Researchers in Schools

Designing for Quality

The Science Behind Fast Cars

Key Stage 4 Programme

Pupil Name	
Coursebook Designed by	**Dr. M. E. Agi**

Timetable and Assignment Submission

Timetable – Tutorials

Tutorial	Date	Time	Location
1	2nd December 2019	12.00PM	University of London
2	15th January 2019	14.55 -15.55	R222
3	22nd January 2019	14.55 -15.55	R222
4	31st January 2019	14.55 -15.55	R222
5	7th February 2019	14.55 -15.55	R222
6 (Feedback)	14th February 2019	14.55 -15.55	R222
7 (Feedback)	28th February 2019	14.55 -15.55	R222

Timetable – Homework Assignments

Homework Assignment	Description	Due Date
Tutorial 1	An Introduction to Product Quality	13th December 2019
Tutorial 2	Designing for Quality 1	22nd January 2020
Tutorial 3	Designing for quality 2	31st January 2020
Tutorial 4	Product Quality Measurement	7th February 2020
Tutorial 5	Manufacturing Process Quality	14th February 2020

Assignment Submission – Lateness and Plagiarism

Lateness	
Submission after midnight on 9th August	10 marks deducted
Plagiarism	
Some plagiarism	10 marks deducted
Moderate plagiarism	20 marks deducted
Extreme plagiarism	Automatic fail

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Course Rationale

The word 'Quality' is a very familiar word among product designers and manufacturers as well as consumers and suppliers, who see it as an expression of the most important factor for achieving success in business. From the consumer's perspective, quality determines what is considered as the right choice of product or service among those with similar functional elements. But what exactly is quality in the context of product design and manufacturing? How does it relate to consumer satisfaction and business expectations?

From the product designers' viewpoint, designing for quality entails some major considerations in relation to the product functionality and reliability. To achieve these, several scientific principles are applied in the design process. Another important consideration is the consumer needs or expectations, expressed qualitatively but must be converted or interpreted as technical product features. These considerations highlight the complexity in the design and manufacture of 'quality' products.

In this course, the main objective is to understand how these considerations are managed in the design and manufacture of some parts of an automobile and how the focus on 'quality' influences the processes with regards to ensuring that consumer needs and expectations are met or ideally exceeded. Some of the scientific principles to be considered include: manufacturing material selection based on their chemical and physical properties such as elasticity, heat and electrical conduction, and malleability (these terms will be clearly explained in the tutorials). It will also involve understanding the role of size, weight and shape in enhancing quality as it relates to efficiency, durability, comfort and general experience of an automobile consumer.

The course will be delivered in a university style tutorial over a period of six weeks and it will end with a final assignment which will be used to assess your (pupils') understanding of the taught concept alongside your ability to demonstrate the acquired skills such as strong literacy and numeracy skills, problem solving, presentation skills and individual research capability. These skills are invaluable for university education.

Uni Pathways Mark Scheme 2019 – Essay-based assignments

	Skills	1st (70-100)	2:1 (60-69)	2:2 (50-59)	3rd (40-49)	Mark /100
Subject knowledge	Knowledge and understanding	o All content included and materials used are relevant to the general topic and to the specific question/title o Good understanding of all the relevant topics. o Technical terms are defined and used accurately throughout o Clear justification of how the material and content included is related to the specific issues that are the focus of the assignment	o Most of the materials used and content included are relevant to the general topic and to the specific question/title o Good understanding of most the relevant topics o Technical terms are mostly defined and used accurately o Adequate justification of how the material used and content included are related to the specific issues that are the focus of the essay	o Some of the materials used and content included are relevant to the general topic and to the specific question/title o Good understanding on some of the relevant topics but occasional confusion on others o Technical terms are sometimes used and defined accurately o Some justification of how the material used and content included are related to the specific issues that are the focus of the essay	o The content included and materials used are not applied to the question/title in a relevant manner o There is confusion in how understanding of the topics is expressed	
Critical thinking	Research and evidence	o Includes rich sources of research findings, data, quotations or other sourced material as evidence for the claims/ideas o Uses evidence/calculations to support claims/assertions/ideas, consistently clearly and convincingly o Evidence of further reading beyond materials provided which were used in an appropriate context o Data is effectively analysed and appropriate assumptions/conclusions are reached	o Includes adequate sources of research findings, data, quotations or other sourced material as evidence for the claims/ideas o Uses evidence/calculations to support claims/assertions/ideas, mostly clearly and convincingly o Evidence of further reading beyond materials provided o Data is analysed and the assumptions/conclusions that are reached are mostly appropriate	o Includes some sources of research findings, data, quotations or other sourced material as evidence for the claims/ ideas o Uses evidence/calculations to support claims/assertions/ideas, at times clearly and convincingly o Limited evidence of further reading beyond materials provided o There is an attempt to analyse data is and draw assumptions/conclusions	o Inclusion sources and materials is very limited and mostly not attributed o Applicable sources are rarely used to support ideas. o Data is not used or few appropriate conclusions are drawn from it.	
	Developing an argument	o A point of view or position in relation to the title or question is consistently clear. The position is developed effectively and consistently throughout the essay o Argument is exceptionally well-developed and well-justified o Makes links effectively between subjects that have not previously been associated o Uses concepts from the tutorials in an unfamiliar context and does so accurately and confidently. o Content is analysed effectively to support the argument	o A point of view or position in relation to the title or question is adequately clear. The position is well-developed in most of the essay o Argument is clear and well-developed, and position is justified o Some evidence of linking subjects that have not previously been associated o Uses some concepts from the tutorials in an unfamiliar context, but not always accurately o Analyses content to support the argument	o A point of view or position in relation to the title or question is somewhat clear. The position is well-developed in parts of the essay o Argument is clear but not well-developed o Limited evidence of linking subjects that have not previously been associated o Limited use of concepts from the tutorials in other contexts o Uses some analysis of content to support the argument	o There is not a clear point of view or position taken and sometimes the argument is not clearly established	

