KS4 Yr10/11 Product Design: *Textiles*

About me

NAME:

TEACHER: TEACHING GROUP:

SCHOOL: TUTOR GROUP:

What will I need to bring with me to each lesson?

Pencil
Black Pen
Ruler
Eraser
Calculator

Optional:

Colour pencils
Fine Liner
AQA D&T GCSE 9-1 revision book

Contents in this booklet:

Assessment When working in Design and Technology you will be levelled each half term for theory and coursework. An overall level recorded here. **Book work** will be marked in PINK (Progressive work) and Green (Target set) ***It is important to address the green.***

	YEAR 10			YEAR 11		
	theory	cwk	overall	theory	cwk	overall
1.1						
1.2						
2.1						
2.2						
3.1						
3.2						
END OF YEAR						

My Assessments:

TARGET LEVEL *Shaded below.*	**My Year 10 Projects in Textiles**	
9		
8		
7		
6		
5		
4		
3		
2		
1		
PROJECT TITLE		

HOMEWORK ASSESSMENT						
9						
8						
7						
6						
5						
4						
3						
2						
1						
	1	2	3	4	5	6
LITERACY ASSESSMENT						
MARK						
	1	2	3	4	5	6
NUMERACY ASSESSMENT						
MARK						
	1	2	3	4	5	6

NEA PROJECT ASSESSMENT SHEET (STARTS 1ST JUNE of YEAR 10)

Section A: Identifying & investigating design possibilities				
1-2	**3-5**	**6-8**	**9-10**	**Mark**
Basic design possibilities identified. Link to a contextual challenge is unclear and student demonstrates only a limited understanding of the problems/opportunities.	Design possibilities identified and explored with some link to a contextual challenge demonstrating adequate understanding of the problems/ opportunities.	Design possibilities identified and explored, linked to a contextual challenge demonstrating a good understanding of the problems/opportunities.	Design possibilities identified and thoroughly explored directly linked to a contextual challenge demonstrating excellent understanding of the problems/opportunities.	
An attempt has been made to identify a user/client but is not be relevant to the contextual challenge. Student has undertaken a basic investigation of their needs and wants, but given little explanation and justification of these.	A user/client has been identified that is partially relevant to the contextual challenge. Student has undertaken an investigation of their needs and wants, with some explanation and justification of some aspects of these.	A user/client has been identified that is mostly relevant to the contextual challenge and student has undertaken an investigation of their needs and wants, with a good explanation and justification of most aspects of these.	A user/client has been clearly identified and is entirely relevant in all aspects to the contextual challenge and student has undertaken a comprehensive investigation of their needs and wants, with a clear explanation and justification of all aspects of these.	
Basic investigation into the work of others that has not been used to inform their ideas.	Some investigation into the work of others that has had some influence on their ideas.	Detailed investigation into the work of others that has influenced ideas.	Comprehensive investigation into the work of others that clearly informs ideas.	
Limited design focus and understanding of the impact on society including; economic and social effects.	Some design focus and understanding of the impact on society including; economic and social effects.	Good design focus and understanding of the impact on society including; economic and social effects.	Excellent design focus and full understanding of the impact on society including; economic and social effects	
Investigation of design possibilities only takes place in the initial stages of the project and there is very little justification and understanding of possibilities identified.	Investigation of design possibilities goes beyond the initial stages of the project but only some justification and understanding of possibilities identified.	Evidence of investigation of design possibilities at various stages in the project with good justification and understanding of possibilities identified.	Extensive evidence that investigation of design possibilities has taken place throughout the project with excellent justification and understanding of possibilities identified.	

Section B: Producing a design brief & specification				
1-2	**3-5**	**6-8**	**9-10**	**Mark**
Basic design brief that contains only limited consideration of their client's needs and wants and has little or no relevance to the context selected.	Adequate design brief with some consideration of their client's needs and wants is evident, as is the relevance to the context selected.	Good design brief with an attempt to justify how they have considered most of their client's needs and wants and has clear links to the context selected.	Comprehensive design brief which clearly justifies how they have considered their user/client's needs and wants and links directly to the context selected.	
Basic design specification has minimal detail. Limited justification linking to the needs and wants of the client/user. Very little influence on subsequent design stages.	Adequate design specification lacking some detail. Some justification linking to the needs and wants of the client/user. Informs subsequent design stages to some extent.	Detailed design specification with good justification linking to the needs and wants of the client/user. Largely informs subsequent design stages.	Comprehensive design specification with very high level of justification linking to the needs and wants of the client/user. Fully informs subsequent design stages.	

