

GCSE

Design and Technology

*Thinking of studying
DT at GCSE?*



Do you like to ...
Solve problems

DRAW

Create

MAKE

FIX

take risks

Invent



What will you learn?

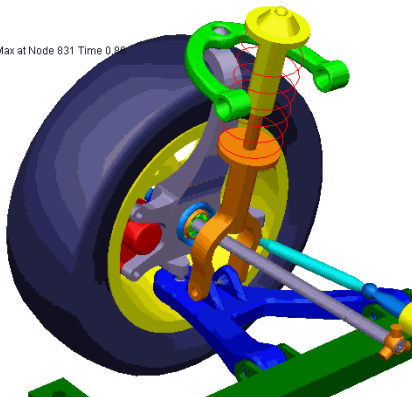
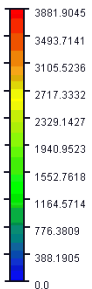
You will learn a range of transferable practical and theoretical skills:

- Communicate and develop ideas through sketches and models
- Manipulate materials and use tools to create your ideas
- Generate creative solutions to benefit people and the planet
- Learn how products are manufactured in industry
- Learn about the built world



Last_Run Time= 0.0000 Frame=001

Von Mises Stress (psi) Max at Node 831 Time 0.0000



Work with traditional and modern technology such as:

- Computer Aided Design (CAD)
- Computer Aided Manufacturing (CAM)
- 3D printing

Exam

50%

Of overall grade

6

- 13 **Figure 2** shows a street lamp designed to automatically provide light for people walking at night.



Figure 2

Suggest a suitable input and output component for the street lamp.

[2 marks]

Input _____

Output _____

- 14.1 State **two** properties of plywood.

[2 marks]

1 _____

2 _____

You will sit a 2 hour exam,
which tests knowledge of:

- Design principles
- Materials
- Processes
- Maths (15%)



Non - Examination Assessment (NEA)

50%

Of overall grade



You will **design** and **produce** a prototype/product

You will produce a portfolio of evidence (maximum **20** x Slides)

PLANNING FOR MANUFACTURE

This shows how the content (wine bottle) will fit into the product and also how it is stabilised.

The colours of the sketch show how the wood could be stained different colours with wood paint or manipulated with a darker shade wood by using wood stain.

To create a former for the base hold I attempted to replicate the same type of former as the loop. Dowling was used for the parts that were not under too much stress whilst partly threaded steel rod was used for the high stress areas to minimize unsustainable material use. This was not successful as the turning was too tight meaning the flexi ply would snap.

To let the hold spin, a handle must be made for easy accessibility to the wine bottle. Grooves in the handle aids grip to spin easily.

To increase aesthetics the screw could be hidden. This would also make my product more safe.

A cam lock could also be used as it will lock the loops to the centre piece. This idea was later put to the side as it was too complex and plastic is not natural or environmentally friendly.

Different types and styles of flat pack joints were trialled such as doweling and mild steel rods in different shapes, such as a semi-circle, to stop rotation.


flexi ply
Spring
flexi ply
hidden screws to minimize visibility
Dowling
flexi ply
screw
half cylinder to stop rotation
cam lock

Throughout the DT GCSE course

You will be supported by your DT specialist, but, you will need to be...

- Resilient
- Independent learner

Target Grade Year 11	CHAPTER 27: Sources, origins and properties (20)	CHAPTER 28: Working with timber based materials (20)	CHAPTER 29: Commercial manufacturing, surface treatments and finishes (20)	MS Forms	TIMBER ASSESSMENT	Progress	CHAPTER 46: Metals and alloys (20)	CHAPTER 30: Sources, origins and properties (20)	CHAPTER 31: Working with metal based materials (20)	CHAPTER 32: Commercial manufacturing, surface treatments and finishes (20)	AVERAGE BOOKLET MARK	MS Forms	Progress	CHAPTER 17: Polymers (20)	CHAPTER 33: Sources, origins and properties (20)	CHAPTER 34: Working with polymer based materials (20)	CHAPTER 35: Commercial manufacturing and quality control (20)	AVERAGE BOOKLET MARK	MS Forms	Progress
9				86%	68%		73%	80%	64%	86%	76%	73%		95%	91%	90%				
5				14%			45%	40%	36%	52%	43%			30%	41%					
6				35%			73%	37%	12%	66%	47%			65%	55%					
5				18%										50%	55%					
3				11%			45%	31%	4%	26%	27%			55%	41%	55%	32%	46%		
4				38%	23%		64%	46%	32%	68%	53%			55%	41%	35%	48%	45%		
7				76%	52%		73%	74%	52%	76%	69%			95%	91%	70%				
4				22%	18%		45%	37%	16%	30%	32%			60%	59%					
4				34%	9%		45%	46%	28%	0%	30%			65%	45%					
4					54%		64%	40%	28%	72%	51%			35%	45%	50%	36%	42%		
3							45%	40%	28%	22%	34%			25%	36%	55%				
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6				70%	54%		64%	69%	48%	64%	61%	55%		70%	73%	65%	70%	70%		
1 (4)				44%	23%		55%	57%	52%	56%	55%			70%	77%	50%				
8				64%	45%		64%	63%	56%	72%	64%	65%		55%	64%					60%
6				36%	26%		55%	40%	24%	6%	31%			65%	68%					
3				6%	32%		64%	37%	20%	48%	42%	8%		40%	18%	35%	28%	30%	13%	
6					11%		45%	34%	16%	36%	33%			45%	36%					
6?							55%	60%	32%	70%	54%			35%	36%					
6					32%		55%	37%	24%	34%	38%			60%	50%	35%				
6					5%		36%	0%	0%	0%	36%			45%	26%					
4							73%	0%	20%	28%	30%			25%	59%	30%	46%	40%		

