GCSE

Design and Technology:

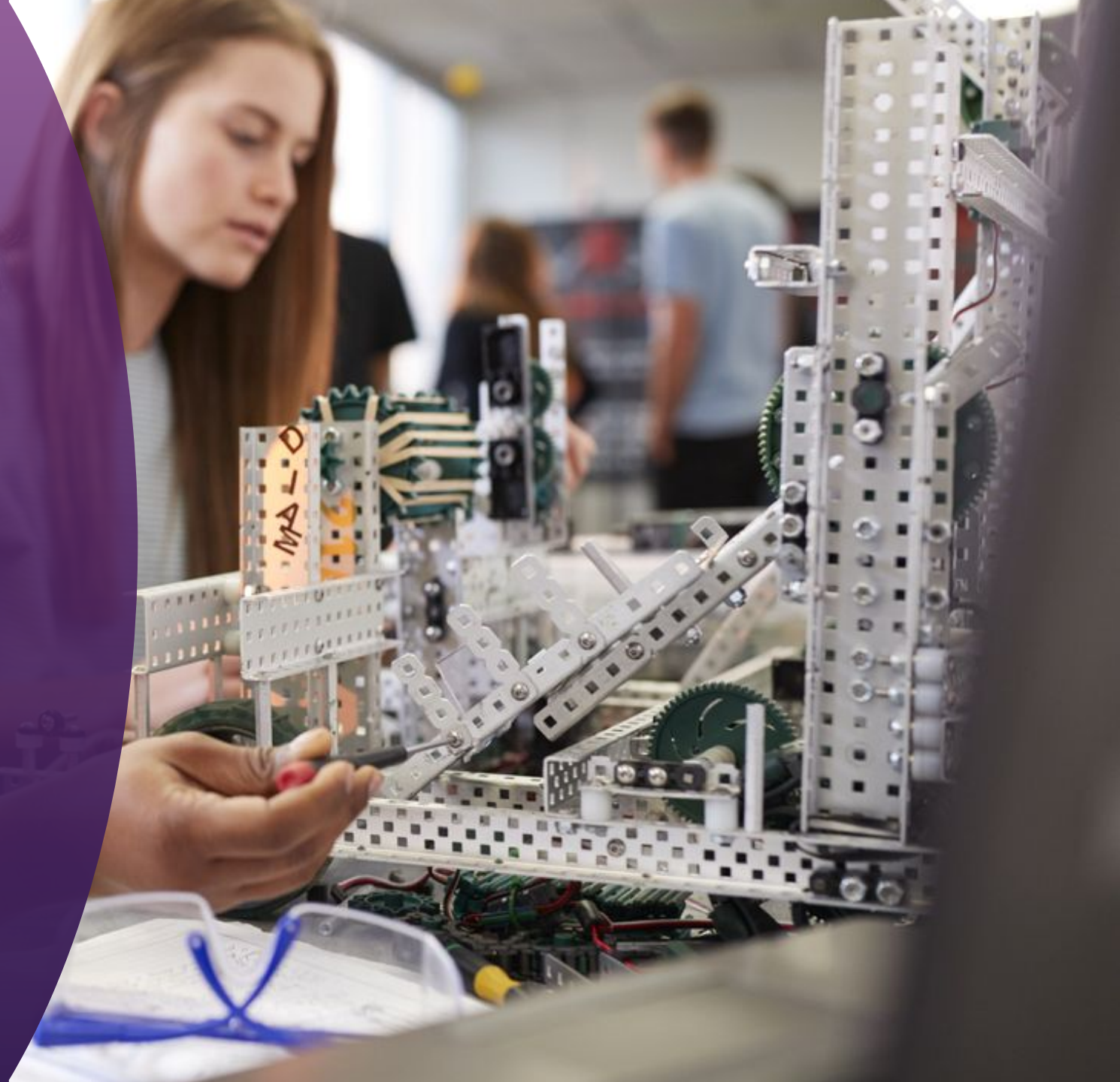
Paper and Board

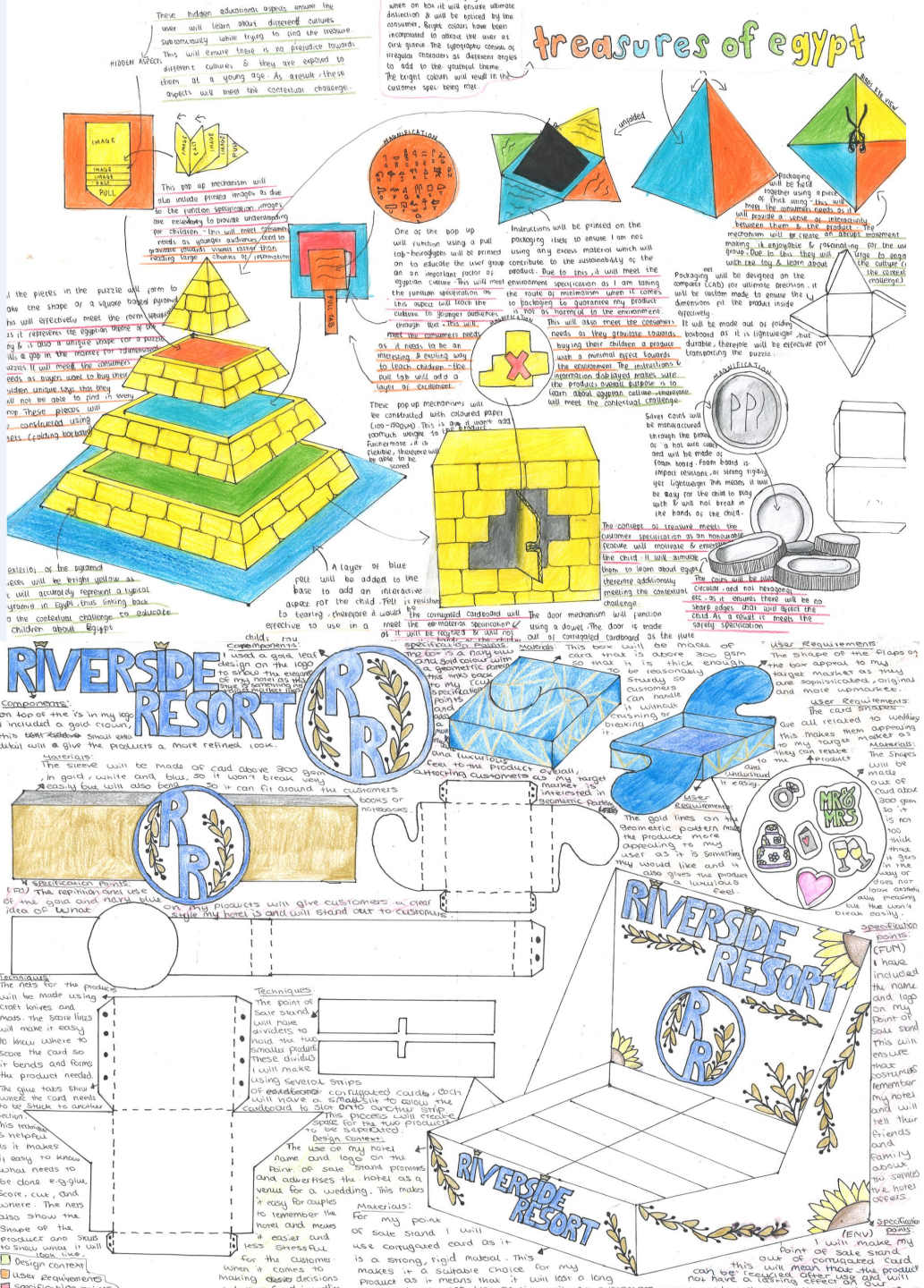
NORTHAMPTON SCHOOL FOR GIRLS

What is Design and Technology?

Studying **Design and Technology** is a valuable foundation for future careers and further study. Developing students skills include:

- **Problem-Solving and Creativity:** Design and Technology (D&T) encourages students to approach problems with creative solutions. This ability to think critically and innovate is highly sought after in various career fields.
- **Practical and Technical Skills:** Students gain hands-on experience working with materials and technologies. These practical skills, including using tools, machinery, and software, are useful in many careers, especially in engineering, architecture, and fashion.
- **Time Management and Project Planning:** Through coursework and projects, students learn to plan, manage, and deliver projects within set timelines. These organizational skills are beneficial in nearly any career path.