	Critical evaluation	○ Moves beyond description to an assessment of the value or significance of what is described ○ Evaluative points are consistently explicit/systematic/reasoned/justified ○ Effectively critiques the reliability of sources provided	○ Mostly description but some assessment of the value or significance of what is described ○ Evaluative points are mostly explicit/systematic/reasoned/justified ○ Some evidence of critiques on the reliability of sources provided	○ Describes with minimal assessment of the value or significance of what is described ○ Evaluative points are at times explicit/systematic/reasoned/justified ○ Limited evidence of critiques on the reliability of sources provided	○ The work is descriptive in nature and there is a lack of critical engagement in the value of sources	
Written communication	Structure and presentation	○ Ideas are presented in paragraphs and arranged in a logical structure that is appropriate for the assignment ○ The introduction clearly outlines how the essay/report will deal with the issues ○ The conclusion summarises all the main points clearly and concisely ○ All calculations, formulas and methods are clearly structured, clear to follow and correct ○ Tables and graphs are effectively constructed including appropriate headings, units and scales. ○ All sources are referenced correctly in an agreed format	○ Ideas are presented in paragraphs and arranged in a structure that is mostly appropriate for the assignment ○ The introduction adequately describes how the essay/report will deal with the issues ○ The conclusion summarises most of the main points clearly ○ Calculations, formulas and methods are mostly structured, clear to follow and correct ○ Most tables and graphs are well constructed ○ Most sources are referenced correctly in an agreed format	○ Ideas are presented in paragraphs and arranged in a structure ○ The introduction mentions how the essay/report will deal with the issues ○ The conclusion summarises some of the main points clearly ○ Calculations, formulas and methods are not always structured, clear to follow and correct. ○ Some tables and graphs are well constructed but contains some errors ○ Some sources are referenced correctly in the agreed format with occasional errors	○ Ideas are presented in paragraphs but there is a lack of structure in how the work is presented ○ The work lacks an introduction that establishes the scope of the question ○ The work lacks a conclusion that summarise the main points raised ○ Work is not referenced accurately	
	Language and style	○ No spelling, grammar or punctuation errors ○ Writing style consistently clear, tone appropriate and easy to follow ○ Accurate and consistent use of technical language and vocabulary	○ Minimal spelling, grammar or punctuation errors ○ Writing style mostly clear, tone appropriate and easy to follow ○ Some attempts of using technical language and vocab alary, but not always accurate	○ Some spelling, grammar or punctuation errors ○ Writing style moderately clear, tone appropriate and easy to follow ○ Use of simple language and vocabulary effectively but struggles to use technical language	○ There are a significant number of spelling, grammar and punctuation errors ○ Use of simple language and vocabulary effectively but a lack of technical language	
Overall Mark (average of the 6 marks from the criteria above)						

Baseline Assignment (essay based): Pupil Feedback Report

Name of Pupil	
Name of School	Harris Academy Morden
Name of RIS teacher	Dr. M.E. Agi
Title of Assignment	How the "voice of customers" is used in designing quality products.

How your assignment is graded:

Grade	Marks	What this means
1st	70+	Performing to an excellent standard at A-level
2:1	60-69	Performing to a good standard at A-level
2:2	50-59	Performing to an excellent standard at GCSE
3rd	40-49	Performing to a good standard at GCSE
Working towards a pass	0-39	Performing below a good standard at GCSE
Did not submit	DNS	No assignment received by The Brilliant Club

Lateness	
Any lateness	10 marks deducted
Plagiarism	
Some plagiarism	10 marks deducted
Moderate plagiarism	20 marks deducted
Extreme plagiarism	Automatic fail

Marks

OVERALL MARK / 100		FINAL MARK / 100 (including any deductions)	
DEDUCTED MARKS		FINAL GRADE	

If marks have been deducted (e.g. late submission, plagiarism) the teacher should give an explanation in this section:

Mark Breakdown and Feedback

Knowledge and Understanding		Research and Evidence	
	mark		*mark*
Developing an Argument		**Critical Evaluation**	
	mark		*mark*
Structure and Presentation		**Language and Style**	
	mark		*mark*

Final Assignment (essay based): Pupil Feedback Report

Name of Pupil	
Name of School	Harris Academy
Name of RIS teacher	Dr. M. E Agi
Title of Assignment	How to make informed product design decisions through the analysis of customer satisfaction data

How your assignment is graded:

