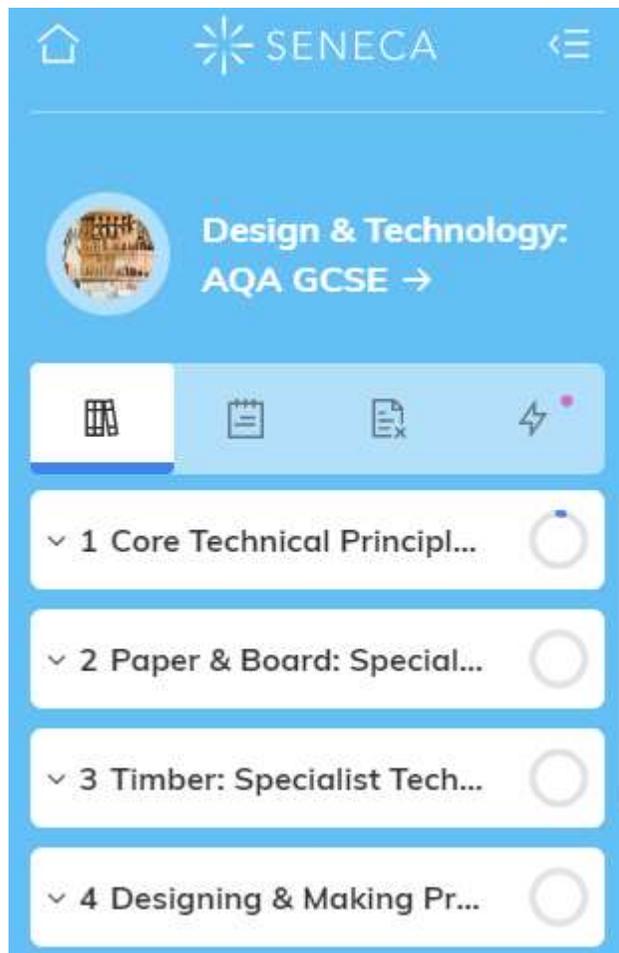


# Online revision



Although this is set up for AQA GCSE Design and Technology the content is very similar to many of the areas you will need to know and cover in readiness for your Engineering Exam.

Work your way through the sections and see how you get on.

Where can you place yourself on the leader board?

 SENECA

To join Mrs Firth's class: Eng AFi 2019-21

1. Go to the website:  
[app.senecalearning.com/join-class](https://app.senecalearning.com/join-class)
2. Sign up as a student
3. Type in the class code: [vuwaa7k70l](#)

Or scan the QR code with your phone





# INTERACTIVE MOBILE PDF APPS FOR ENGINEERING

V.Ryan © 2019 - 2020

These pdf apps are ideal for revision, theory lessons, preparation for examinations and independent learning. They can be stored and used on schools systems and distributed to pupils and students. They are interactive and link to further information from technologystudent.com. They can be used without an internet connection, as a stand-alone revision and learning tool. No editing allowed.

**IMPORTANT - IT IS RECOMMENDED THAT YOU DOWNLOAD THE PDFS**  
When using a PC, right click on the App Icon and select "Save target as". You will then be able to save pdf Apps to your computer /device.

**POLYMERS FROM CRUDE OIL**

TO ANSWER ALL THE QUESTIONS YOU WILL NEED TO DOWNLOAD THE 'SOURCES, ORIGINS, POLYMERS' APP, FROM THE INTERACTIVE MOBILE APP SECTION OF [www.technologystudent.com](http://www.technologystudent.com)