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Course Overview and structure.

For this GCSE course you will have a single and a double lesson each week.

Year 10:

You will study core technical aspects of all design areas including; metals, papers and boards, polymers, systems, fibres and textiles. You will cover your selected specialist area in more detail. *This will be taught during your single lessons.*

A mini NEA is also completed where students complete a design project from the research stages through to manufacture and evaluation of a final outcome. *This will be completed in your double lessons.*

The exam board releases the Non Exam Assessment contexts on 1st June in yr 10. At this point you will start your Non exam assessment and all work you complete will count towards your final grade.

Year 11:

A full NEA is completed where students identify a problem and develop a range of potential solutions, develop those ideas until a final outcome is produced which will then be tested and evaluated.

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Assessment

Written exam:

(50% of the overall grade)
The paper consists of two sections.

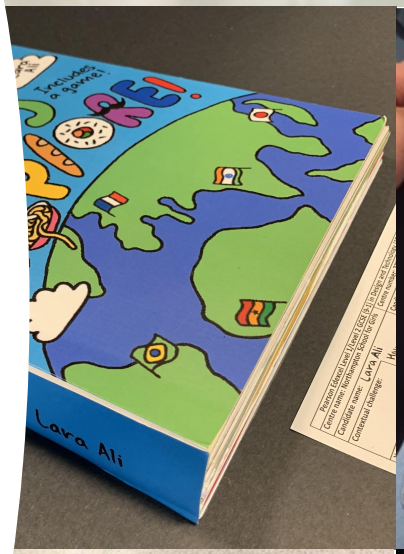
Section A is assessed on the core content covered by all subjects.

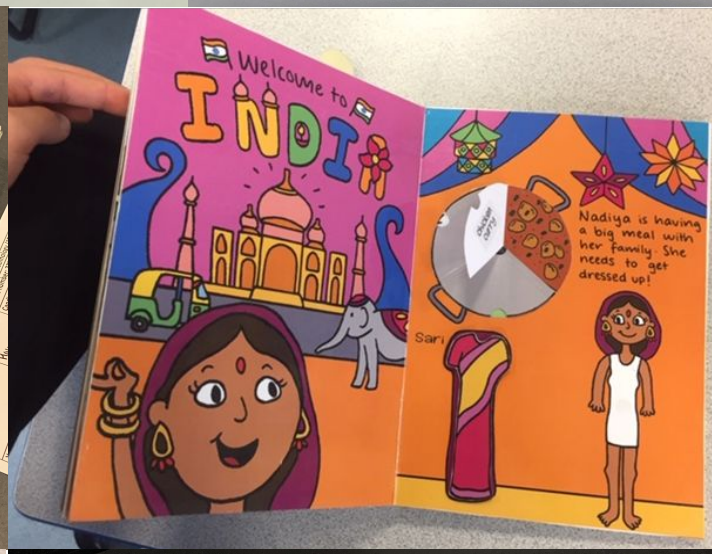
Section B is assessed on the specialist category students have chosen: **Papers and Boards** (Graphics).

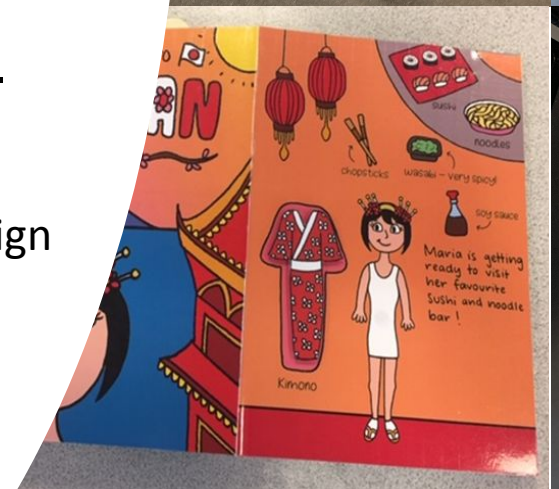
Coursework- Non-Examined Assessment (NEA):

(50% of the overall grade)

Students select a question and identify a problem they then design and make solutions for. There are four parts to the assessment: Investigate, Design, Make and Evaluate.







