Researchers in Schools

The First Modern Economy: England's Industrial Revolution, 1700-1900

Pupil Name

Coursebook Designed by **Dr J.F. Field**

Timetable and Assignment Submission

Timetable – Tutorials

Tutorial	Date	Time	Location
1	2 December 2019	1.00 p.m.	Senate House
2	13 January 2020	3.30 p.m.	Brentford School for Girls
3	20 January 2020	3.30 p.m.	Brentford School for Girls
4	27 January 2020	3.30 p.m.	Brentford School for Girls
5	3 February 2020	3.30 p.m.	Brentford School for Girls
6 (Feedback)	10 February 2020	3.30 p.m.	Brentford School for Girls
7 (Feedback)	9 March 2020	3.30 p.m.	Brentford School for Girls

Timetable – Homework Assignments

Homework Assignment	Description	Due Date
Tutorial 1	Baseline assignment: What is an industrial revolution? (c. 500 words)	9 December 2019
Tutorial 2	How agriculture changed in England during the nineteenth century (short analysis of two maps)	17 January 2020
Tutorial 3	Why did people mechanise manufacturing? (short analysis of an extract from an academic article)	24 January 2020
Tutorial 4	Why and how is the state important to the economy? (short analysis of an extract from a book)	31 January 2020
Tutorial 5	Planning and drafting your final assignment	7 February 2020

Assignment Submission – Lateness and Plagiarism

Lateness	
Submission after midnight on 5 March 2020	10 marks deducted
Plagiarism	
Some plagiarism	10 marks deducted
Moderate plagiarism	20 marks deducted
Extreme plagiarism	Automatic fail

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Course Rationale

This course is designed to introduce students to the study of social and economic history, and allow them to build up skills and knowledge they can apply across a wide range of subjects. It will draw on evidence not from just historians, but also economists and geographers; therefore, students will have the chance to study different types of evidence. This will help them understand some of the central questions in history - how was the first modern economy built, what was its impact, and why did this first industrial revolution take place in England?

For most of history, the vast majority of people had monotonous, labourious, and unhealthy lives. One-third of the population died before their first birthday, and those who were fortunate enough to live past this were, for the most part, destined for absolute poverty. The first place that people began to move away from this existence was in England, from around the mid-eighteenth century on. The cause of this transformation was industrialisation, which laid the foundations for contemporary society, where the majority of the world has achieved a standard of living that far surpasses even the elites of past centuries. The English Industrial Revolution saw the development of new technologies that led to huge improvements in manufacturing productivity, making products more efficiently and cheaply. This helped contribute towards to a shift to the first modern economy. Such radical economic changes are still occurring in recent times; both China and India have undergone transitions to an industrialised economy, although many parts of the world have not yet experienced an industrial revolution.

The first tutorial will provide an introduction to eighteenth-century England's economy and society, and look at the some of the context behind the country's initial industrialisation. This will build a foundation towards the second, third, fourth, and fifth tutorials, which will look at different causes of the Industrial Revolution; the agricultural revolution, mechanisation of manufacturing, the financial revolution, institutional change, and the transport revolution. During these tutorials students will also be introduced to important academic skill, such as: note-taking from lectures, learning the foundations of academic writing, effectively structuring essays and arguments, forming bibliographies, and accurate referencing. The sixth tutorial will help them to prepare for their final assignment, a 2,000-word essay entitled *To What Extent were Technological Developments in Manufacturing Central to the Industrial Revolution?*; students will present a plan and draft of their essay and be given advice for how to improve it. The final tutorial will be aimed at providing feedback for this essay, as well as a chance to discuss their long-term plans for their education, as they move towards A-Level and university.

Uni Pathways Mark Scheme 2019/20 – 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 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 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 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	o Moves beyond description to an assessment of the value or	o Mostly description but some assessment of the value or	o Describes with minimal assessment of the value or significance of	o The work is descriptive in nature and there is a	

	evaluation	significance of what is described o Evaluative points are consistently explicit/systematic/reasoned/justified o Effectively critiques the reliability of sources provided	significance of what is described o Evaluative points are mostly explicit/systematic/reasoned/justified o Some evidence of critiques on the reliability of sources provided	what is described o Evaluative points are at times explicit/systematic/reasoned/justified o Limited evidence of critiques on the reliability of sources provided	lack of critical engagement in the value of sources	
Written communication	Structure and presentation	o Ideas are presented in paragraphs and arranged in a logical structure that is appropriate for the assignment o The introduction clearly outlines how the essay/report will deal with the issues o The conclusion summarises all the main points clearly and concisely o All sources are referenced correctly in an agreed format	o Ideas are presented in paragraphs and arranged in a structure that is mostly appropriate for the assignment o The introduction adequately describes how the essay/report will deal with the issues o The conclusion summarises most of the main points clearly o Most sources are referenced correctly in an agreed format	o Ideas are presented in paragraphs and arranged in a structure o The introduction mentions how the essay/report will deal with the issues o The conclusion summarises some of the main points clearly o Some sources are referenced correctly in the agreed format with occasional errors	o Ideas are presented in paragraphs but there is a lack of structure in how the work is presented o The work lacks an introduction that establishes the scope of the question o The work lacks a conclusion that summarise the main points raised o Work is not referenced accurately	
	Language and style	o No spelling, grammar or punctuation errors o Writing style consistently clear, tone appropriate and easy to follow o Accurate and consistent use of technical language and vocabulary	o Minimal spelling, grammar or punctuation errors o Writing style mostly clear, tone appropriate and easy to follow o Some attempts of using technical language and vocab alary, but not always accurate	o Some spelling, grammar or punctuation errors o Writing style moderately clear, tone appropriate and easy to follow o Use of simple language and vocabulary effectively but struggles to use technical language	o There are a significant number of spelling, grammar and punctuation errors o 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	
Name of RIS teacher	
Title of Assignment	

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	
Name of RIS teacher	
Title of Assignment	

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
Economy	The system of how money, goods, and services are made and used.	
Capitalism	An economic system in which the ultimate goal is profit. Goods and services are produced with the aim of making money.	
Industry	Activity concerned with turning raw materials, such as wool, into products, such as textiles.	
Technology	In economics, this means using knowledge (often scientific) to a practical purpose; particularly using resources to produce goods and services.	
Standard of living	The level of comfort, wealth, and health that people in a place live in, as well as the goods and services available to them.	
Gross Domestic Product (GDP)	The total value of **all** the goods and services produced or made in a country over a period of time (usually one year). It is sometimes given as a **per capita** figure, which means the average amount produced by each person in a country.	
Agriculture	Farming, including the cultivation of plants from soil (**arable**) and the raising of animals (**pastoral**).	
Output	The amount of something produced by a machine, business, or country over a period of time.	
Sector (Primary, Secondary, Tertiary)	This system divided the economy into **three** parts: **primary** (extraction of raw materials), **secondary** (manufacturing them into goods), and **tertiary** (providing services, including transport and retail).	
Urbanisation	The process of people moving to towns and cities.	

