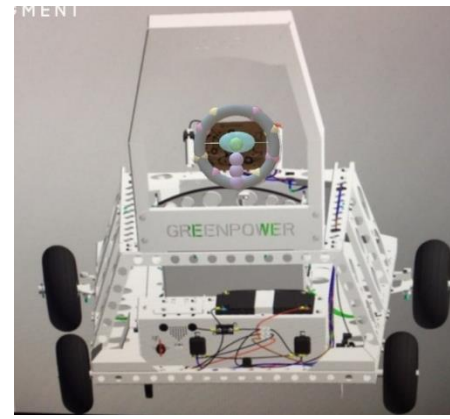
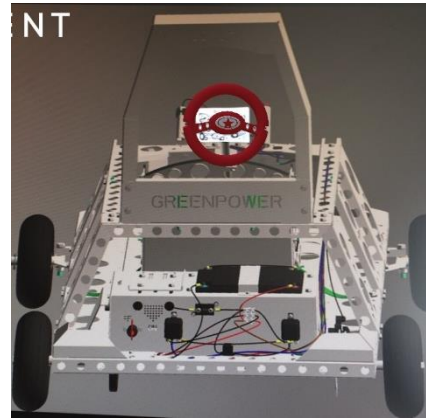
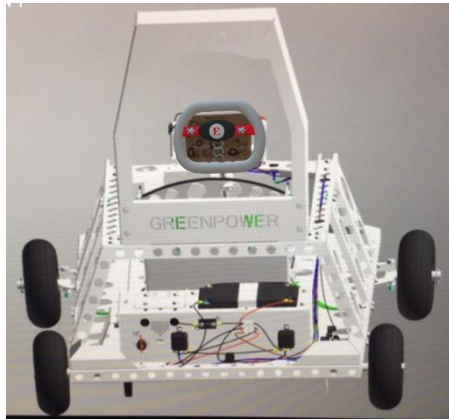
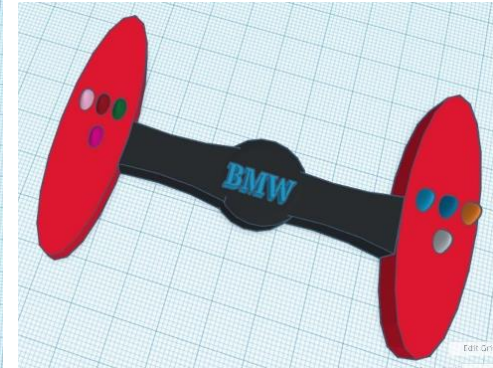
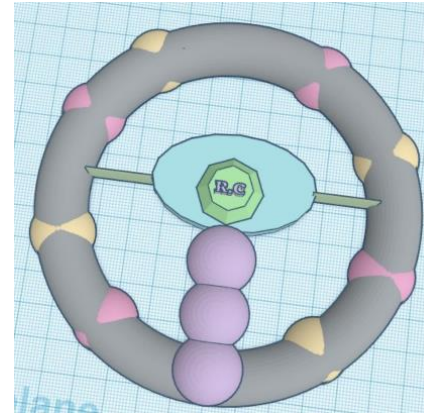
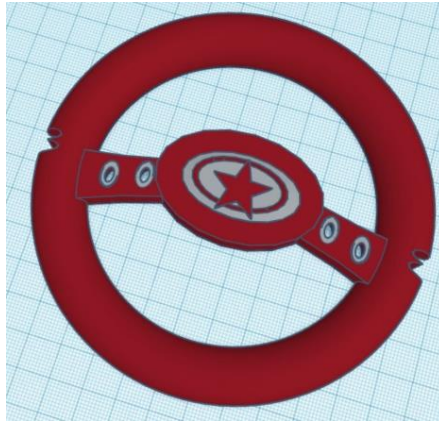
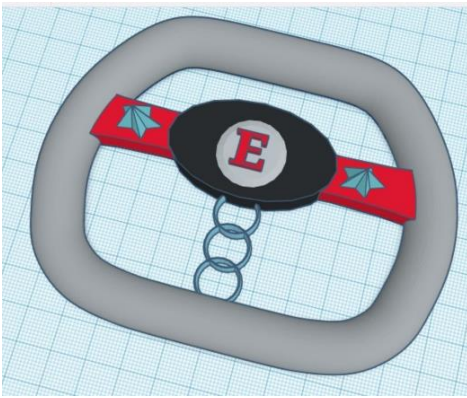
Diane Burton
WMG Outreach

AIMS:

- Use Tinkercad to design a steering wheel for the Goblin.
- Email a link to your digital design file to WMG, for them to produce a photograph of your design on the Goblin in augmented reality. This photograph will be emailed to you.
- Include photographs of your design work in your Goblin portfolio.