Grade	Marks	What this means
1st	70+	Performing to an excellent standard at A-level
2:1	60-69	Performing to a good standard at A-level
2:2	50-59	Performing to an excellent standard at GCSE
3rd	40-49	Performing to a good standard at GCSE
Working towards a pass	0-39	Performing below a good standard at GCSE
Did not submit	DNS	No assignment received by The Brilliant Club

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Marks

OVERALL MARK / 100		FINAL MARK / 100 (including any deductions)	
DEDUCTED MARKS		FINAL GRADE	

If marks have been deducted (e.g. late submission, plagiarism) the teacher should give an explanation in this section:

Mark Breakdown and Feedback

Knowledge and Understanding		Research and Evidence	
	mark		*mark*
Developing an Argument		**Critical Evaluation**	
	mark		*mark*
Structure and Presentation		**Language and Style**	
	mark		*mark*

Subject Vocabulary

Word	Definition	In a sentence
Quality	The standard of something as measured against other things of a similar kind; the degree of excellence of something	An improvement in product quality is expected
Automobile	A self-powered passenger vehicle that usually has four wheels and an internal-combustion engine, used for land transport	An automobile is also called a motor car
Manufacture	The making of articles on a large scale using machinery:	Special materials are used for the manufacture of armored vehicles"
Consumer	A person who purchases goods and services for personal use	Consumers are being lured by cheap prices
Design	A plan or drawing produced to show the look and function or workings of a product or system, before it is made or used	The design for the new car has just been unveiled
Engine	A machine with moving parts that converts power into motion	Engine failure is common among certain machineries
House of Quality	A diagram, resembling a house, used for defining the relationship between customer desires and the firm/product capabilities	The relationship between customer requirements and product features are often described with a House of Quality diagram
Conformance	Confirmation that a product, service or behaviour meets the requirements of accepted practices, specified standards, or certain performance requirements.	Teachers expect total conformance to behaviour rules in the classroom
Production	the method of turning raw materials or inputs into finished goods or products in a manufacturing process	The cost of production is very high for that toy car

Tutorial 1 – An Introduction to Product Quality

What is the Purpose of Tutorial 1?

By the end of this tutorial I will be able to…

- Define the term 'Quality'?
- Explain why it might be considered as a relative term
- Describe two important elements that influence the product design and manufacturing process

Starter: Your mobile phone is a very personal possession to you. You have been promised a new mobile phone of your choice as your next birthday gift, write down and share with your partner four most desirable features in your new phone.

Introduction

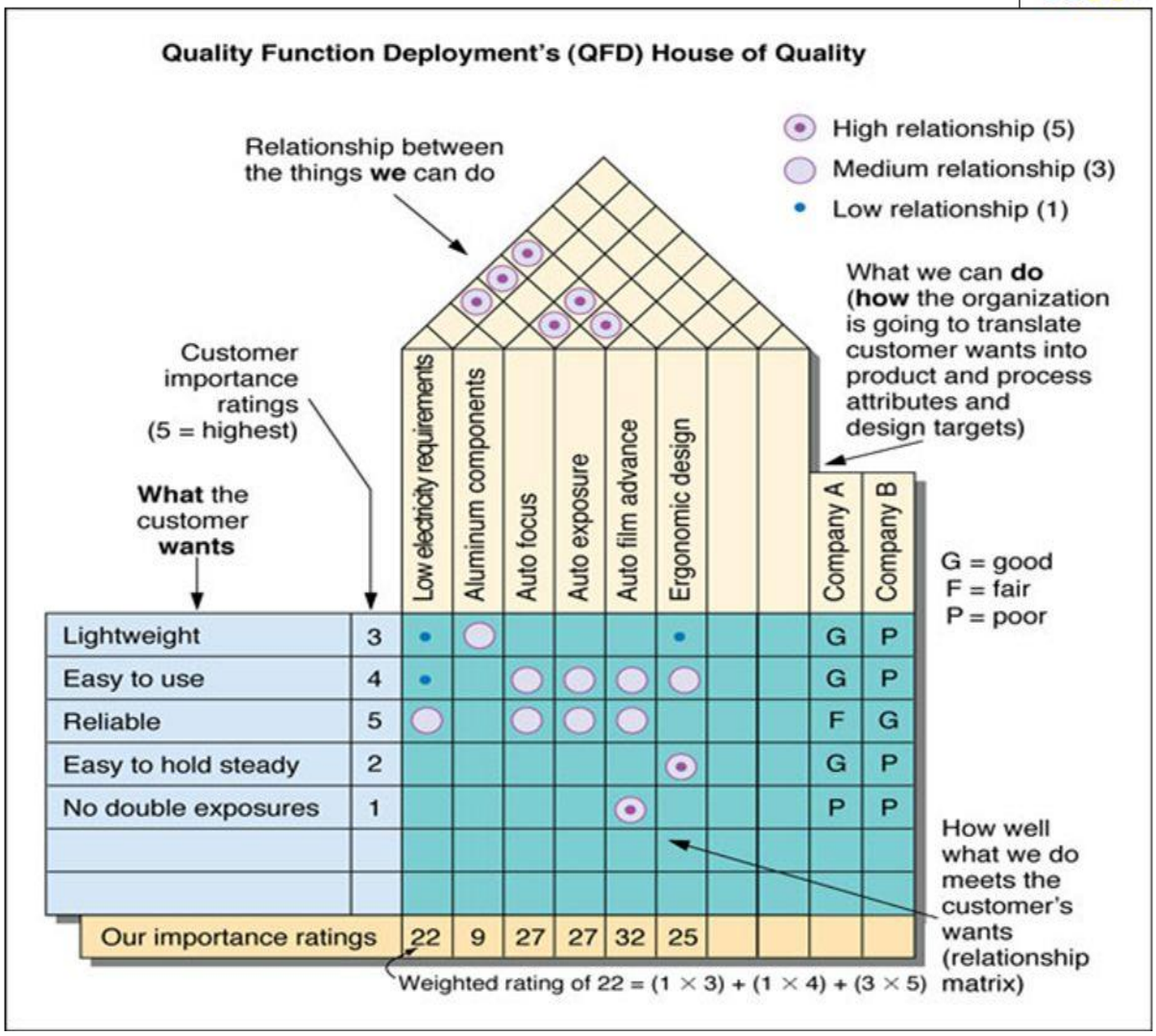
According to the International Standard for Quality Systems (in ISO 9000:2000), "Quality is the degree to which a set of inherent characteristics fulfil requirements. The term requirements here include the stated needs or expectations whether implied or obligated."