Division of Labour	Giving out specialised tasks in a system to make it produce more and speed up the process.	
Real Wage	The amount someone is paid, adjusted for changes in prices, which means the value of the wage can be compared to other time periods.	
Supply and Demand	Supply is the amount of something available to buy, and demand is the amount of something that people are willing and able to buy.	
Efficiency	The ability to avoid wasting something (for example, fuel, time, or money) in doing a task.	
Infrastructure	Facilities and systems serving a place (for example, roads, sewers, or bridges).	
Market	A structure that allows the buying and selling of goods and services.	
Institutions	The rules of the game! Things that govern behaviour in a community or place – some are formal (for example, laws created by a government), some are informal (for example, customs of a society).	

Tutorial 1 – What is an industrial revolution?

What is the Purpose of Tutorial 1?

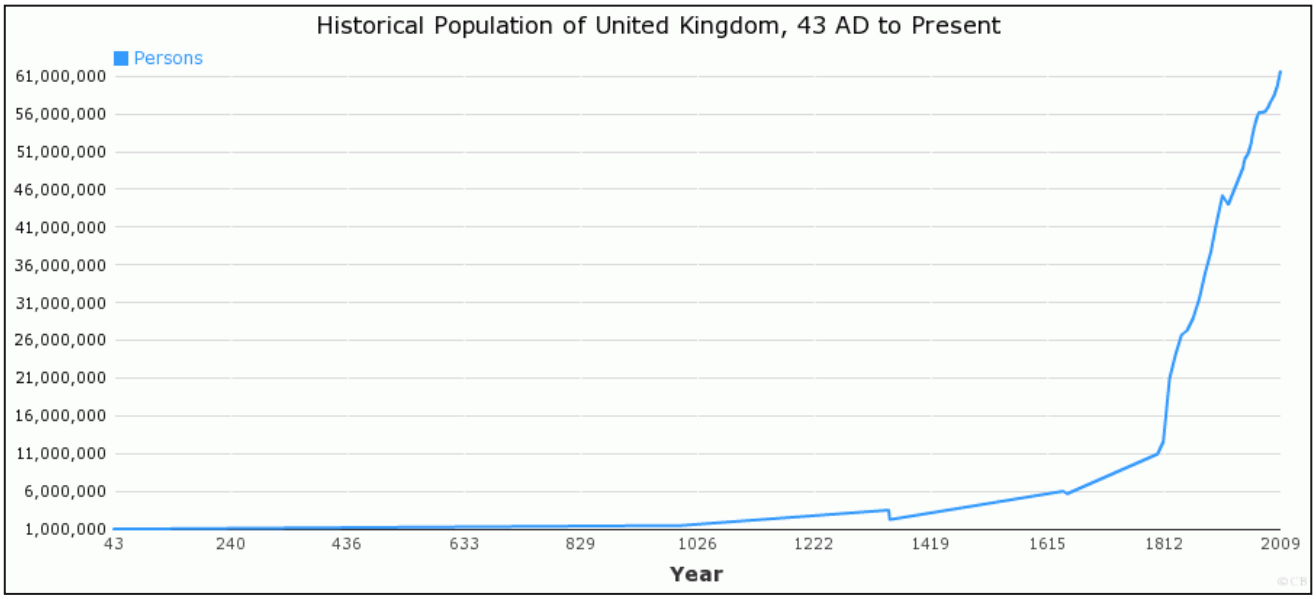
- Introduce the concept of an 'industrial revolution'
- Explore what England was like before the Industrial Revolution, and some of the differences and similarities between then and now
- Consider how new inventions and technologies can change our lives
- Provide information about the structure of the course, and the final assignment

Key Learning Outcomes

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

- Identify some of the main differences between England now and England before the Industrial Revolution, and how the country has changed
- Begin to understand what is meant by an 'industrial revolution'
- Be aware of what a university-style essay entails

Activity 1: England Before and After the Industrial Revolution



This graph shows the total population of the United Kingdom from 43 CE to 2009 CE. By yourselves, circle on the line **three** periods in time where you can see there was a major change. As an extension task, note down what you think caused this change.