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Design and Technology: Component 1: Written EXAM

50% of the qualification, 100 marks

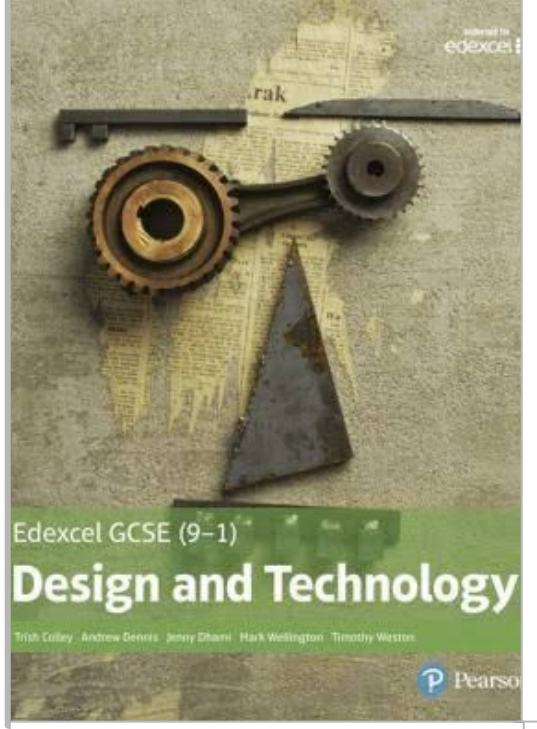
The paper consists of two sections. Section A is assessed on the core content covered by all subjects, and Section B is assessed on the specialist category students have chosen:
1DT0/1B - Papers and boards
1DT0/1E - Textiles

Section A: CORE

This section is 40 marks and contains a mixture of different question styles, including open -response, graphical, calculation questions. There will be 10 marks on calculations in section A.

Section B: MATERIAL CATEGORIES

This section is 60 marks and contains a mixture of different question styles, including open-response, graphical, calculation questions in Section B.



Please check the examination details below before entering your candidate information

Candidate surname | Other names

Centre Number | Candidate Number

Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Monday 19 June 2023

Morning (Time: 1 hour 45 minutes) | Paper reference **1DT0/1B**

Design and Technology
COMPONENT 1: Papers and Boards

You must have:
calculator, ruler, HB pencil, protractor, pair of compasses | Total Marks

Instructions
- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- Calculators may be used.
- Any diagrams may NOT be accurately drawn, unless otherwise indicated.
- You must **show all your working out** with **your answer clearly identified** at the **end of your solution**.

Information
- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice
- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over

P71371A

Pearson

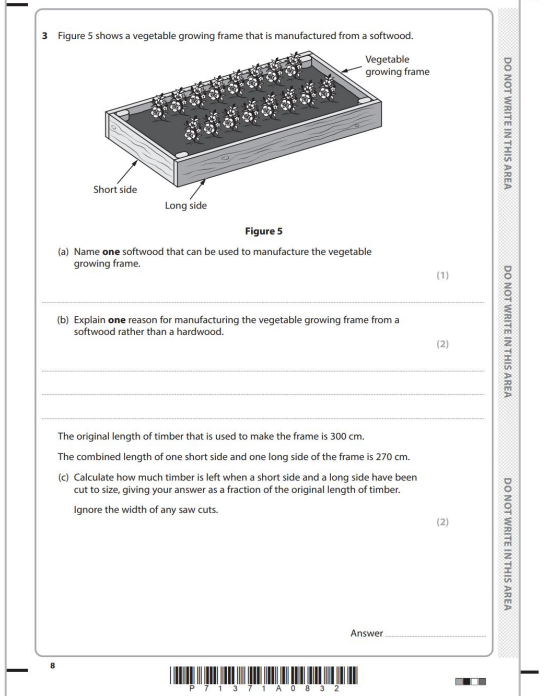

3 Figure 5 shows a vegetable growing frame that is manufactured from a softwood.

Figure 5

(a) Name **one** softwood that can be used to manufacture the vegetable growing frame. (1)

(b) Explain **one** reason for manufacturing the vegetable growing frame from a softwood rather than a hardwood. (2)

The original length of timber that is used to make the frame is 300 cm.

The combined length of one short side and one long side of the frame is 270 cm.