Section C: Generating design ideas				
1-5	**6-10**	**11-15**	**16-20**	**Mark**
Basic ideas have been generated with clear design fixation and limited consideration of functionality, aesthetics and innovation.	Imaginative ideas have been generated with a degree of design fixation and having some consideration of functionality, aesthetics and innovation.	Imaginative and creative ideas have been generated which mainly avoid design fixation and have adequate consideration of functionality, aesthetics and innovation.	Imaginative, creative and innovative ideas have been generated, fully avoiding design fixation and with full consideration of functionality, aesthetics and innovation.	
Ideas generated taking little or no account of investigations carried out.	Ideas have been generated that take some account of investigations carried out but may lack relevance and/or focus.	Ideas have been generated, taking into account on-going investigation that is relevant and focused	Ideas have been generated, that take full account of on-going investigation that is both fully relevant and focused.	
Basic experimentation and communication is evident, using a limited number of techniques	Experimentation is sufficient to generate a range of ideas. Communication is evident, using a range of techniques.	Good experimentation and communication is evident, using a wide range of techniques	Extensive experimentation and excellent communication is evident, using a wide range of techniques.	
Basic use of a single design strategy.	Different design strategies explored but only at a superficial level with the approach tending to be fairly narrow.	Effective use of different design strategies for different purposes as an approach to designing.	Imaginative use of different design strategies for different purposes and as part of a fully integrated approach to designing.	

Section D: Developing design ideas				
1-5	**6-10**	**11-15**	**16-20**	**Mark**
Basic development work is evident, using a limited range of 2D/3D techniques (including CAD where appropriate) in order to develop a prototype.	Development work is sufficient, using some 2D/3D techniques (including CAD where appropriate) in order to develop a prototype.	Good development work is evident, using a range of 2D/3D techniques (including CAD where appropriate) in order to develop a prototype.	Very detailed development work is evident, using a wide range of 2D/3D techniques (including CAD where appropriate) in order to develop a prototype.	
Modelling is basic, using a limited number of methods to test their design ideas meeting requirements only superficially.	Modelling is sufficient, using a variety of methods to test their design ideas, meeting some requirements	Good modelling which uses a variety of methods to test their design ideas, largely meeting requirements.	Excellent modelling, using a wide variety of methods to test their design ideas, fully meeting all requirements.	
Materials/components selected with minimal research into their working properties or availability and may not be fully fit for purpose.	Materials/components selected with some research into their working properties and availability. Some of these may not be fully appropriate for purpose.	Materials/components selected are mostly appropriate with good research into their working properties and availability.	Fully appropriate materials/components selected with extensive research into their working properties and availability.	
Basic manufacturing specification that lacks detail and has minimal justification to inform manufacture.	Adequate manufacturing specification contains sufficient detail with some justification to inform manufacture.	Largely detailed manufacturing specification is produced with good justification to inform manufacture.	Fully detailed manufacturing specification is produced with comprehensive justification to inform manufacture.	

Section E: Realising design ideas				
1-5	**6-10**	**11-15**	**16-20**	**Mark**
Tools, materials and equipment (including CAM where appropriate) have been used or operated safely at a basic level.	The correct tools, materials and equipment (including CAM where appropriate) have been used or operated safely with an adequate level of skill.	The correct tools, materials and equipment (including CAM where appropriate) have been used or operated safely with a good level, of skill.	The correct tools, materials and equipment (including CAM where appropriate) have been consistently used or operated safely with an exceptionally high level of skill.	