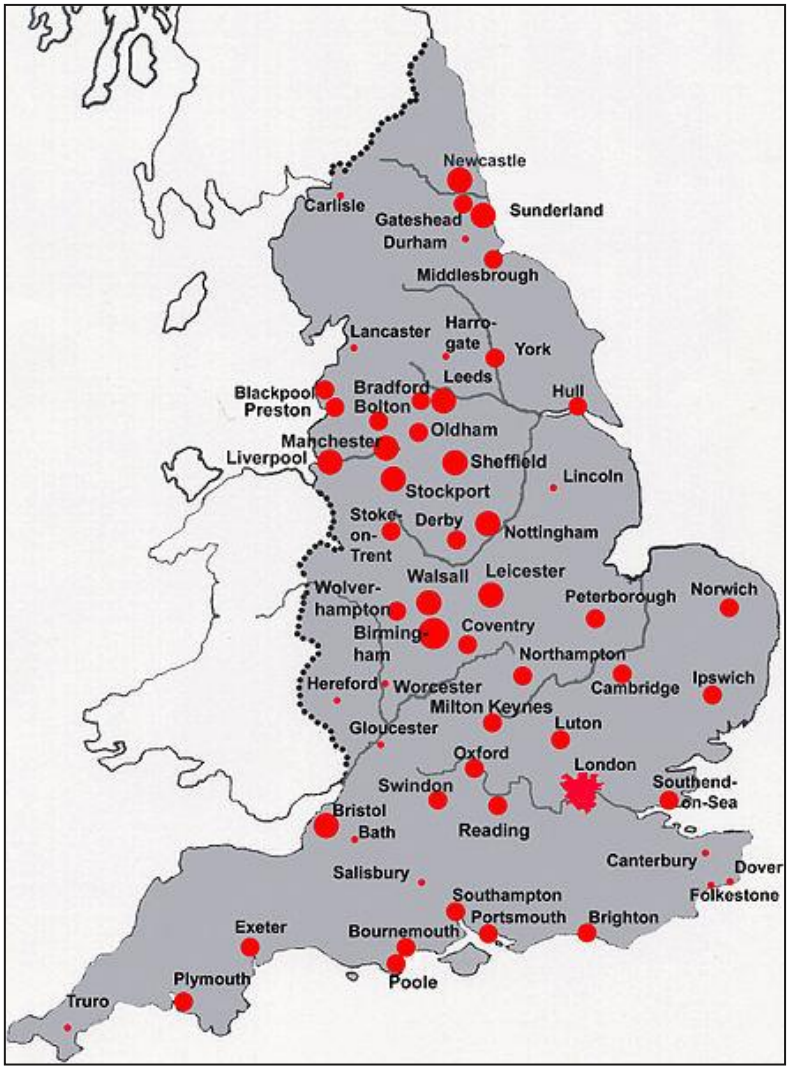
This graph shows economic change in England from 1270 to 2016. The way it is measuring it is **Gross Domestic Product (GDP) Per Capita** (see the glossary for what this, and other key words, mean). Mark on this graph the point (or paints) in time where you see the economy begin to grow more quickly, or change. Think about the following questions, which we will discuss as a group:

- How does this match the timing of population growth in the first graph?

- Does increased wealth have any impact on population?

Activity 2: England Before and After the Industrial Revolution

Get into pairs, and in the next five minutes, look at this map of England. Draw a circle around what you think are the five cities with the largest populations **right now**. Then, draw a square around what you think were five cities with the largest populations in **1700**. Some of them will be the same. Don't worry if you aren't sure – make a guess! We will discuss your answers; you can then write the m in the table below the map, along with the populations of the cities (I will also tell you these!).



Rank	Biggest cities in 1700	Biggest cities in 2020
1.		
2.		
3.		
4.		
5.		

What are the differences and similarities in the locations of the largest cities between 1700 and today?

Activity 3: Technology and the Economy

Much economic growth is due to technological innovations that increase output whilst decreasing the amount of labour needed. The German economist and political theorist **Karl Marx (1818-83)** was the first major thinker to set out the huge role that new technologies play in encouraging economic growth. More recently the Austrian economist **Joseph Schumpeter (1883-1950)** argued that new technologies were the basis for dynamic growth. He used the metaphor of the 'gale of creative destruction' to describe how the economy would be subject to constant waves of change due to new innovations. This process leads to technologies become obsolescent. It can be traumatic for workers who lose their jobs as a result of this. However, in the long-run creative destruction can increase productivity. Job losses do occur, but they do not always lead to permanent unemployment (yet!): for example from 1999 to 2009 338.9 million private sector jobs were lost in the USA but over the same period 337.5 million new ones were created.

By yourselves, think about the most important innovation, invention, or new technology that has been developed in the last ten years. Then write them down along with your thoughts on the following questions:

- How would your life change if it was taken away for one week?
- Has it created new jobs?
- Has it taken away jobs?

We will then discuss your thoughts as a group.

Homework – What is an industrial revolution? (Baseline assignment)

Write an explanation of 500 words to give your answer to the question 'What is an industrial revolution?'.

You should draw on the discussion from today's tutorial, the short reading in the handbook provided below and your own knowledge. There is no need to do any research beyond this. To organise your answer, select the three most important features of an industrial revolution, and write a paragraph of about **150 words** about each of them, and why you think they are significant. Your essay should start with a short introduction of **25 words** and end with a short conclusion of about **25 words** saying which theme you thought was most important or significant (note: all word counts are recommendations – you don't have to be exact). Some of the themes you can think about include: changes in economy/society, new ways of making things and technological developments.

A successful assignment will:

- Show you have thought about what the different features of an industrial revolution are by addressing a different theme in each paragraph
- Be about 500 words long
- Be organised into three paragraphs, with an introductory and concluding sentence
- Have a clear subject/theme for each paragraph
- Be written in a formal/academic style
- Have very few grammatical/spelling errors

Reading 1 – The Roots of the Industrial Revolution

For most of human history economies were virtually stagnant, meaning they did not grow very quickly. Most activity was agricultural, and aimed just at subsistence or fulfilling feudal obligations. Some of the features of modern economies began to emerge in Western Europe after 1500. However, for the next three centuries economic growth remained very slow by today's standards. Most economies grew at no more than two per cent per decade, if that.

New technologies are very important to industrialization. The most important early developments, which first occurred in Britain, were the steam engine and mechanization of manufacturing. The first steam engines were designed in the late seventeenth and early eighteenth centuries to pump water out of mines. However, they were not yet accurate enough to be used to drive machinery and very expensive because they used a lot of fuel. In the 1760s and 1770s a steam engine with a rotary motion smooth enough to run machinery was developed. This allowed manufacturing to be mechanized, meaning it did not have to be done by hand, but by machines. The first industry to undergo mechanization was textiles, although it took a long series of inventions. As these new mechanical devices were too large and expensive to be used at home, it was cheaper to centralize them into factories. This contributed to urbanization as factories tended to be placed in towns and cities, which were close to workers, customers, and transport hubs. During this time growing farming had to become more productive to (driven by new techniques and more efficient land use) freed up people to go to urban areas to work in manufacturing.

Improvements in transport were vital. They allowed raw materials and goods to be distributed more cheaply and quickly. After the 1830s a new method of transportation took off in Britain: the steam-powered railway. This made transportation more reliable; decreasing travel times and increasing capacity. Improvements in transport lowered the costs of raw materials for producers and finished goods for consumers. Businesses could sell in markets where previously transport costs would have made their products too expensive compared to ones made locally. The final major ingredient of the Industrial Revolution is institutions; which include political systems, legal codes, and financial bodies. The most important institutions were the state and legal system and financial bodies (such as banks and insurance companies).

The first place these trends occurred was in England, during the mid-eighteenth century. However, after 1820 capitalism took off in Western Europe and North America. As a result of the Industrial Revolution, the world population increased rapidly. At the same time there were also increases in life expectancy and wages.