Examples from previous Greenpower groups



Create your design in Tinkercad software

1. Use Microsoft Edge or Google Chrome web browser and go to www.tinkercad.com

Tinkercad is free to use and works in the web browser, so there is no software to download.

Click **Join Now** to set up an account – this screen appears. Depending on your situation, either **Create a personal account** or you may wish to explore the **Educators start here** option.

Start Tinkering

How will you use Tinkercad?

In school?

[Educators start here](#)

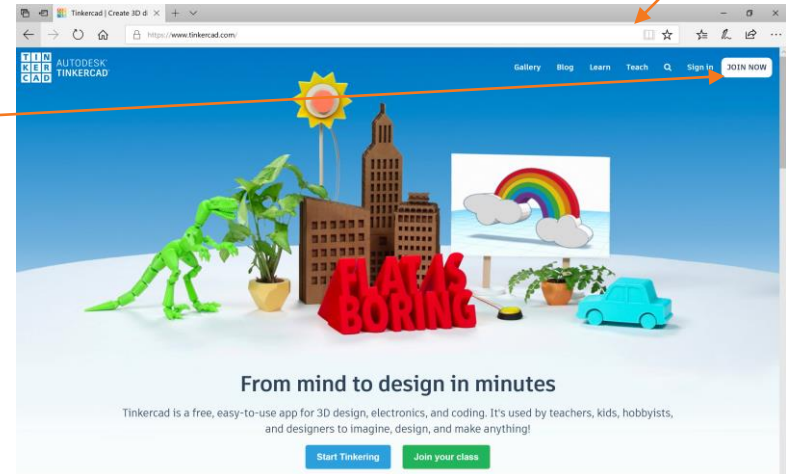
[Students, join a Class](#)

On your own

[Create a personal account](#)

Already have an account?

[Sign In](#)

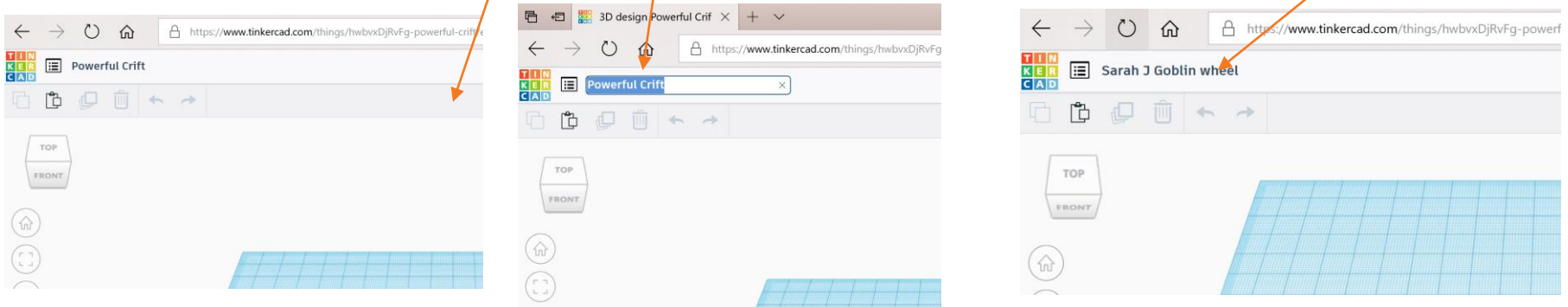


Once you have your account, on the dashboard screen, click Create new design [Create new design](#) and have a go at dragging some shapes down.

Click here to download a [Mouse Control Diagram](#) and here for [Tinkercad Basics](#) and try out the simple exercises in Tinkercad.