- You will cover **50 topic areas**, which will be assessed by a range of small examinations and MS forms quizzes 
- Your progress will be tracked over the duration of the course to help you **meet** or **exceed** your target grade



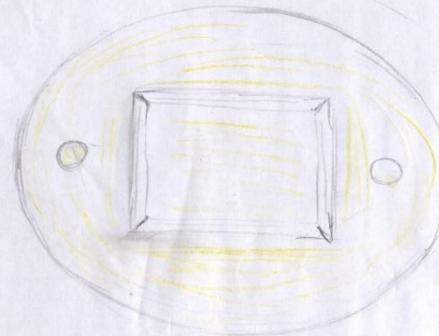
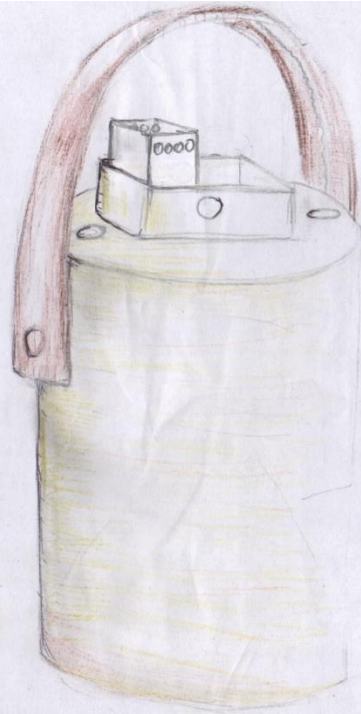
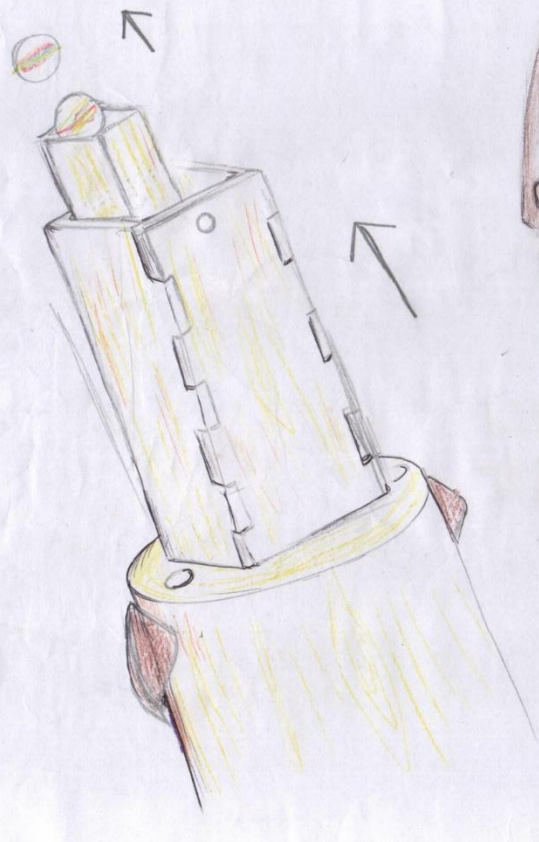
**Marble Game inspired
by African tradition**



**Armchair 'friend'
for the elderly**

GCSE DT 
examples

Design ideas



Testing patterns with soldering iron

I experimented with some African patterns to follow along with the soldering iron on a piece of spare plywood to practice. With this you are limited to what you can burn in..