Technological innovations accelerated during the nineteenth century – this period is sometimes known as the Second Industrial Revolution. Steam power was adopted for ships. This enabled faster, more reliable oceanic crossing at higher capacity than sail-powered vessels. The means to generate electricity and convert it into light or mechanical energy were discovered. Electricity was used to send messages via telegraph, creating a worldwide communication system. These developments in transport and communication meant globalization gathered momentum. Electrification and improved engines allowed the introduction of mass production. Factories began to use moving assembly lines, with each worker assigned a specific, repetitive task. This made some products, for example cars, cheaper than ever.

Tutorial 2 – The Agricultural Revolution

What is the Purpose of Tutorial 2?

- Recap on the launch tutorial
- Learn about how agricultural productivity was increased during the Industrial Revolution
- Understand the role that new farming technologies and methods played in this improvement
- Introduction to structuring of university-style essays

Key Learning Outcomes

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

- Identify when the Agricultural Revolution happened and what its main impact was
- Explain some of the ways that farming changed in England during the eighteenth and nineteenth centuries
- Know how a university-style essay is structured and laid out

Activity 1: Baseline Assignment Recap

Before we look at changes in agriculture, it is vital that to make sure that you all understand what is meant by an 'industrial revolution'. In pairs, discuss what your definitions of an industrial revolution were. You should think about the following questions:

- Were there any differences between your definitions?
- What do you think was the most important feature of an industrial revolution?
- How does this revolution differ to other revolutions you have studied in history?

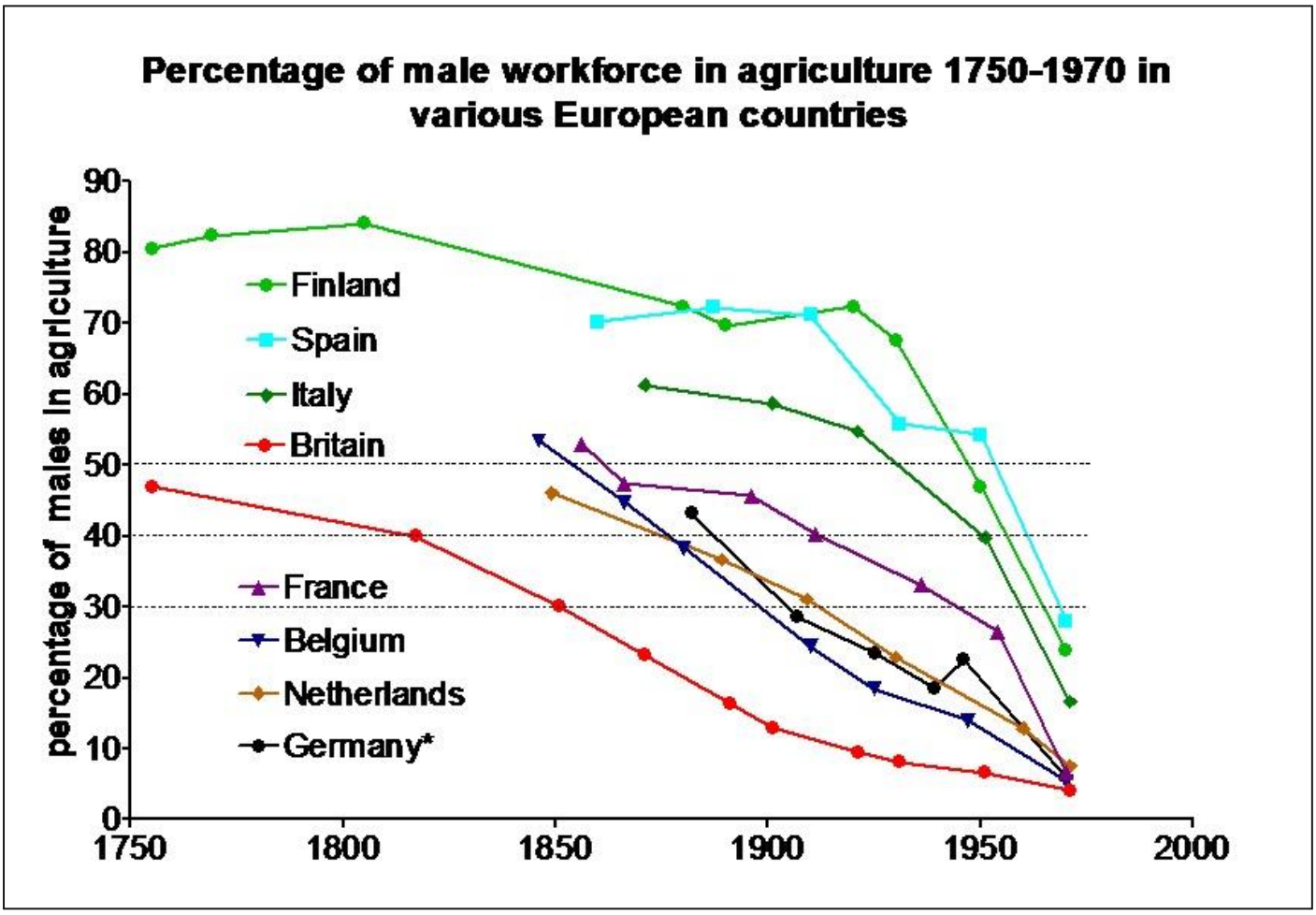
Then, between you write on a post-it note **three** things that happen when a society goes through an industrial revolution. Be prepared to feed back to the group!

Activity 2: What was the Agricultural Revolution and when did it happen?

This table describes England's agricultural output from 1300 to 1851:

Year	Population (millions)	Net Agricultural Imports (%)	Output Index (1701=100)
1300	6.0	0	117
1520	2.4	0	47
1601	4.1	0	80
1701	5.1	-2	100
1751	5.8	-8	121
1801	8.7	5	159
1851	16.7	16	272

This graph shows what percentage of men (note: we will discuss why women weren't included in the tutorial!) worked in agriculture in a selection of European countries.



Looking at the table, think about when there was significant change in agriculture. Then, looking at the graph, think about how Britain was different from other places in Europe in 1850 and 1900.