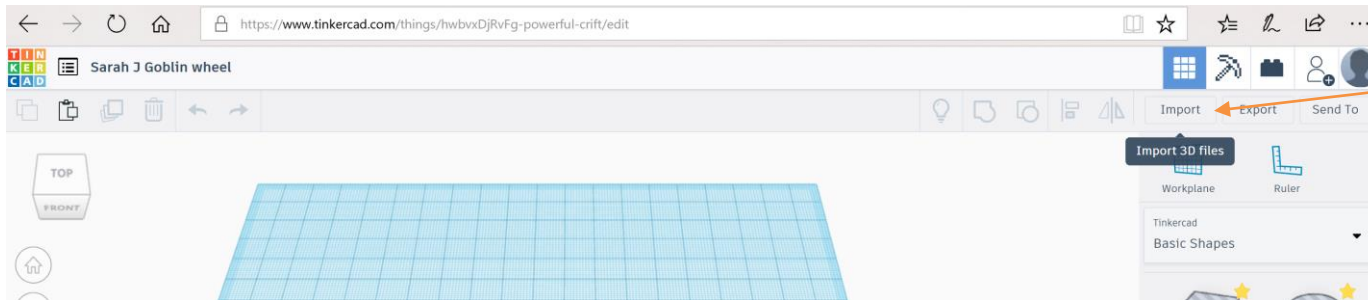
Create your design in Tinkercad software

1. Click Create new design, a workplane appears. Click on the random name generated by Tinkercad and type in a new name of your choice for your design and press Enter.



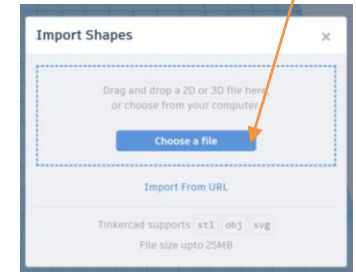
2. Click on the file [steering wheel 1 stl file](#) – it will download to your computer. Do the same with the file [steering wheel 2 stl file](#). Find the files in your Downloads folder and move them to a place where you will find them easily – e.g. create a folder called Goblin within your Documents folder.

Create your design in Tinkercad software

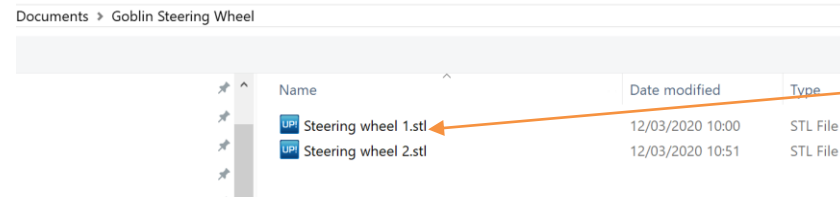


1. On your Tinkercad design, click Import

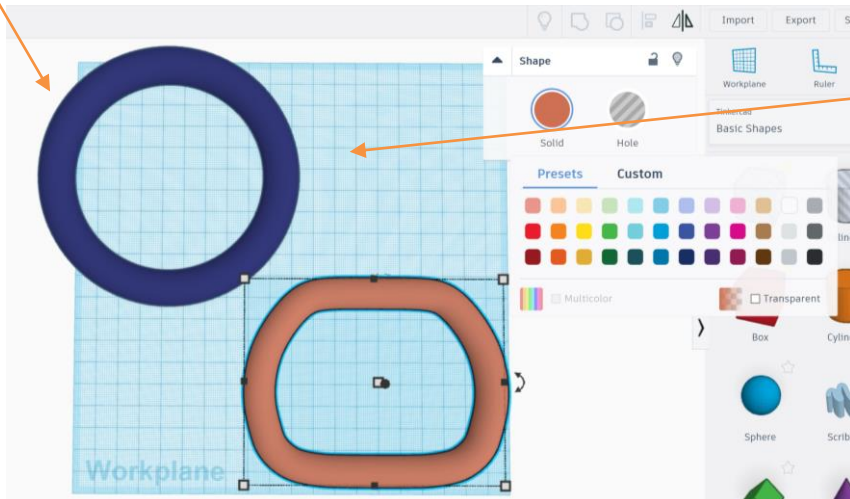
2. Click Choose a file



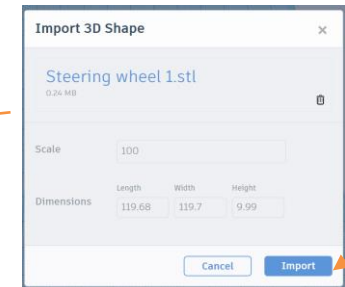
3. Find your saved stl files, double click on Steering wheel 1.



5. Now import Steering wheel 2. Drag them into place.



4. This box will appear, click Import and the steering wheel will appear in your Tinkercad design.



6. You are now ready to watch this [video tutorial showing you how to use Tinkercad to design a steering wheel](#). Then begin work on your steering wheel!