Basic quality control is evident through measurement only.	Some quality control is evident through measurement and testing.	Detailed quality control is evident to ensure the prototype is mostly accurate through partial application of tolerances.	A high level of quality control is evident to ensure the prototype is accurate by consistently applying very close tolerances.	
Prototype shows a basic level of making/finishing skills which may not be appropriate for the desired outcome.	Prototype shows an adequate level of making/finishing skills that are mostly appropriate to the desired outcome.	Prototype shows a good level of making/finishing skills that are largely consistent and appropriate to the desired outcome.	Prototype shows an exceptionally high level of making/finishing skills that are fully consistent and appropriate to the desired outcome.	
A prototype of basic quality has been produced with little or no potential to be commercially viable and does not meet the needs of the client/user.	A prototype of sufficient quality has been produced that may have potential to be commercially viable, although further developments would be required, and only partially meets the needs of the client/user.	A good quality prototype that may have potential to be commercially viable has been produced which mostly meets the needs of the client/user.	An exceptionally high quality prototype that has the potential to be commercially viable has been produced and fully meets the needs of the client/user.	

Section F: Analysing & evaluating				
1-5	**6-10**	**11-15**	**16-20**	**Mark**
Limited evidence that various iterations are as a result of considerations linked to testing, analysis and evaluation of the prototype.	Some evidence that various iterations are as a result of considerations linked to testing, analysis and evaluation of the prototype, including basic consideration of feedback from third parties.	Good evidence that various iterations are as a result of considerations linked to testing, analysis and evaluation of the prototype, including some consideration of feedback from third parties.	Extensive evidence that various iterations are as a direct result of considerations linked to testing, analysis and evaluation of the prototype, including well considered feedback from third parties.	
Basic testing of some aspects of the final prototype against the design brief and specification. Little reference is made to any modifications either proposed or undertaken.	Adequate testing of some aspects of the final prototype against the design brief and specification. Some reference is made to modifications either proposed or undertaken.	Good testing of most aspects of the final prototype against the design brief and specification. Detailed reference is made to any modifications either proposed or undertaken.	Comprehensive testing of all aspects of the final prototype against the design brief and specification. Fully detailed and justified reference is made to any modifications both proposed and undertaken.	
Superficial analysis and evaluation. Little influence on the design brief and the design and manufacturing specifications.	Adequate analysis and evaluation is present at some stages of the project but does not have sufficient influence on the design brief and the design and manufacturing specifications.	Good analysis and evaluation at most stages of the project that influences the design brief and the design and manufacturing specifications.	Excellent on-going analysis and evaluation evident throughout the project that clearly influences the design brief and the design and manufacturing specifications.	

NEA TEACHER FEEDBACK *Please address any GREEN comments*

Date	Mark Achieved	Comment

PROJECT 1. Time given: 1 term

TASK OUTLINE: Design and create a bag inspired by 'Pop Art'. You will create the fabric using a range of printing techniques and you will design and create the shape of the bag.

ASSESSMENT FOCUS: REALISING DESIGN IDEAS	1-3	4-5	6-7	8-9
	Tools, materials and equipment (including CAM where appropriate) have been used or operated safely at a basic level.	The correct tools, materials and equipment (including CAM where appropriate) have been used or operated safely with an adequate level of skill.	The correct tools, materials and equipment (including CAM where appropriate) have been used or operated safely with a good level, of skill.	The correct tools, materials and equipment (including CAM where appropriate) have been consistently used or operated safely with an exceptionally high level of skill.
	Basic quality control is evident through measurement only.	Some quality control is evident through measurement and testing.	Detailed quality control is evident to ensure the prototype is mostly accurate through partial application of tolerances.	A high level of quality control is evident to ensure the prototype is accurate by consistently applying very close tolerances.
	Prototype shows a basic level of making/finishing skills which may not be appropriate for the desired outcome.	Prototype shows an adequate level of making/finishing skills that are mostly appropriate to the desired outcome.	Prototype shows a good level of making/finishing skills that are largely consistent and appropriate to the desired outcome.	Prototype shows an exceptionally high level of making/finishing skills that are fully consistent and appropriate to the desired outcome.
	A prototype of basic quality has been produced with little or no potential to be commercially viable and does not meet the needs of the client/user.	A prototype of sufficient quality has been produced that may have potential to be commercially viable, although further developments would be required, and only partially meets the needs of the client/user.	A good quality prototype that may have potential to be commercially viable has been produced which mostly meets the needs of the client/user.	An exceptionally high quality prototype that has the potential to be commercially viable has been produced and fully meets the needs of the client/user.