Activity 3: Mini-lecture on factors explaining the Agricultural Revolution

To get you used to university-style learning I am going to give a mini-lecture on some of the factors that explained the English Agricultural Revolution. I will only speak for about **5-10 minutes**; in general lectures at university tend to last between 45 minutes and 1 hour.

I encourage you to take notes. Use the following headings:

- Changes in Cropping
- New Farming Technology
- Animal Husbandry
- The Enclosure Movement

Be prepared to discuss some of what was spoken about in the mini-lecture afterwards. Also, be sure to ask me if there are any terms or words that you are unfamiliar with!

After today's tutorial I will email my lecture slides to you.

Activity 4: Agriculture and Economic growth in twentieth-century Asia

Finally, it is important to realise just how vital agriculture is to developing a modern, industrialised, economy. Many nations (particularly in East Asia) have only relatively recently begun to experience the rapid improvements in agriculture that occurred in England during the eighteenth and nineteenth centuries. Below is a short extract from the economist and journalist Joe Studwell's book, *How Asia Works: Success and Failure in the World's Most Dynamic Region* (London, Profile Books, 2013):

Reading 2 – Extract from *How Asia Works*

> '[T]here are three critical interventions that governments can use to speed up economic development. Where these interventions have been employed most effectively in east Asia – in Japan, South Korea, Taiwan and now China – they have produced the quickest progressions from poverty to wealth that the world has seen. When, by contrast, other east Asian states have set off with the same ambitions and equal or better endowments, but have not followed the same policies, they have achieved fast growth for a period but the progress has proved to be unsustainable.
>
> The first intervention – and the most overlooked - is to maximise output from agriculture, which employs the vast majority of people in poor countries. Successful east Asian states have shown that the way to do this is to restructure agriculture as highly labour-intensive household farming – a slightly larger- scale form of gardening. This makes use of all available labour in a poor economy and pushes up yields and output to the highest possible levels, albeit on the basis of tiny gains per person employed. The overall result is an initial productive surplus that primes demand for goods and services.
>
> The second intervention – in many respects, a second 'stage' – is to direct investment and entrepreneurs towards manufacturing. This is because manufacturing industry makes the most effective use of the limited productive skills of the workforce of a developing economy, as workers begin to migrate out of agriculture. Relatively unskilled labourers create value in factories by working with machines that can easily be purchased on the world market. In addition, in east Asia successful governments pioneered new ways to promote accelerated technological upgrading in manufacturing through subsidies that were conditioned on export performance. This combination of subsidy and what I call 'export discipline' took the pace of industrialisation to a level never before seen.

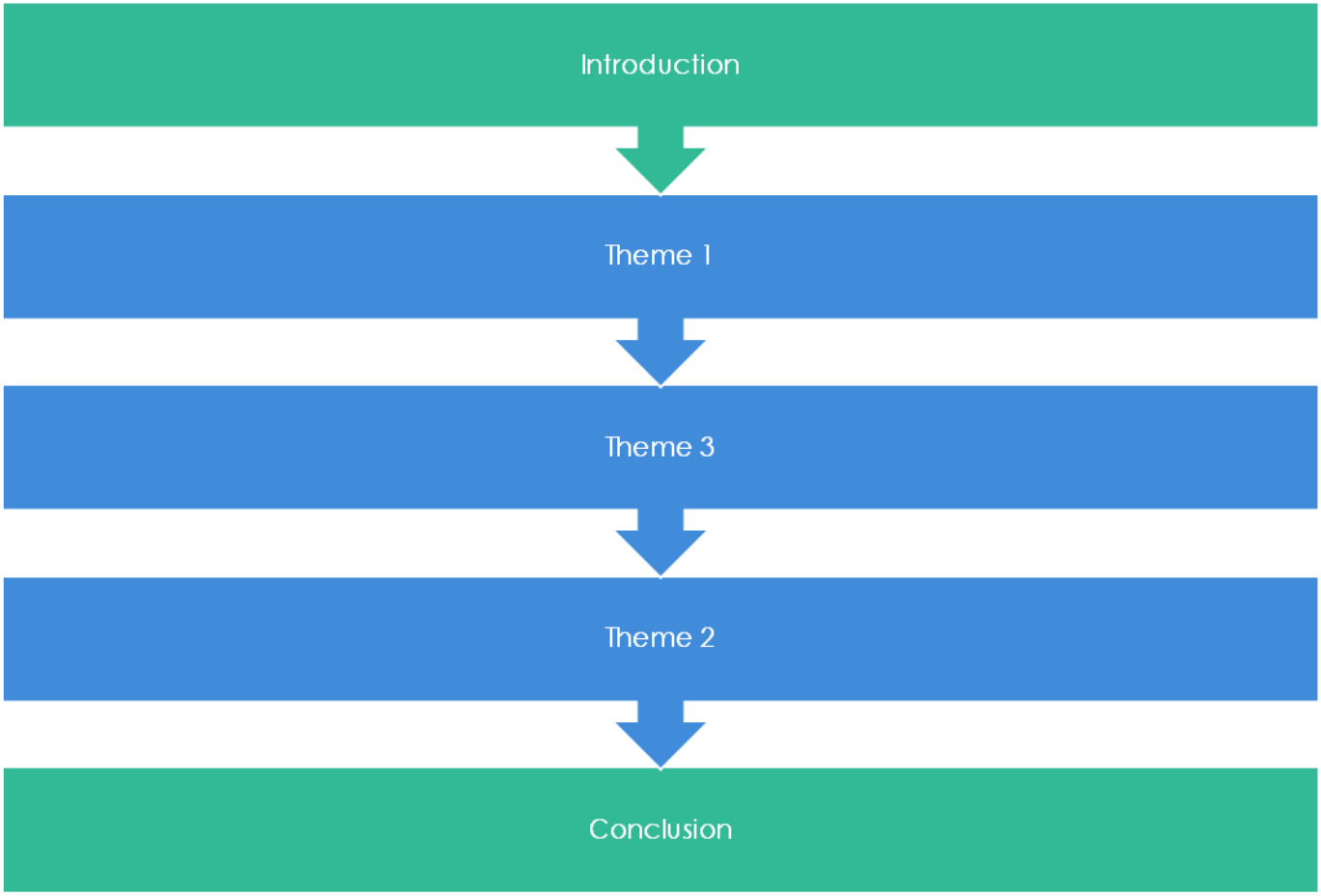
> Finally, interventions in the financial sector to focus capital on intensive, small-scale agriculture and on manufacturing development provide the third key to accelerated economic transformation. The state's role is to keep money targeted at a development strategy that produces the fastest possible technological learning, and hence the promise of high future profits, rather than on short-term returns and individual consumption. This tends to put the state against many businesses, and also against consumers, who have shorter strategic horizons.'