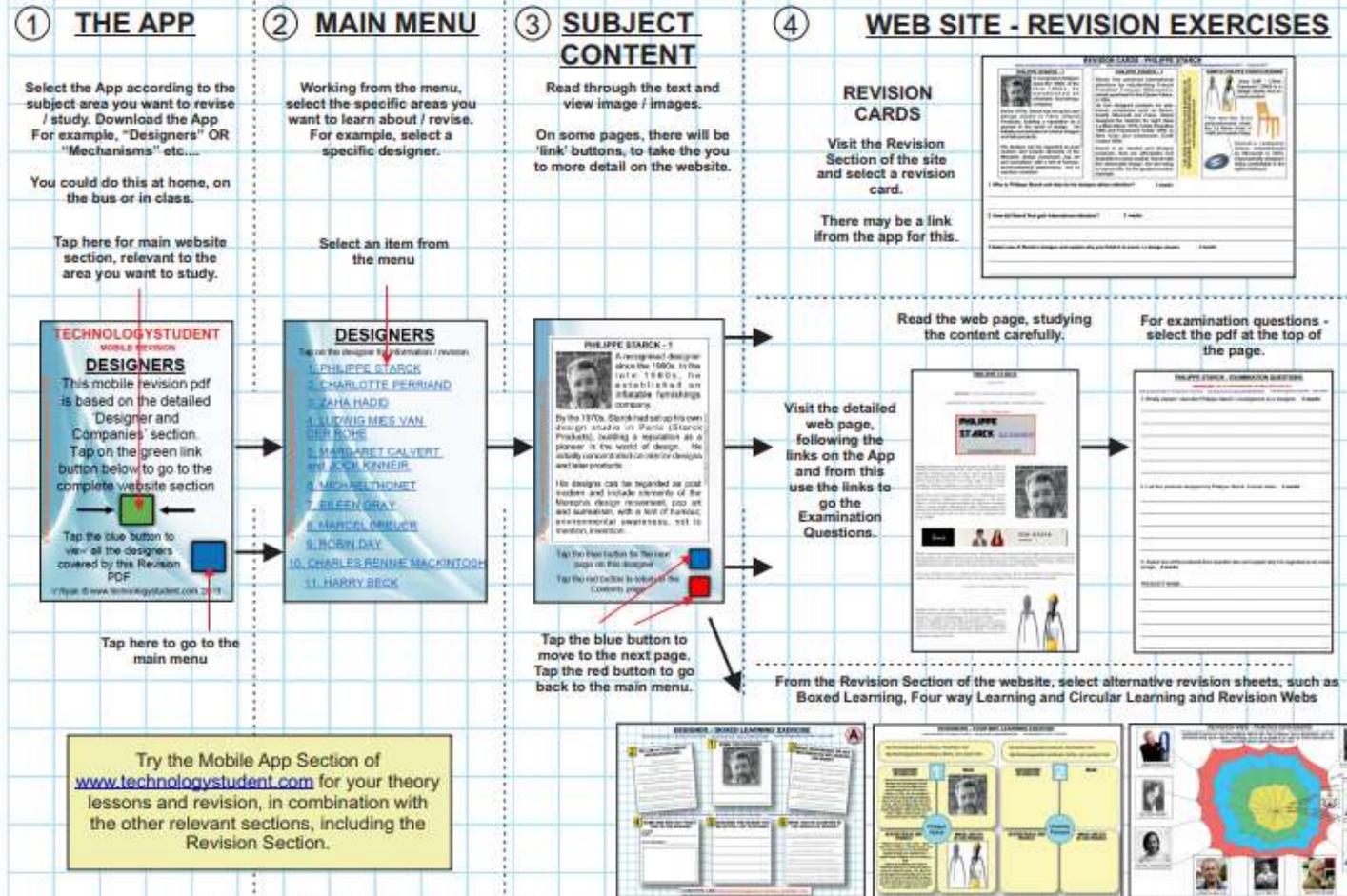
**LINK**  
[http://www.technologystudent.com/mobapps/materials\\_sources3.pdf](http://www.technologystudent.com/mobapps/materials_sources3.pdf)

Once you have downloaded the App, you can use it to navigate the website. You may need to follow the links on each page of the App, to research / complete answers to all the questions.

**ARE YOU READY?  
USE THE MOBILE App!!**

FOR INFORMATION ON A RANGE OF POLYMERS DOWNLOAD THE APPS: **MODERN MATERIALS** and **MORE-POLYMERS1** from the Apps section of [www.technologystudent.com](http://www.technologystudent.com)

## HOW TO USE THE MOBILE INTERACTIVE PDF APPS EFFECTIVELY



## Working Safely

- 1. True or false? You should isolate an electrical machine from the mains to change any of the parts.**
- 2. If you're using noisy machinery, what should you wear?**
- 3. Give two items of protective clothing that should be worn when handling hazardous materials.**
- 4. When using machinery, clothes can get caught in the machine. Give one precaution that can be taken to reduce the risk of this hazard.**
- 5. Give two precautions not yet mentioned that you should take when using machinery.**
- 6. Mrs Firth is using a toxic chemical. How can she avoid inhaling vapours from the chemical while she is working with it?**
- 7. Why is it important that she disposes of the chemical properly?**

# 2D Design



# 2D Design – Vectorising Bitmaps

## START – ALL PROGRAMS – DESIGN TECHNOLOGY – 2D DESIGN V2

The drawing tools are on the left

**Select** – to select multiple items hold down SHIFT on the keyboard and click the lines you want

**Straight line tool** – click to place the start of the line, click to place end of line

**Curved line tool** – click to place the start of the line, click to place the first bend, second bend, etc and right click to finish the line

**Fill** – select the area you want to fill, click no in the first pop up and yes in the second pop up if you want and islands, and no if you don't

**Draw a Circle** – click to place the centre, then click to place a point on the circumference.

**Draw a Rectangle** – click to place a corner, then click to place the opposite corner.

**Text** – click to place text. The box below appears:

Click to change font, size etc.

Enter text

Click ok

**Select** – to select multiple items hold down SHIFT on the keyboard and click the lines you want

To open up the blank stand, go to File, Open then...