WWW

EBI

TEACHER COMMENT

STUDENTS THOUGHTS

☺

☹

PHOTO

PROJECT 2. Time given – 1 term

TASK OUTLINE: In a small sketch book create a vast range of textile techniques. You need to research into a range of methods and experiment with a vast range of materials and techniques. Present your work in a thoughtful and clear manner.

ASSESSMENT FOCUS: GENERATING DESIGN IDEAS	1-3	4-5	6-7	8-9
	Basic ideas have been generated with clear design fixation and limited consideration of functionality, aesthetics and innovation.	Imaginative ideas have been generated with a degree of design fixation and having some consideration of functionality, aesthetics and innovation.	Imaginative and creative ideas have been generated which mainly avoid design fixation and have adequate consideration of functionality, aesthetics and innovation.	Imaginative, creative and innovative ideas have been generated, fully avoiding design fixation and with full consideration of functionality, aesthetics and innovation.
	Ideas generated taking little or no account of investigations carried out.	Ideas have been generated that take some account of investigations carried out but may lack relevance and/or focus.	Ideas have been generated, taking into account on-going investigation that is relevant and focused	Ideas have been generated, that take full account of on-going investigation that is both fully relevant and focused.
	Basic experimentation and communication is evident, using a limited number of techniques	Experimentation is sufficient to generate a range of ideas. Communication is evident, using a range of techniques.	Good experimentation and communication is evident, using a wide range of techniques	Extensive experimentation and excellent communication is evident, using a wide range of techniques.
	Basic use of a single design strategy.	Different design strategies explored but only at a superficial level with the approach tending to be fairly narrow.	Effective use of different design strategies for different purposes as an approach to designing.	Imaginative use of different design strategies for different purposes and as part of a fully integrated approach to designing.

WWW	STUDENTS THOUGHTS ☺	PHOTO
EBI	☹	
TEACHER COMMENT		

Homework 1: *The work of others: Companies*

Select one of the design companies from the list.
Give the name of a design that they have created and explain the influence of this design

Alessi
Apple
Braun
Dyson
Gap
Primark
Under Armour
Zara

Explain why designers produce prototypes.

Produce a prototype in card of an egg cup holder inspired by the work of one of the designers listed. *Photograph and place here.*

Harry Beck
Marcel Breuer
Coco Chanel
Norman Foster
Sir Alec Issigonis
Alexander McQueen
William Morris
Mary Quant

Charles Rene Mackintosh
Gerrit Rietveld
Aldo Rossi
Ettore Sottsass
Philippe Starck
Raymond Templier
Louis Comfort Tiffany
Vivienne Westwood

Homework 2: *Prototypes*

Product analysis Pencils: You will need a retractable pencil and a conventional pencil

Look at the 2 pencils – which one looks better? Why?

Use the 2 pencils – Performance?

What materials are the pencils made from?

Research the Cost?

How are they constructed?

Take the retractable pencil apart. How many parts?

Discuss the Planned Obsolesce of each pencil?

Homework 3: *Product Analysis*

Following on from your pencil product analysis homework. Redesign your pencil with innovation, originality and an awareness of materials including smart materials.

Homework 4: *Redesign*

Following on from your pencil product analysis homework. Redesign your pencil with innovation, originality and an awareness of materials including smart materials.

Homework 4: *Redesign*

Flowcharts

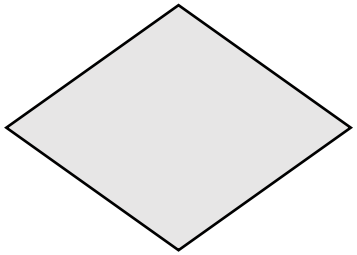
These are used to show the production system in diagrammatic form. A Flowchart is a universal system used to plan work for the manufacture of a product, it lists and puts into order the operations to be carried out during the manufacture of a product.

When you make a production plan flowchart there are specific shapes that you need to use on the flow chart. Look at the shapes on this page and familiarise yourself with what they mean. The diamond shape usually contains a question.