Studwell argues agricultural progress is essential to economic growth. Why do you think he argues this? Do you agree?

Academic skill: University-style essay structure

At university (and indeed, in GCSE and A-Level), effectively structuring an essay is a key foundation of success, particularly when you are writing under timed conditions in an exam. Knowing how to structure an essay will ensure that your argument is clear to the reader, and that you include all of the key points you need to.

In general, I recommend you structure your essays using the following format (although feel free to adapt this as you see fit):

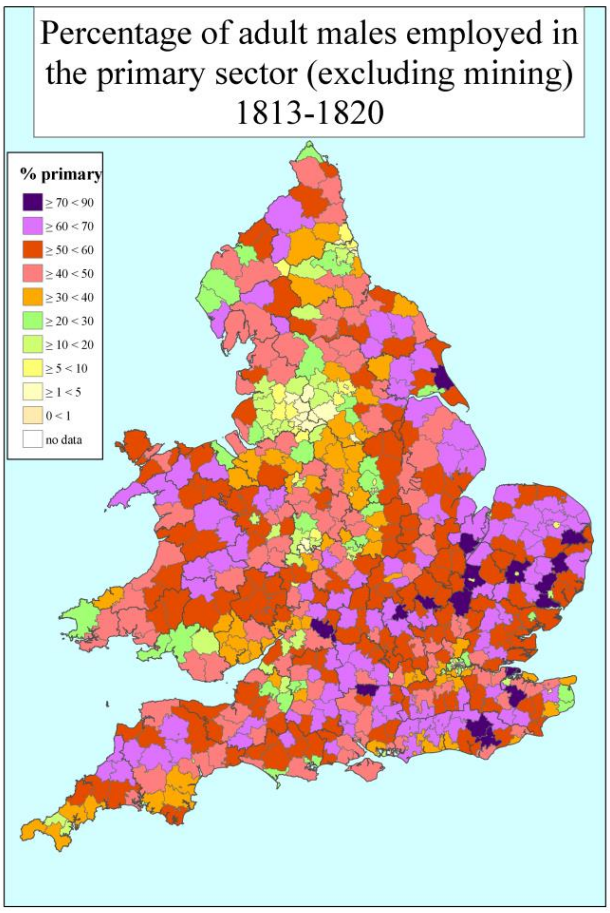


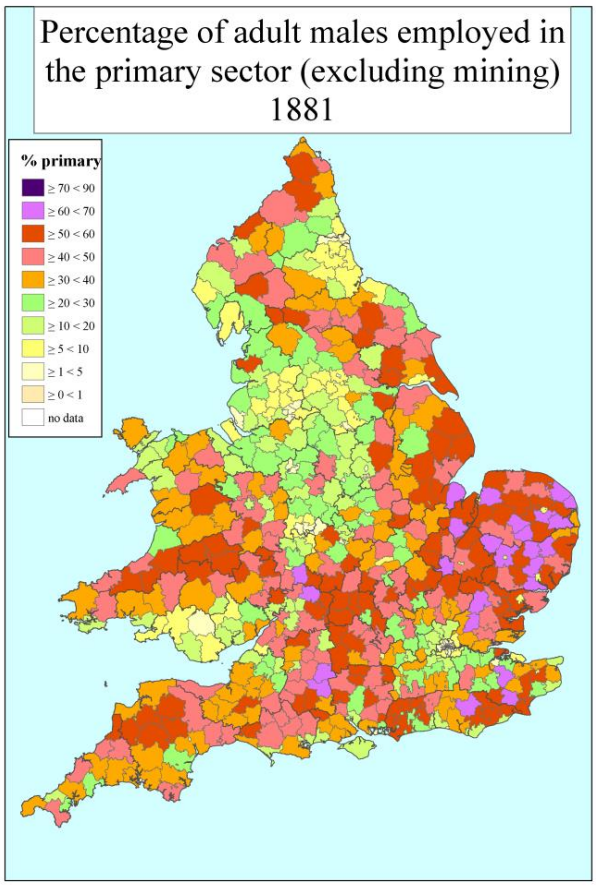
Think about the following questions:

- What should be included in the introduction?
- What should be in the conclusion? How does it relate to the introduction?

Homework – How agriculture changed in England during the nineteenth century

In this tutorial we have looked at the causes of the Agricultural Revolution and its impact on English society. However, we have not yet discussed how this impact was not the same across all different parts of the country. Below are two maps (source: https://www.campop.geog.cam.ac.uk/research/occupations/outreach/education/) that show how many people worked in the **primary sector** (this is a term that is included in the glossary) in c. 1813-20 and 1881.





For this week's homework assignment, I would like you to conduct a short analysis of how the geographical structure of employed in the primary sector (the vast majority of which was farming) changed over the course of the 19th century using these two maps. Your homework should be divided into two sections:

- Part A: Write two paragraphs commenting on and analysing two maps (below) that show the change in the number of people employed in farming, c. 1813-20 and 1881. Then answer the following questions, writing c. 100 words on each of them: 1. In which areas did agricultural employment remain the same? 2. In which areas was there a decrease?
- Part B: Based on the work done in the tutorial you should then write three bullet points of about one sentence long on how increased productivity in agriculture led to change in England during the eighteenth and nineteenth centuries.

A successful piece of homework will show you have been able to identify where there was change (and continuity), and begun to think about the occupational geography of the country.

Tutorial 3 – The Mechanisation of Manufacturing

What is the Purpose of Tutorial 3?