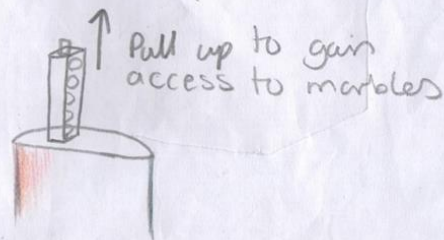
This shows each tray been able to move in a upwards direction when taking out.

Shaped like African container.

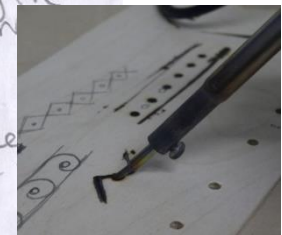
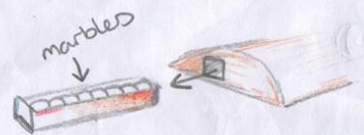


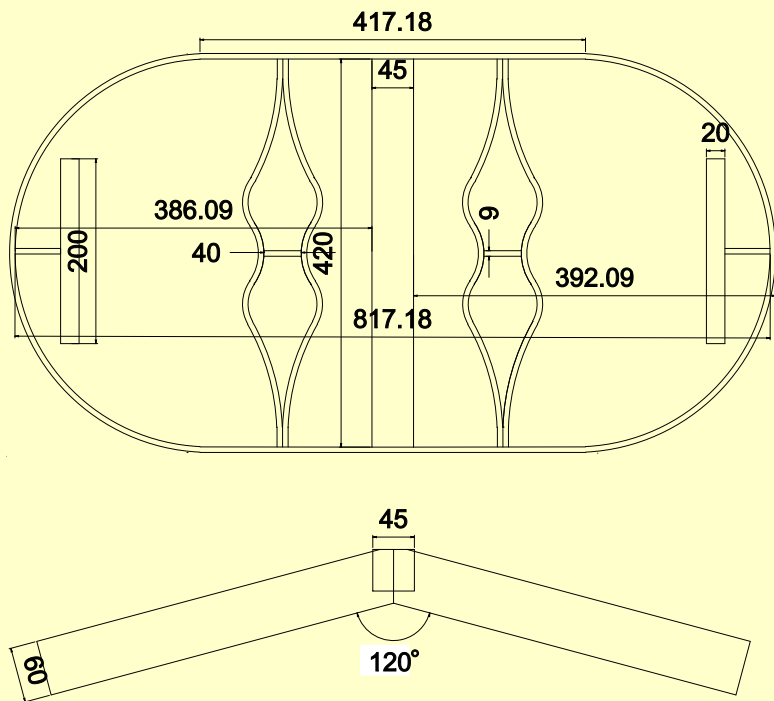
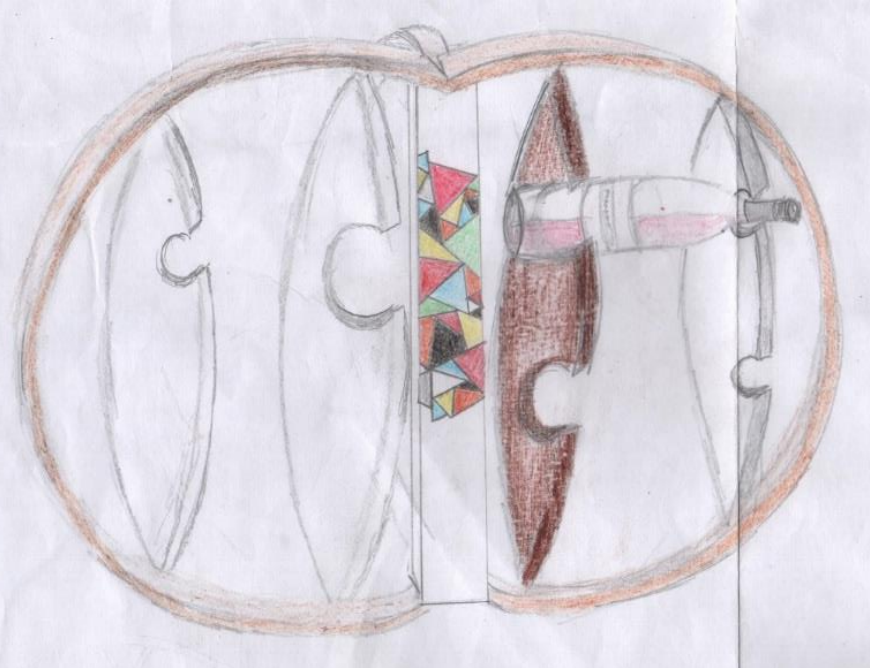
How will the product function?