This shape shows a process carried out -

This shape shows the beginning and end of your production plan flow chart.

This shows a decision point/ quality control point, where the making is tested for quality and the production can either go on to the next stage or has to be repeated if not of sufficient quality.

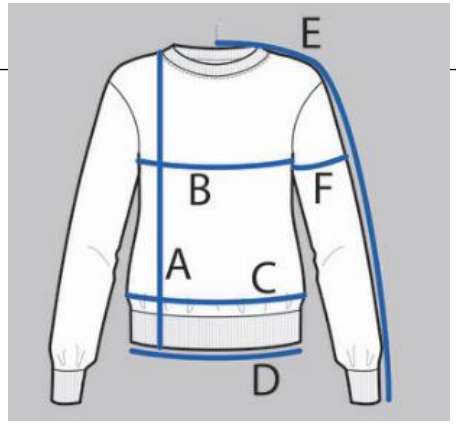


Homework 5: *Flowcharts*

Create a flow chart for a cup of tea and a piece of toast buttered with jam. The tea has milk and 1 tsp of sugar. You must make both items simultaneously.

Homework 5: *Flowcharts*

What is a **Manufacturing Specification**?



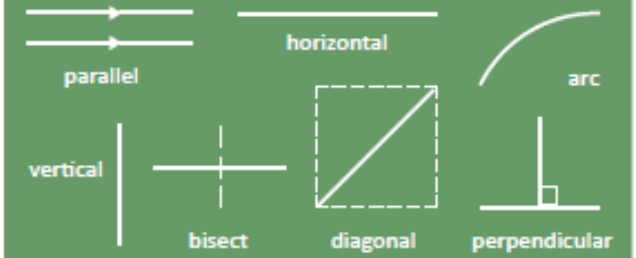
Take a **product or garment** and measure all areas.
Create a flat drawing of your product/garment and add all measurements.

Homework 6: *Manufacturing Specification*

NUMERACY SUPPORT IN D&T

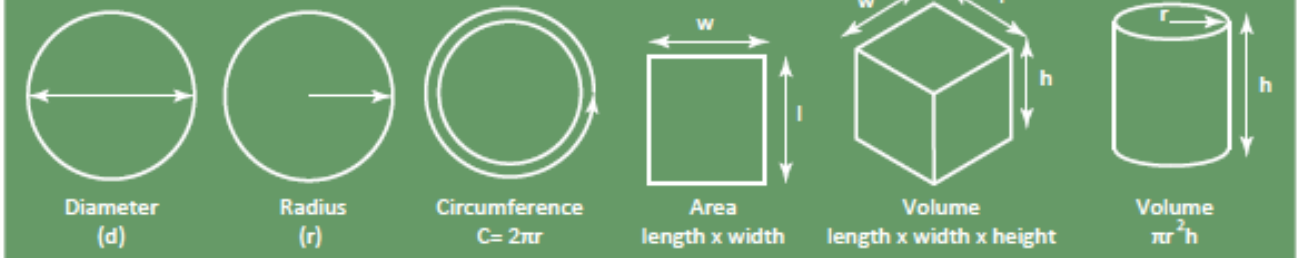
LINES

What do each of following lines mean



SHAPES

How to measure different shapes



Diameter (d)

Radius (r)

Circumference $C = 2\pi r$

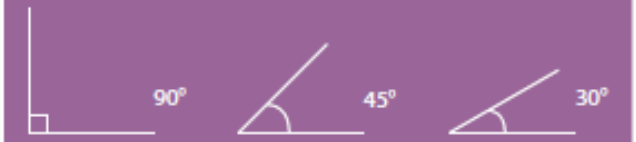
Area length x width

Volume length x width x height

Volume $\pi r^2 h$

ANGLES

Use the right tool to get the right angle



A **try square** is used to mark a 90° angle.

A **mitre square** is used to mark a 45° angle.

A **sliding bevel** is used to mark irregular angles.

MEASURES OF AVERAGES

This help you draw conclusions from data

The **mean** is the most common measure of average. To calculate the mean add the numbers together and divide the total by the amount of numbers:
Mean = sum of numbers ÷ amount of numbers

If you place a set of numbers in order, the **median** number is the middle one.