From this definition, it can be concluded that the concept of quality provides the base or serves as the instrument for measuring system functionality or product performance using set 'requirements' or 'purpose' as measurement reference points. Secondly, that customer satisfaction, in terms of meeting or exceeding expressed/implied needs or expectations, is central to the concept of quality.

'Product Quality' therefore describes a collection of product features that makes it sellable or desirable by consumers. Manufacturers use these features to meet basic or certain standard requirements.

Different techniques are used by product designers to interpret consumer expressed needs. One of these is called House of Quality, which is a diagram that resembles a house, used to show a translation of customer needs to technical features of the product. The diagram below is an example of House of Quality:

QFD House of Quality



Activity 1: The cards on your table contain different definitions of quality. Sort them according to the following themes 1. Customer-based definition, 2. Manufacturer-based definition. Reflect on the differences and similarities with your partner and be ready to share your thoughts

Activity 2: In your own words, write down a definition for quality

_____

_____

_____

Activity 3: Mention 3 functional features of a racing car that are most highly desired by consumers

_____

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_____

Activity 4: Translate the described features into technical and measurable terms for a designer to use in their model drawing.

_____

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_____

Baseline assignment:

40 adults were asked to select the features they would like in their next car. Their answers were recorded as shown in the table below:

Desired features	**Number of respondents**
I would like my next car to be faster	25
I would like my next car to be more stable	30
I would like my next car to have a smother drive	35
I would like my next car to stand out (stylish)	20
I would like my next car to have very reliable engine	36
I would like my next car to have better fuel efficiency (use up less petrol)	38
I I would like my next car to come with 6years warranty	30

Using the provided data, in 500 words, write an essay showing your analysis of the data

Baseline assignment instructions: The essay should include

1. An explanation of how and why the desires and expectations of the customers vary

2. A discussion on why the car designers and manufacturers might produce different models of the same brand of car

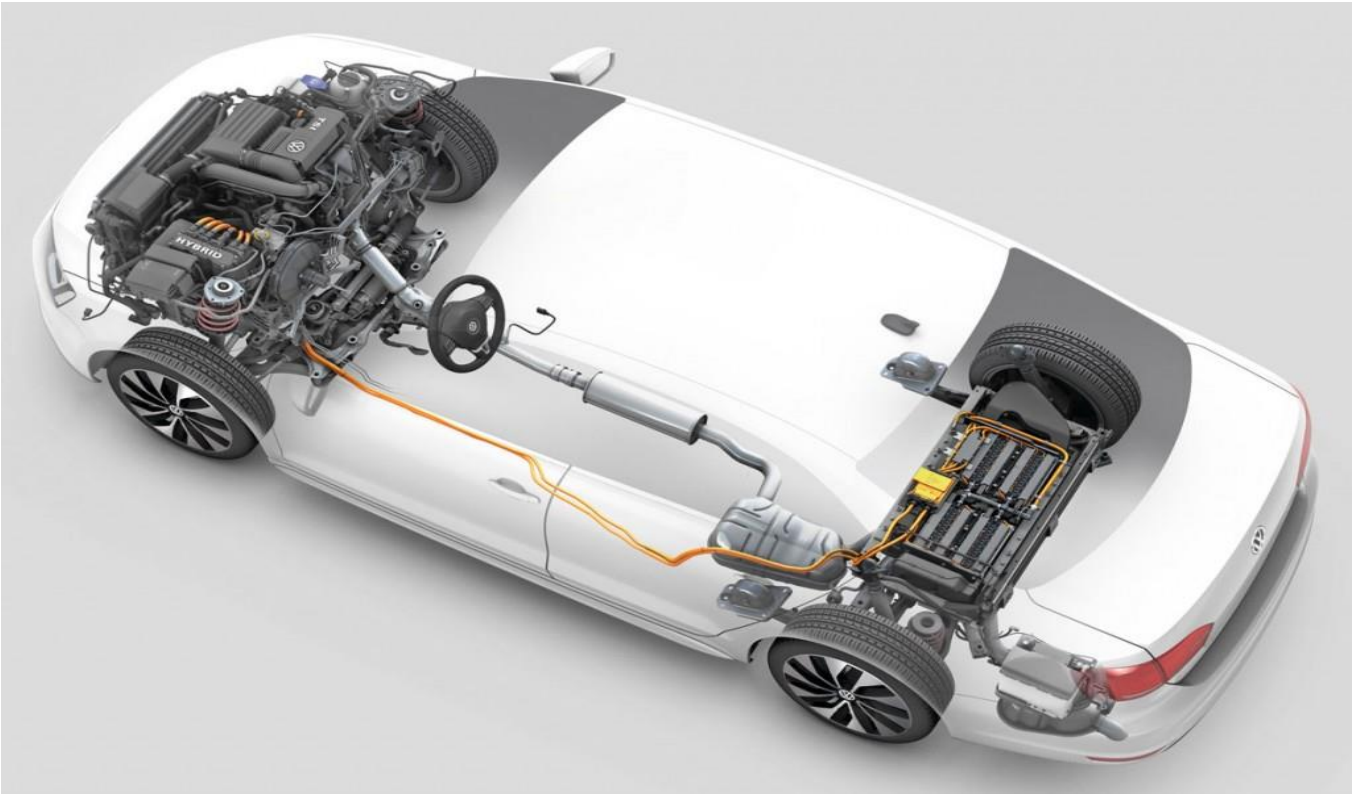
Baseline assignment success criteria:

