

Design Technology – Y11 into Y12 Transition Work

In Term 1 of Year 12 you will be developing your workshop skills through a series of focussed practical tasks. One of which will be learning how to use the Denford CNC Router to design and make a modular desk organiser. In preparation for this design and make task you are required to develop a range of iterative and creative design ideas for the desk organiser.

Task 1: Initial Design Ideas: create an interesting and creative **design page featuring a range of initial design ideas** for your modular desk organiser. Your designs must meet the design task & specification on Page 2.

Task 2: Final Design: draw a **final design** of your modular desk organiser. Your final design should display good quality graphic communication skills (i.e. good quality sketching, use of fine line outlines, use of colour shade and tone, 2D and 3D sketching techniques, **annotations including dimensions**). Your final design must link to your initial design ideas and **MUST** meet the design task & specification on Page 2.

There are lots of other things you can do to strengthen and sharpen your design skills before September:

Task 3: Sketching: being able to quickly sketch design ideas is a great skill! There are lots of You Tube tutorials to help you develop your skills, we recommend following some tutorials by 'product designer maker' https://www.youtube.com/channel/UC62Ngds_ZBWkX-6yFV-10UQ

Task 4: CAD/CAM: You can use any software you like for this as there are lots of free and paid apps. We currently use Autodesk Inventor in school, it is also free to download this software at home. There are various tutorials on YouTube, but we recommend subscribing to CAD/CAM tutorials. Please contact Mrs Ashman if you require a verification letter to download Autodesk Inventor at home.

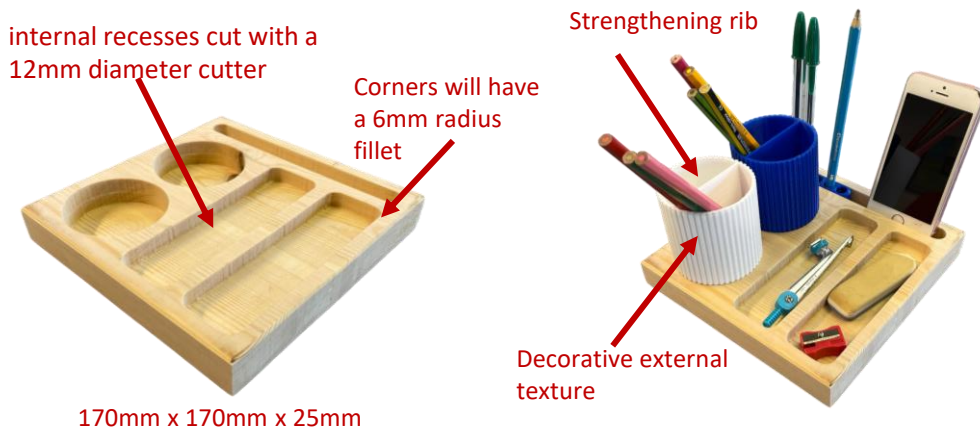
Task 5: Recommended viewing: BBC 4 "How to Make" on iPlayer (time limited). The toothbrush episode is particularly worth watching as it shows a great example of testing materials and design iteration. <https://www.bbc.co.uk/programmes/m000gwzg/episodes/guide>

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Summer Design Task: Using the CNC Router

In Term 1 of Year 12 you will be developing your workshop skills through a series of focussed practical tasks. One of which will be learning how to use the Denford CNC Router to design and make a modular desk organiser that incorporates a wooden base that is manufactured using the CNC Router and includes a maximum of two removeable modular components that are 3D printed.

- **Specification points:**
- The wooden base must measure 170mm x 170mm x 25mm.
- The wooden base will be cut using a **12mm diameter cutter**.
- All internal recesses need to be 10mm in from the outer edge, and can only be a maximum depth of 17mm.
- All internal rectangular forms will have a 6mm radius fillet because of the size of the cutter
- The 3D printed components must fit into a part of the wooden base, be removeable and include
 - a decorative element
 - A durable structure



Summer Design Task:

In preparation for this design and make task you are to develop a range of iterative and creative design ideas for the desk organiser that meet the design task and specification points.

Things to consider:

- The size limitations of the wooden base
- What stationery items will your desk tidy hold / organise?
- What are the sizes of the pieces of equipment, e.g. diameter and length of a standard pencil or pen
- What features / functions will the 3D printed modules add to the design?

In your design work we are looking for:

- A range of creative design ideas that demonstrate an iterative approach to the problem.
- Good quality graphic communication skills (i.e. good quality sketching, use of fine line outlines, use of colour shade and tone, 2D and 3D sketching techniques, notes and labels)
- A final design idea with measurements



Mood-board research: inspirational designs