The **mode** is the value that occurs most often.

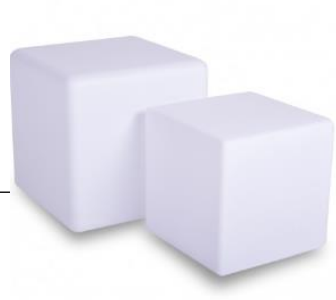
MEASURING

Measuring in millimetres is more accuarate than measuring in centimetres. In the workshop you will frequently use the steel rule.

1mm = 0.1cm
10mm = 1cm
50mm = 5cm
57mm = 5.7cm
100mm = 10cm

To convert mm to cm ÷ 10
To covert cm to mm x 10

A Manufacturer is producing solid plastic cubes. Each cube is 30mm on each side. The manufacturer is using a polymer with a density of 960kg m^{-3}. *Calculate the mass of material needed to make 10 000 cubes. Assume that no material is wasted during the process*

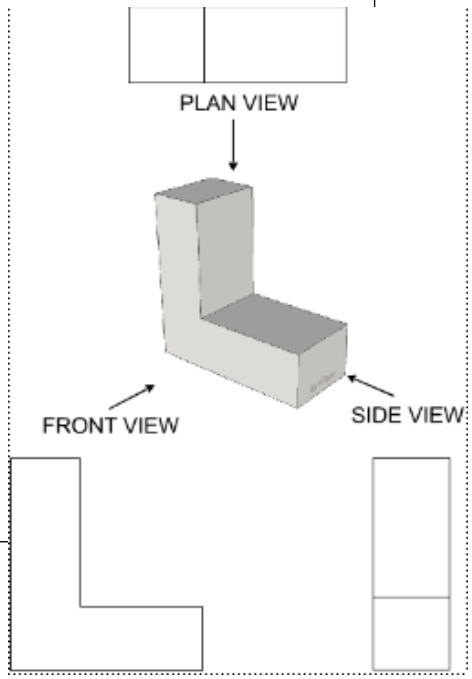


Numeracy 1: *CALCULATING MASS*

Numeracy 2: 3RD ANGLE PROJECTION

Produce a third angle projection of the following component. Include all sizes needed to allow manufacture of the component.

Photocopy of image from 173 theory book



A company wants to produce a toy car for small children. They have asked you to generate a design idea.

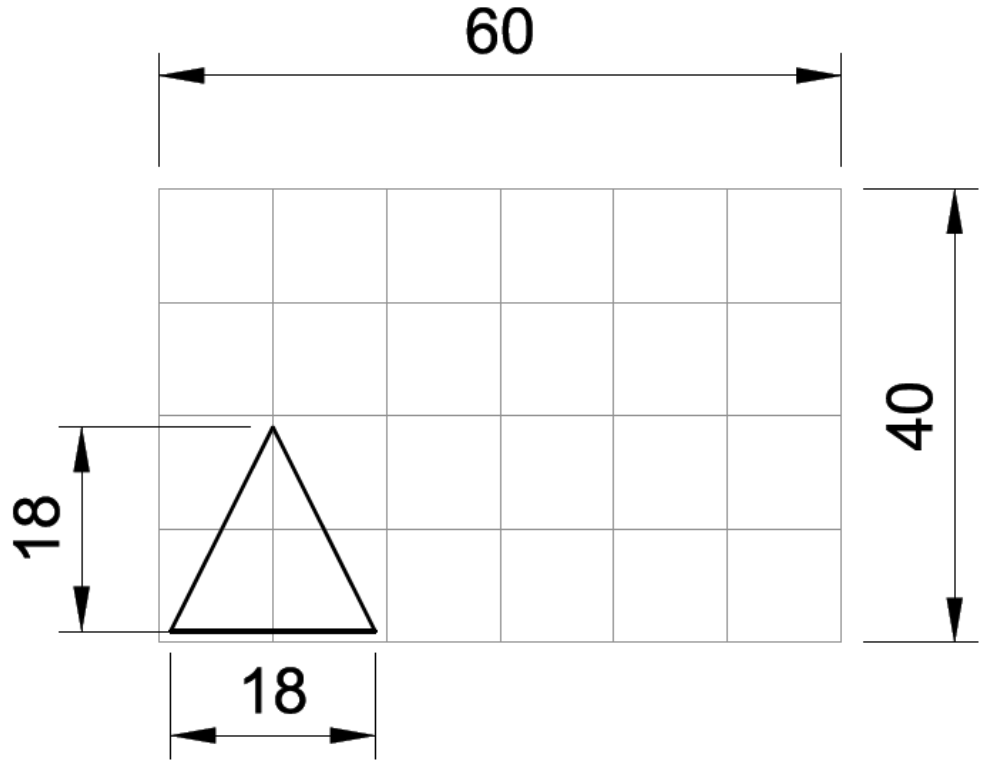
1. On the grid produce an isometric drawing of your design idea.
2. Annotate your design to indicate the main features including
    a. Sizes
    b. Materials
    c. Finish
    d. How it could be made