The Brilliant Club Mark Scheme Skills	Examples of success criteria to include in the baseline assessment, final assignment and homework guidance
Knowledge and understanding	Include content that is relevant to the topic and the specific assignment/homework title or question. Include key words from the glossary and demonstrate that you understand them by explaining what they mean and how they relate to the topic.
Research and evidence	Include research findings from a wide range of sources. As well as using the sources provided, you should be discovering some sources yourself from the independent work that you do outside tutorials.
Developing an argument	Give reasons and evidence to back up the points that you make. You might find the PEE structure helpful: • Point – make the key point clear • Evidence – explain the evidence for the point • Explanation – explain why your point is relevant and important

	Make links to topics you have covered during tutorials as well as some topics that you have not discussed during tutorials.
Critical evaluation	Include evaluation of what is being described and provide clear justification and reasoning. Select relevant research evidence to back up your thinking.
Structure and presentation	Organise your ideas in paragraphs with a logical structure Include an introduction that clearly outlines what the assignment will contain. Include a conclusion that summarises all the key points clearly. Make sure that you have referenced everything correctly
Language and style	Make sure your spelling, grammar and punctuation are accurate. Use a formal style of writing that is appropriate for an academic essay.

Use the keywords in the glossary

Tutorial 2 – Designing for Quality 1



Source: Boronextrication.com

What is the Purpose of Tutorial 2?

By the end of this tutorial I will be able to…

- describe how the engine of an automobile works (from first principle) and demonstrate the scientific principles applied in its design (eg. Relationship between volume, temperature and pressure)
- explain why certain materials are generally used in the manufacture of the engine block of a car (Consider their physical properties such as thermal expansion and conductivity)

Aim:

- The purpose of this tutorial is to help pupils understand the various considerations made by product designers regarding the choice of materials for manufacturing the Engine Block of an automobile?

Starter: Watch the video that shows you how a closed bear can explode dangerously when thrown into a fire. From the video, write down at least two reasons why the can exploded so dangerously and then compare what you have written with your partner.

Introduction

The Engine Block is the skeleton system and the central component of any automotive engine. Some of the important properties to be considered in the choice of materials to be used in the manufacture of the engine block include:

Strength
Manufacturability
Resistance to thermal expansion
Good conductor of heat
Resistance to wear

Cast iron, Aluminium and their alloys are the common materials generally used to manufacture the engine block of automobiles.

The Functioning of the top cylinder which is housed by the engine block, to produce power and motion in an automobile is with the application of the scientific principle expressed in the three gas laws as shown below. They describe the relationship between temperature, pressure and volume.

Boyle's Law (constant temperature)

$$P \alpha \frac{1}{V}$$

$$PV = constant$$

Charles's Law (constant pressure)

$$V \alpha T$$

$$\frac{V}{T} = constant$$

Pressure Law (constant volume)

$$P \alpha T$$

$$\frac{P}{T} = constant$$

Activity 1: Explain the relationship between temperature and pressure in an enclosed material filled with air if the volume remains the same using the provided formula

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_____

_____

_____

_____

Activity 2: From the list of materials and their major properties provided, choose the best material that can be used by manufacturers to produce the engine/cylinder block of a car engine. Give 3 reasons for your choice

_____

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_____

_____

Homework instructions:

1. Identify and list 3 materials generally used by manufacturers to produce a car excluding those mentioned above

2. Give 1 reason for the choice of each listed material

Homework success criteria:
Give reasons and evidence to back up the point that you make. Include evaluation of what is being described and provide clear justification and logical reasoning.

Tutorial 3 – Designing for quality 2

Source: jebiga.com

What is the Purpose of Tutorial 3?