To ensure the container retains it's shape, finger joints will be used because they resist torsion



2 slots
2 trays containing the components





Flatpack 'rotating' Wine Rack

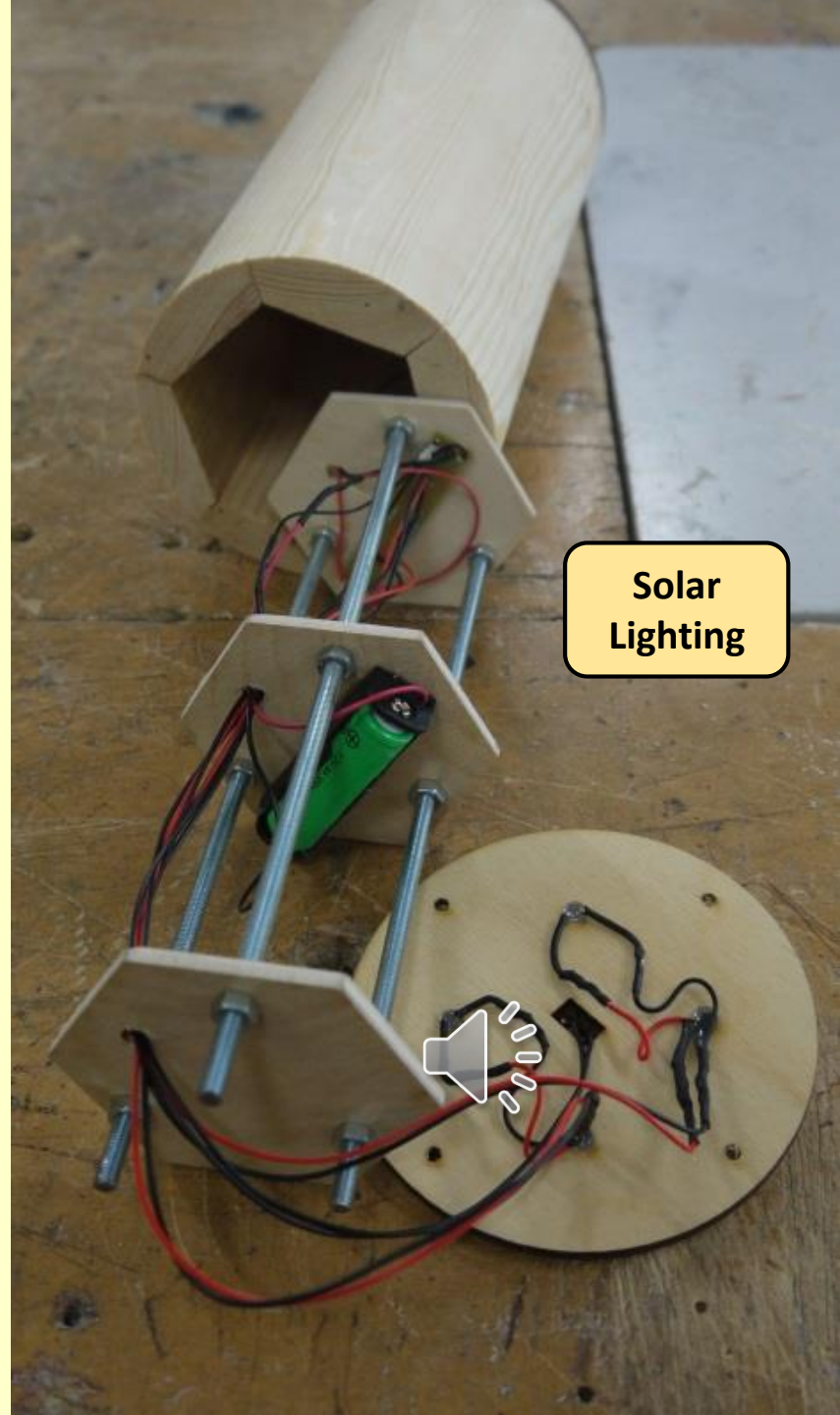


GCSE DT examples 2019

Candelabra made from
recycled timber



Solar
Lighting



Perfect preparation for A Level DT or
apprenticeships

Future careers ...

Engineer

FURNITURE
ENTREPRENEUR

ROBOTICS

Set Design

Architect

Gaming

ECO DESIGN

Industrial Design

Electronics

Fashion

Programming

GRAPHICS

Product Designer

MANAGEMENT

For further information contact:

Mr Trigg

[ptrigg@tuptonhall.derbyshire.sch.uk](mailto:p.trigg@tuptonhall.derbyshire.sch.uk)

Mr Harries

p.harries@tuptonhall.org.uk

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