(c) Calculate how much timber is left when a short side and a long side have been cut to size, giving your answer as a fraction of the original length of timber.

Ignore the width of any saw cuts. (2)

Answer .....

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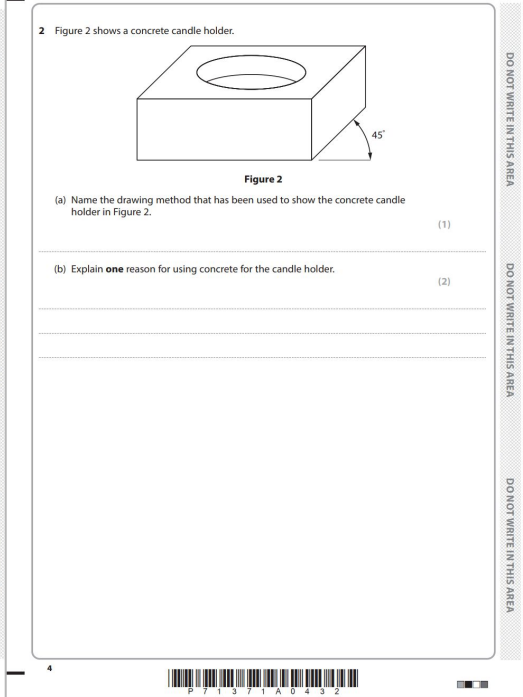
2 Figure 2 shows a concrete candle holder.

Figure 2

(a) Name the drawing method that has been used to show the concrete candle holder in Figure 2. (1)

(b) Explain **one** reason for using concrete for the candle holder. (2)

DO NOT WRITE IN THIS AREA

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Design and Technology: Component 2: Non-Examined Assessment

50% of the qualification, 100 marks

Students select a question released by the exam board and identify a problem. They then design and make solutions for this.

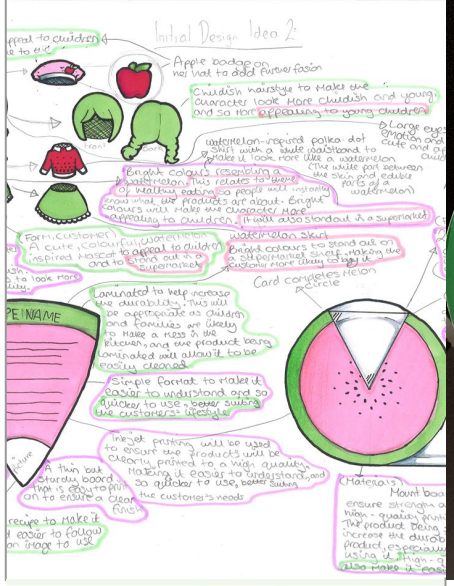
There are four parts to the assessment:

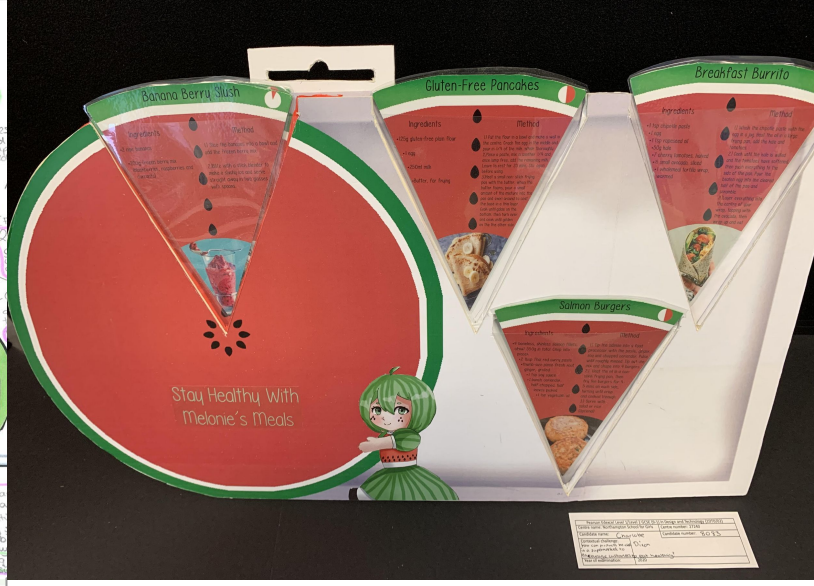
1- Students will **investigate** a chosen topic, this includes considering needs of users, researching a chosen problem, and creating a product specification.