By the end of this tutorial I will be able to…

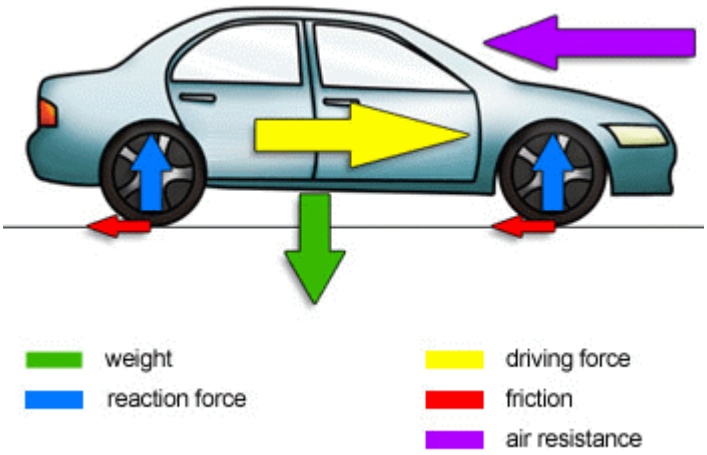
- identify the relationship between the size of an automobile and its unit speed
- describe the relationship between weight, speed and stability and how these principles are utilised in the design of an automobile
- explain how the shape of an automobile influences its speed and how smooth it runs.

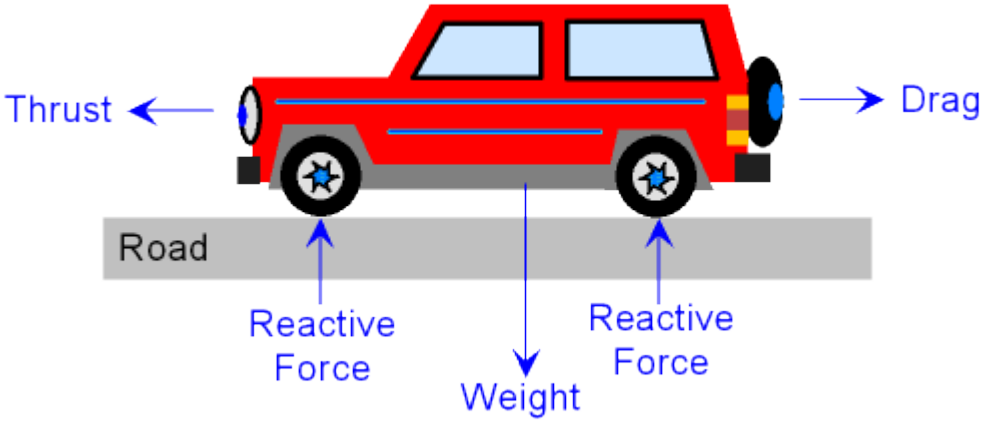
Aim:
The purpose of this tutorial is to demonstrate the scientific rationale behind the decisions around the size, weight and shape of an automobile

Starter:
From the provided pictures, rate the cars according to how fast you believe they can be when compared to the others. Use 1 to 10 points with one being the slowest and 10 the fasted.

Introduction

The force that results in the movement of a car from rest overcomes other opposing forces such as drag or air resistance. The size and shape of the car is therefore designed to reduce the effect of these opposing forces on a moving car.





Activity 1: The table below shows the average weight of cars with their sizes. Discuss with your partner which car is likely to be faster and why?

Compact car	1,354 kilograms
Midsize car	1,590 kilograms
Large car	1,985 kilograms

Activity 2: Write down three things that can make a car unstable (easily swerved out of control by wind or more likely to fall over during collision)

_____

_____

_____

Activity 3: Sketch the shape of a car you like. Using arrows, show the forces that act on that car during motion and describe the forces that are useful for the forward movement of the car and the forces that slow the car down.

_____

_____

_____

Homework
As a smart physics student, you have been asked to design a car with features that will reduce the air resistance and increase the unit speed. Suggest three things you can add or remove in your model car to achieve this objective. For each of the suggested features, explain why. (Use scientific relationships to justify your answer)

Homework instructions:
Sketch your model fast car, use the diagram to explain your suggestions.

Homework success criteria:
Every diagram should be clearly labelled or explained with keywords
Give reasons and evidence to back up the point that you make
Include evaluation of what is being described and provide clear justification and logical reasoning.

Tutorial 4 – Product Quality Measurement

What is the Purpose of Tutorial 4?

By the end of this tutorial I will be able to…

- Identify the different methods used in measuring quality in products
- describe how product performance data is used for continuous improvement
- Explain the implication of non-conformance in relation to consumers (customers) and business generally

Aim:
To demonstrate how quality in a product is measured and the implication of non-conformance to quality standards

Starter: Ryan bought a pair of trainers from his local Sport Direct shop, but later discovered that the left foot was smaller than the size on the label, so he decided to return the trainers to the shop and got a refund. List 4 ways this transaction will likely affect the shop.

Introduction

The initial concept of quality management was heavily manufacturing-based and mainly provided technical judgments for product quality through testing or gauging, which were collectively known as inspection. This process later evolved into a new and better organized system control process known as Quality Control (QC) involving the use of developed quality manuals, self-inspection process, use of statistics and better documentation control. This method was later replaced by another more efficient system known as Quality Assurance, which provided better system confidence due to its central focus on planning and prevention at source. The described evolution of quality management climaxed at Total Quality Management (TQM) with its special feature being the involvement of all employees, suppliers, and other stakeholders in ensuring quality in all processes and products.