Viewing a design in Augmented Reality

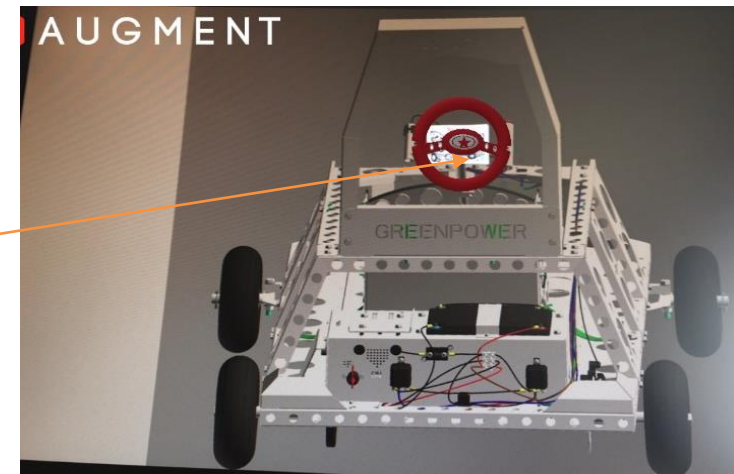
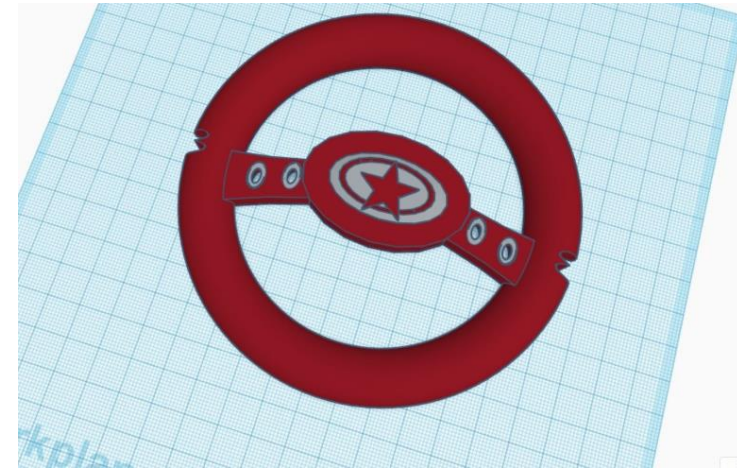
Augmented Reality (AR) uses a real environment (here a photo of the Goblin) and simply overlays virtual information on top of it (in this case your steering wheel digital design file).

An app called Augment 3D has been used in this instance to overlay the steering wheel design onto a photo of the Goblin.

Something called a Tracker is placed in the position where you want the digital file to be overlaid on the photo.

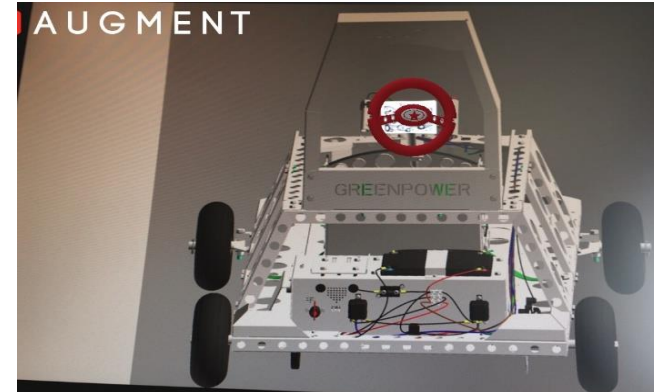


The Tracker looks like this, it is placed on the end of the steering column on the photo of the Goblin so the Augment app knows where to attach the steering wheel design file.