Numeracy 3: *ISOMETRIC*

The amount of renewable energy generated in 2015 was 83.3 Terawatt hours (TWh).
The ratio of solar power to other forms of renewable energy was 1:10.
What amount of energy was attributed to solar power?
Give your answer to 1 decimal point.

Numeracy 4: *RATIO*

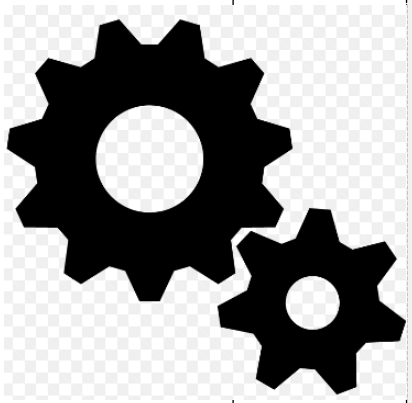
When packaging is cut out ‘nesting’ is used to ensure that minimal material is wasted.
A piece of material measures 60mm by 40mm. A triangle pattern measures 18mm (height) by 18mm (base).
The first triangle has been placed on the material. Repeat the triangle pattern to ensure that as many as possible fit on the material.



Calculate the amount of material wasted when producing the shapes you have drawn
Assume no material is wasted when cutting.

Numeracy 5: *NESTING*

Two gears similar to those shown are being used to transfer motion in a mechanical device.
The input (driver) gear is turning clockwise. What is the direction of the output (driven) gear?



Imagine that the input gear has 12 teeth and the output gear has 36 teeth. Calculate the gear ratio.

Numeracy 6: *RATIO*

Keyword	USE FULL SENTENCES IN YOUR ANSWERS.
CAD/CAM	*Describe what is meant by CAD. GIVE EXAMPLES IN YOUR ANSWER*
	Describe what is meant by CAM. GIVE EXAMPLES IN YOUR ANSWER

Literacy 1: *CAD/CAM*

Keyword	USE FULL SENTENCES IN YOUR ANSWERS.
PLANNED OBSOLESCENCE	*Describe what is meant by PLANNED OBSOLESCENCE*
	Explain why companies produce products with planned obsolescence built into their life cycle

Literacy 2: *PLANNED OBSOLESCENCE*

Keyword	USE FULL SENTENCES IN YOUR ANSWERS.
DEFORESTATION	*Define the term deforestation*
	What are the negative impacts of deforestation?

Literacy 3: *DEFORESTATION*

Keyword	USE FULL SENTENCES IN YOUR ANSWERS.
CROWD FUNDING	*Describe what is meant by crowd funding*
	Explain the advantages and disadvantages of crowd funding

Literacy 4: *CROWD FUNDING*

Keyword	USE FULL SENTENCES IN YOUR ANSWERS.
TOLERANCES	*What are tolerances?*
	Explain why tolerances are used in product manufacture.

Literacy 5: *TOLERANCES*

Keyword	USE FULL SENTENCES IN YOUR ANSWERS.
ITERATIVE	*Describe the iterative design process*
	Discuss the advantages and disadvantages of using the iterative process to design products

Literacy 6: *ITERATIVE*