With the central focus of quality management on customer satisfaction, product performance data has become a very important document in the design process as it shows what features should be included in the product to enhance functionality.

Non-conformance to set quality standard of a product results in a web of return or recall activities which is very expensive for manufacturers, especially as it creates negative perception among consumer about the brand

Activity 1: Mention two advantages and two disadvantages of measuring the quality of a car by inspection method only

_____

_____

_____

Activity 2: State three reasons why car manufacturers invest a lot of money and effort in conducting customer reviews.

_____

_____

_____

_____

Homework:

1. Describe 3 ways in which a low-quality car might affect the car manufacturing business generally
2. With the use of a process map, illustrate the concept of 'The Cost of Quality'

Tutorial 5 – Manufacturing Process Quality

What is the Purpose of Tutorial 5?

By the end of this tutorial I will be able to…

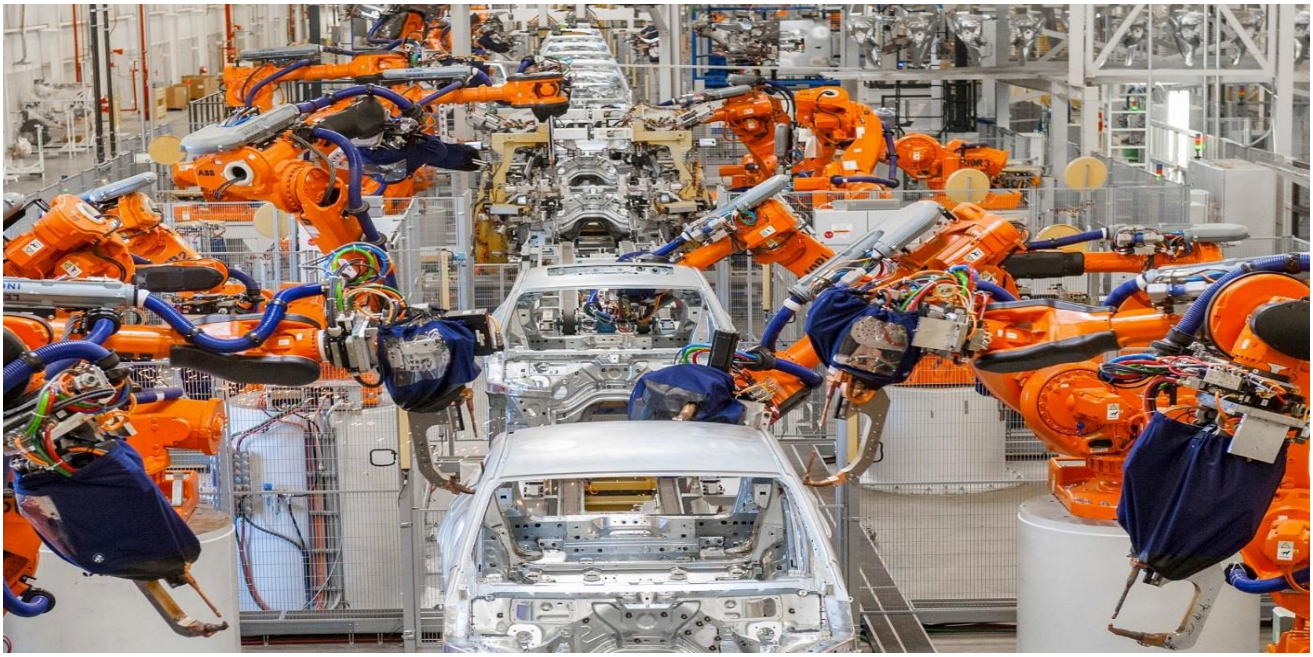
- understand the advantages and disadvantages of automated manufacturing process
- appreciate the importance of the layout of a production line
- understand how the calibration of manufacturing processes influence the product quality

Aim:
To demonstrate how automated manufacturing process-quality relates to or provides consistency in product quality.

Starter: Think, Write, Pair, share: List 4 advantages of using robots for any type of job instead of humans.

Introduction

One of the major advantages of automated manufacturing process over manual process is its ability to ensure repeatability which is an important factor for maintaining quality in large volume production. It also allows for self-inspection for quality at every stage of the production line. However, there are other factors to be considered to ensure that the right process is repeated. One of such factors is the calibration of such processes. This must be done with high precision.



Activity 1: State one advantage and one disadvantage of an automated manufacturing process (where robots are mostly used) in relation to ensuring product quality

_____

_____

_____

_____

Activity 2: List two important features of a good production line

_____

_____

_____

Final assignment

The design department of a car manufacturing company is looking for smart ideas to improve the quality of their cars and increase their business success margin. As an engineering design student, you have been contacted to provide ideas that will help them meet this objective. From a customer feedback sheet, the following statements have been highlighted to you as customer expectations or needs:
"I want my next car to be faster"
"I want my next car to run smoother"
"I want my next car to be more stable"
"I want my next car to come with 6 years guarantee" (High performance quality, no much room for failure)
In 2000 words write a report to the company, suggesting ways that the customer expectations can be satisfied. Use each of the customer expectations as a topic sentence.