Creating a screenshot of your design in AR

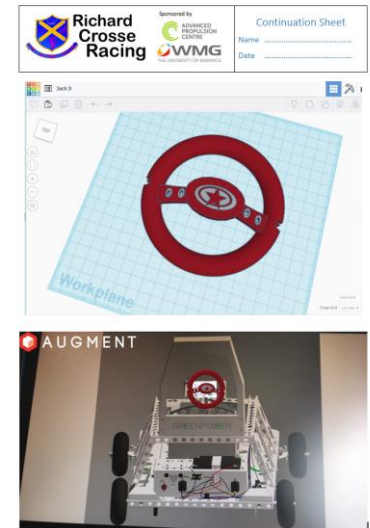
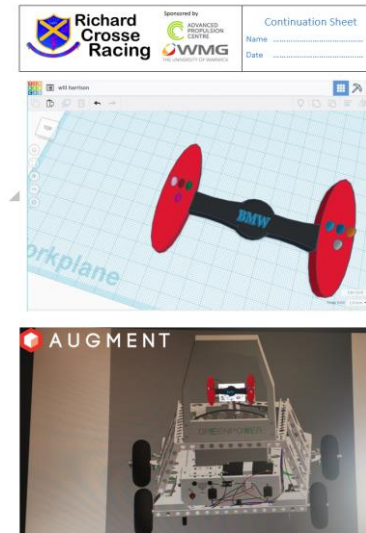
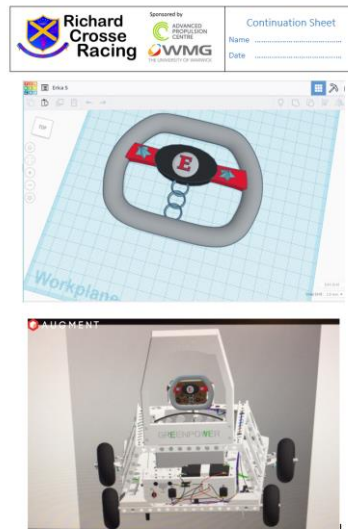
1. You need to send a link to your Tinkercad design to Diane Burton at WMG – instructions on the next slide. Diane will then use the Augment app to produce a screenshot of your steering wheel in augmented reality.
2. Diane will email the screenshot image back to you.
3. You can then put this in this word template, along with a screenshot of your design in Tinkercad. **This document can then be included in your Goblin portfolio.**



Here are examples from previous years.

Here is a link to this [Word template document](#).

You can add your own school logo.



Generating a link to your Tinkercad file

Design properties

Design name
Goblin steering wheel design

Design description
Give your users something to talk about. Add a short description to your design.

Tags (10 maximum)
Enter tag(s) here separated by commas. Press Enter to add a tag. ex. tag1

Privacy
☐ Private
☒ Public Viewable and discoverable by everyone

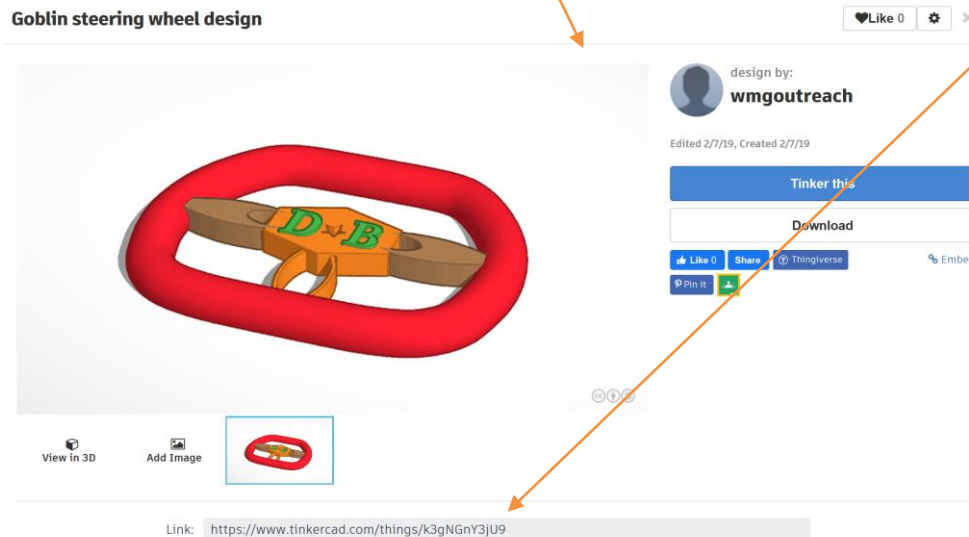
License
Attribution-ShareAlike 3.0(CC-BY-SA 3.0)

This license lets others remix, tweak, and build upon your work even for commercial purposes, as long as they credit you and license their new creations under the identical terms. [More info on Creative Commons licenses](#)

Cancel Save changes

1. Go to the Tinkercad dashboard, find your design and click the cog top right of your design.
2. Click Properties and this appears.
3. You need to change Privacy to **Public** in order to be able to share the design.
4. Click Save changes.

5. Now click the centre of the design and the screen below appears



6. The link appears at the bottom. Click on the link to highlight it, then copy it and email it to Diane, d.s.burton@warwick.ac.uk