2- They will go on to **design** solutions using a combination of hand sketching, rendering and computer aided design. These designs will be developed before reviewing the chosen design.

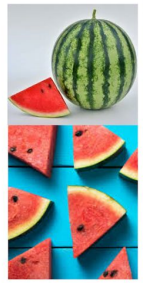
3- The **making** process includes model making, practicing various techniques, and manufacture taking into account quality and accuracy.

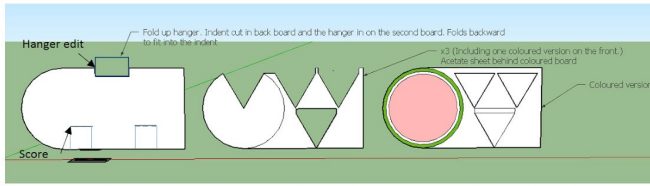
4- Finally the final outcome will be tested and **evaluated.**





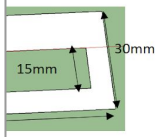
Final Holder Model



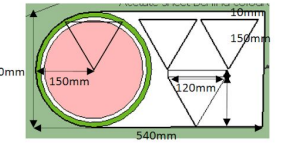


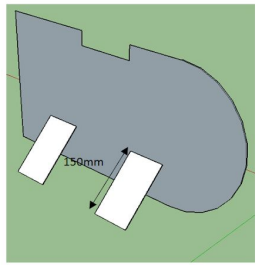
I later realised that this model of my card holder would not work very well. (Blue lines on final image for edits) Instead of having an indent of the back board for the hanger, the hanger would be fixed in black on the back board in the same location, otherwise the hanger could easily come off due to the thin connection on the second board. The stands will also be cut into the back board itself instead of being glued on and would fold out in the same way. This will also make it more durable.

Working drawing



The recipe card holder will be made up of 4 total layers: a back board, 2 in-between boards then a coloured version of the in-between boards on top, as well as a layer of acetate. These will be stuck together with PVA wood glue as I have found out through research that this would the most suitable choice.





Recipe Cards

The recipe cards (See next page in folder) have been edited to make them easier to understand. I have added a divider down the centre of the card and have organised the contents vertically rather than horizontally. This makes it easier to understand as it is more clear to the user what each section of the card is. This makes it more suitable for my busy target market as if the card is easier to understand, it will be quicker to use as it will take less time to understand.

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Key Career Skills

- Creativity
- Analysing
- Practical skills – fine motor skills
- Computer Aided Design
- Organisation
- Independence
- Critical thinking

Future career opportunities

Studying **Design and Technology** can lead to a career in;

- **Graphic Designer**: Graphic designers work on a variety of projects such as branding, advertising, websites, product packaging, and print media. They use software like Adobe Photoshop, Illustrator, and InDesign to create designs.
- **Illustrator**: Illustrators create artwork for various industries, including advertising, publishing, fashion, and entertainment. Their work can be found in books, magazines, product packaging, and digital platforms.
- **Advertising Designer**: These professionals design visuals for marketing campaigns, working with ad agencies or marketing teams to create eye-catching, persuasive advertisements across various media platforms (print, digital, TV, etc.).
- **Set Designer:** Set designers create the environment for movies, theater productions, or TV shows. Your skills in designing and building models, along with your creative problem-solving, would be vital in designing visually compelling and functional sets.
- **Architect:** Architects design buildings and structures, requiring a blend of creativity and technical knowledge. You'd apply your skills in drawing, materials, and structural understanding to create functional, aesthetic, and sustainable spaces.

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Future study opportunities

Studying **Design and Technology** can lead to further study in;

- Any relevant subject at Level 3 (A level), for example at **NSG** we offer:
  - **A Level Product Design**
  - **A Level Textiles**
  - **A Level Photography**

- Other creative subjects, such as;
  - **Art subjects,** such as **fine art**, **illustrator** etc.
  - **Performing Art subjects,** such as **drama, dance** or **music.**
  - **Computing subjects,** such as **web design** and **computing.**

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