The Brilliant Club Mark Scheme Skills	**Examples of success criteria to include in the baseline assessment, final assignment and homework guidance**
Knowledge and understanding	Include content that is relevant to the topic and the specific assignment/homework title or question. Include key words from the glossary and demonstrate that you understand them by explaining what they mean and how they relate to the topic.
Research and evidence	Include research findings from a wide range of sources. As well as using the sources provided, you should be discovering some sources yourself from the independent work that you do outside tutorials.
Developing an argument	Give reasons and evidence to back up the points that you make. You might find the PEE structure helpful: • Point – make the key point clear • Evidence – explain the evidence for the point • Explanation – explain why your point is relevant and important Make links to topics you have covered during tutorials as well as some topics that you have not discussed during tutorials.
Critical evaluation	Include evaluation of what is being described and provide clear justification and reasoning. Select relevant research evidence to back up your thinking.
Structure and presentation	Organise your ideas in paragraphs with a logical structure Include an introduction that clearly outlines what the assignment will contain. Include a conclusion that summarises all the key points clearly. Make sure that you have referenced everything correctly
Language and style	Make sure your spelling, grammar and punctuation are accurate. Use a formal style of writing that is appropriate for an academic essay.

Tutorial 6 – Feedback tutorial

What is the Purpose of Tutorial 6?

- To receive feedback on your final assignment
- To respond to the feedback from your Uni Pathways teacher
- To write targets for improvement on your final assignment

Final assignment feedback from your Uni Pathways Teacher

(Remember to look at the mark scheme to help you understand what you have done well so far, and how you can do even better in your final assignment)

Here are three things that my Uni Pathways Teacher thought I did well in my draft assignment
•   •   •

Here are three things that my Uni Pathways Teacher thinks that I could do to get a higher mark in my final assignment
•   •   •

Tasks from my Uni Pathways Teacher to do during the feedback tutorial to help me improve
•   •   •
My response:

Actions I will take to improve my final assignment after this tutorial…
•   •   •

Hand in date for my final assignment:	

Tutorial 7 – Final tutorial

What is the Purpose of Tutorial 7?

- To receive feedback and a grade on your final assignment.
- To reflect on the programme including what you enjoyed and what was challenging.
- To ask any questions you may have about university.

Final assignment feedback from my Uni Pathways Teacher

Final mark:	University style grade:
Feedback: Here are three things that my Uni Pathways teacher thought I did well in my final assignment • • •	

Here are three things that my Uni Pathways teacher thinks I should remember for when I am doing this kind of study in the future
• • •

University

What questions do you still have about University after taking part in Uni Pathways?
•   •   •

Reflecting on Uni Pathways

What did you most enjoy about Uni Pathways?
•   •   •

What did you find challenging about the programme?	How did you overcome these challenges?
• • •	• • •

Appendix 1 – Referencing correctly

When you get to university, you will need to include references in the assignments that you write, so we would like you to start getting into the habit of referencing in your Brilliant Club assignment. This is really important, because it will help you to avoid plagiarism. Plagiarism is when you take someone else's work or ideas and pass them off as your own. Whether plagiarism is deliberate or accidental, the consequences can be severe. In order to avoid losing marks in your final assignment, or even failing, you must be careful to reference your sources correctly.

What is a reference?

A reference is just a note in your assignment which says if you have referred to or been influenced by another source such as book, website or article. For example, if you use the internet to research a particular subject, and you want to include a specific piece of information from this website, you will need to reference it.

Why should I reference?

Referencing is important in your work for the following reasons:

- It gives credit to the authors of any sources you have referred to or been influenced by.
- It supports the arguments you make in your assignments.
- It demonstrates the variety of sources you have used.
- It helps to prevent you losing marks, or failing, due to plagiarism.

When should I use a reference?

You should use a reference when you:

- Quote directly from another source.
- Summarise or rephrase another piece of work.
- Include a specific statistic or fact from a source.

How do I reference?

There are a number of different ways of referencing, and these often vary depending on what subject you are studying. The most important to thing is to be consistent. This means that you need to stick to the same system throughout your whole assignment. Here is a basic system of referencing that you can use, which consists of the following two parts:

1. **A marker in your assignment**: After you have used a reference in your assignment (you have read something and included it in your work as a quote, or re-written it your own words) you should mark this is in your text with a number, e.g. [1]. The next time you use a reference you should use the next number, e.g. [2].
2. **Bibliography**: This is just a list of the references you have used in your assignment. In the bibliography, you list your references by the numbers you have used, and include as much information as you have about the reference. The list below gives what should be included for different sources.

    a. **Websites** – Author (if possible), title of the web page, website address, [date you accessed it, in square brackets].

    E.g. Dan Snow, 'How did so many soldiers survive the trenches?', http://www.bbc.co.uk/guides/z3kgjxs#zg2dtfr [11 July 2014].

    b. **Books** – Author, date published, title of book (in italics), pages where the information came from.

    E.g. S. Dubner and S. Levitt, (2006) *Freakonomics*, 7-9.

    c. **Articles** – Author, 'title of the article' (with quotation marks), *where the article comes from* (newspaper, journal etc.), date of the article.

    E.g. Maev Kennedy, 'The lights to go out across the UK to mark First World War's centenary', Guardian, 10 July 2014.

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