Shared Area  
Design Technology  
Electronics  
KS3  
Year 7  
Flashing Light Display Stand.dtd

Click on 'line' (at the top of the screen)

Click on 'Thick'

And type in a thickness. 0.5mm for thinner lines, 2mm+ for thicker lines

Deleting – click on a part you want to get rid of and use the DELETE button on the keyboard. To delete part of a shape, click and hold on the DEL ANY icon.

Delete anything

Delete part of a line

Draw a box, and delete the contents

Lock to grid

Lock to an angle

Zoom in

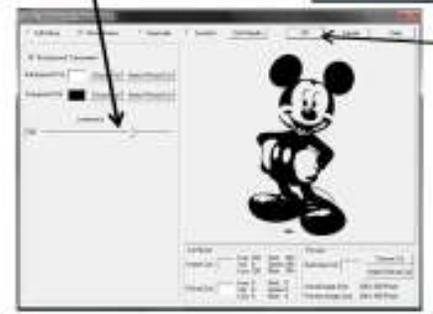
Zoom out

DEL ANY

- 1 Paste your image into 2D design (copied from Internet etc)
- 2 Click the 'vectorise bitmap' icon (left hand task bar)
- 3 Click on the image
- 4 This box appears. Change the image to monochrome. Click OK
- 5 Use the slider to change the quality of the image



For a black and white image check the box for 'monochrome'



**DONT FORGET TO KEEP SAVING YOUR WORK!**



Techsoft 2D are offering a free home license for students until at least the end of June.

1. Download the software from the following web link:  
[www.techsoft.co.uk/DesignV3Download](http://www.techsoft.co.uk/DesignV3Download)
2. When the software has been installed and you run it for the first time, it will ask for an activation key, your individual activation key is:  
**1020 JLJP 5YYD UPIK M96N**

Alternatively, please use the link to gain access.  
<https://www.techsoft.co.uk/adverts/coronavirus-covid-19-student-request>

There are a number of tutorials within the programme and also available by searching online. Try and use these to develop your 2d Design skills.



## Virtual Faraday Challenge

### How to enter (and win!)

#### What you need to do

Your brief is to design a product which helps Airbus support people in times of need. Remember that disasters can happen anywhere and that different types of disaster bring their own problems. You will need to think about these when you are planning your design. Watch the Airbus video carefully to help think about the types of disaster you might be planning for.

Your product must:

1. be able to deliver aid such as first aid supplies, fresh water and food, to those affected in the disaster zone.
2. be able to be transformed into something else that can help in the area. This cannot be simply providing different supplies; it must be something different. Think about what else people might need in the disaster zone as well as food and medical supplies.
3. be able to be cleared from the site once it has no further use in the disaster zone.
4. include at least two electrical components which would work effectively so you will need to think about circuits.

You only need to send us your design but if you want to build a model, that's great, we would love to see them!

#### Who can enter

You can choose which category to enter your design in from:

- Secondary group entry (aged 11 to 15)
- Secondary individual entry (aged 11 to 15)
- Primary group entry (aged 7 to 11)
- Primary individual entry (aged 7 to 11)
- Family entry (must be a maximum of 6 people and include no more than two adults and at least one person aged 7 to 15)



# How to enter

When you are ready to submit your design, you must put it on a PowerPoint presentation which must follow the following guidance:

- Must be no more than 10 slides, including the title slide.
- The font used must be no smaller than Ariel 20 point.
- Can include video(s) no longer than 2 minutes in total and photographs, where relevant.
- Must be all your own work.
- Must include a title page which has the following information:
  - Category you are submitting in (see above)
  - Team name (which will be used if your entry appears on the IET Faraday website)
  - Name(s) of the entrant(s) (which are for internal use only and will not appear on any public website or social media site)
  - Your location (Town/City, Country)
  - Adult contact email. (Please ensure this is the email address of your teacher, parent or carer and that they are aware you are using this to submit your entry.)

Entries can either be emailed to [faraday@theiet.org](mailto:faraday@theiet.org) or sent via [wettransfer.com](http://wettransfer.com). Entries will be judged on a weekly basis.

## How to win

We will only be able to judge your idea on what you present to us so you will need to think carefully about how you can communicate your ideas to us clearly and concisely. We will use your submission to judge the extent to which:

- your design meets all the criteria set out in the design brief **(8 marks)**.
- the product will provide a realistic and effective way of providing support in times of need **(5 marks)**.
- you explain how the product is constructed, including details of the resources used **(8 marks)**.
- you provide details of how it can transform from the delivery stage to another use and how it can be cleared from the site when finished with **(10 marks)**.
- the electronic components used are appropriate for the product design **(7 marks)**.
- the materials used are appropriate for the structure and/or mechanics of the product design **(7 marks)**.
- the submission is clear and of the correct length and presentation type as detailed in the guidance notes **(5 marks)**.

## Good luck engineers!

For any queries, please contact [faraday@theiet.org](mailto:faraday@theiet.org).

Visit [theiet.org/education](http://theiet.org/education) or follow us on [Instagram](#), [Facebook](#) and [Twitter](#) for more activity ideas.