- Examine the role that iron and coal played in the Industrial Revolution
- Look at steam power and how industry was mechanised (with a focus on textiles)
- Introduction to how to research a university-style essay

Key Learning Outcomes

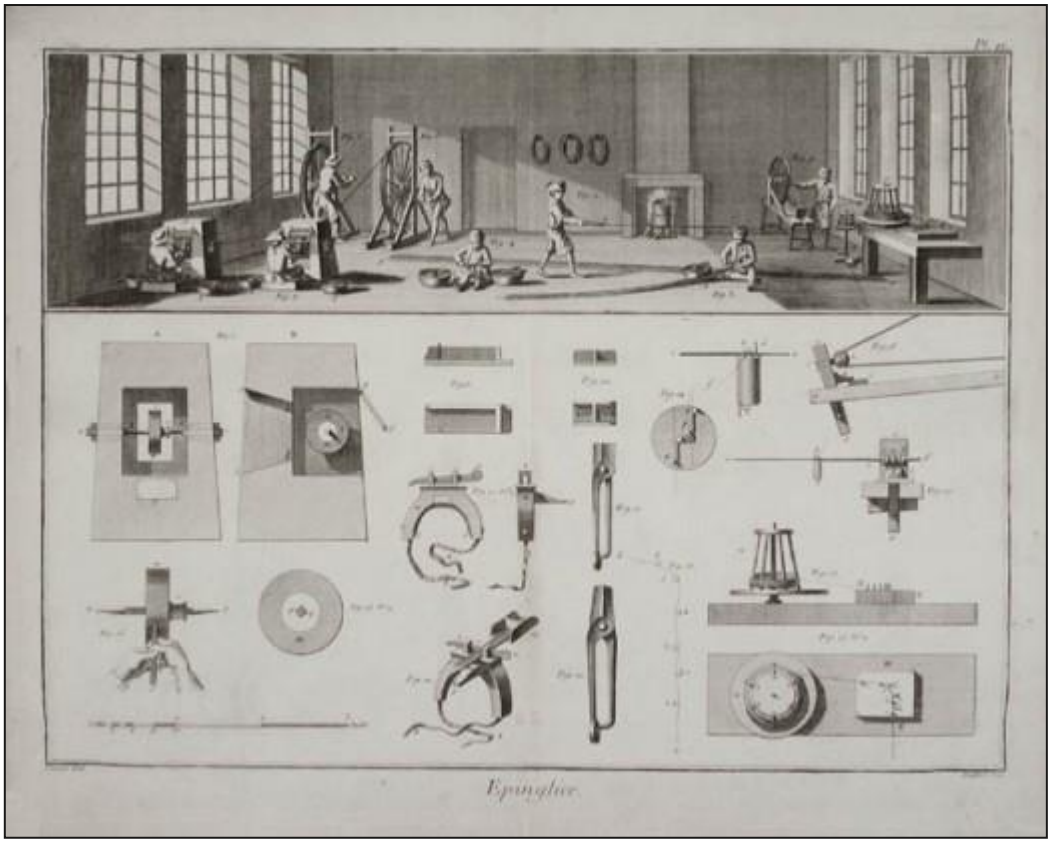
By the end of this tutorial I will be able to...

- Explain how natural resources such as iron and coal played an important role in the Industrial Revolution
- Understand how industries such as textiles were mechanised, and why this was important
- Begin to understand what goes into researching a university-style essay, and where you can locate suitable sources

Activity 1: Division of Labour

We will now discuss one of the most important concepts in economics, which was central to the Industrial Revolution: the division of labour.

By yourselves, write on the top of a post-it note an item of your school uniform. Then, underneath it, write down as many of the processes/steps you can think of that went into making it (for example, sewing on buttons, measuring, etc.). We will then discuss as a group how this relates to the concept of the division of labour.



The benefits of efficient division of labour were well-known to people in the eighteenth century and earlier. Most famously, the Scottish economist **Adam Smith (1723-90)** used the example of a pin-making workshop (pictured above) to discuss how division of labour could increase output. In this famous work *The Wealth of Nations* (1776), he wrote about this issue.

If we have time in the tutorial, I will ask you to, by yourselves, read through the extract of Smith and think about the following questions:

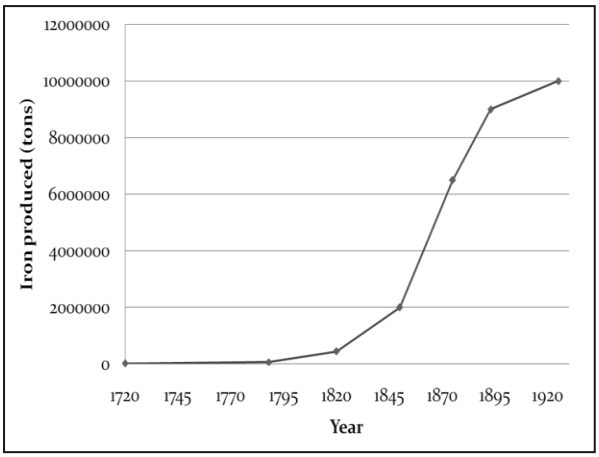
- Why does Smith argue that division of labour is important?
- How relevant do you think what Smith is writing about to the economy of Britain in the 21st century?
- Are his arguments still valid?

Reading 3: Extract from *Wealth of Nations*

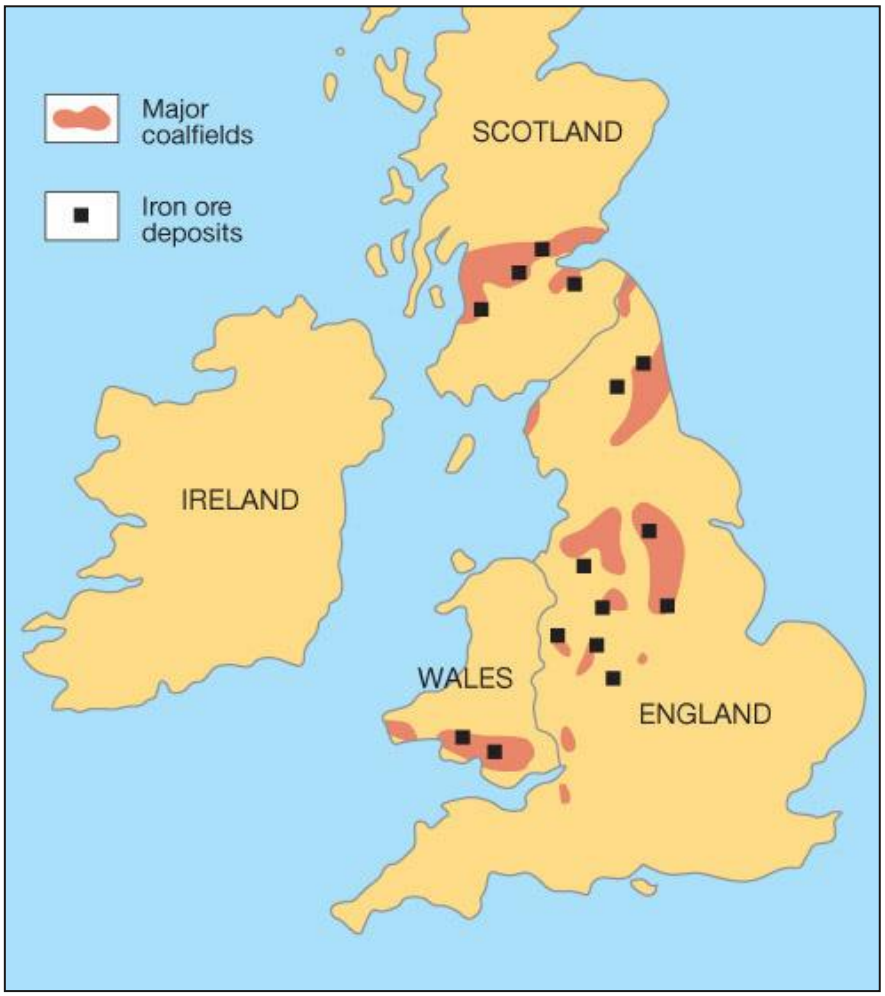
> 'The greatest improvement in the productive powers of labour, and the greater part of the skill, dexterity, and judgement with which it is any where directed, or applied, seem to have been the effects of the division of labour.
>
> [...]
>
> The division of labour, however, so far as it can be introduced, occasions, in every art, a proportionable increase of the productive powers of labour. The separation of different trades and employments from one another, seems to have taken place, in consequence of this advantage. This separation too is generally carried furthest in those countries which enjoy the highest degree of industry and improvement; what is the work of one man in a rude state of society, being generally that of several in an improved one. In every improved society, the famer is generally nothing but a farmer; the manufacturer, nothing but a manufacturer. The labour too which is necessary to produce any one complete manufacture, is almost always divided among a great number of hands.'

Activity 2: Natural Deposits

Mining has taken place in Britain since the Bronze Age. It started off with **copper** (the main deposits were in North-West England, North Wales, and South-West Scotland) and **tin** (the main deposits were in South-West England). In addition, under Roman rule Britain was the largest **lead** producer in the Empire. However, it would be **coal** and **iron ore** that were the most important natural ingredients in the Industrial Revolution, as these two graphs below show.



The map below shows where the main British coal and iron deposits were located during the nineteenth century.



In pairs, spend five minutes and write down three potential uses of coal and three uses of iron. Think about what they would be suited for, and why they still continue to be important materials to this day. Be prepared to discuss your answers with the group afterwards.

Activity 3: Mini-lecture on steam and mechanisation

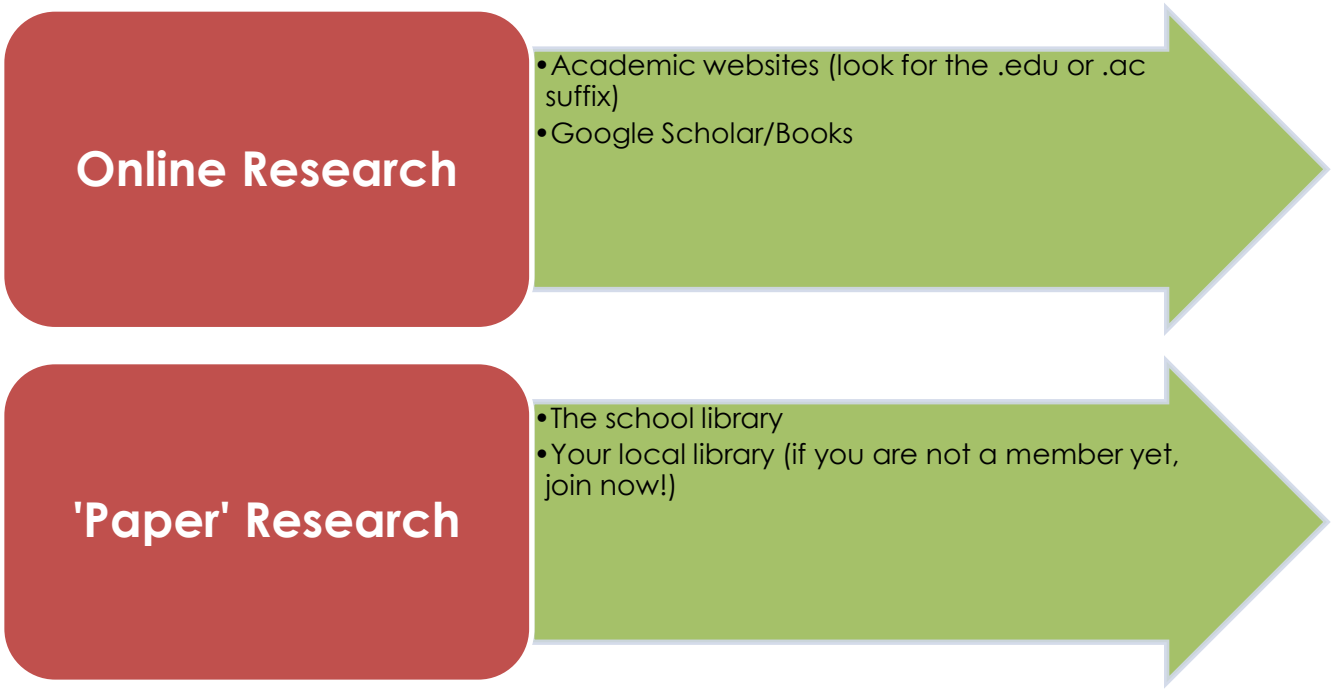
As with last week's tutorial, I will now deliver a mini-lecture – it should take about five to ten minutes. Remember to write down notes. Think about the following issues:

- What role did steam-power play?
- What inventions were most important to the mechanization of textiles?
- What were the differences between an 'organic' and 'inorganic' economy?

After today's tutorial I will email you my lecture slides.

Academic skill: Researching a university-style essay

If a good plan is the foundation of your essay, then research is the bricks that you 'build' it with! Broadly speaking, there are two main places you will find sources: online and in physical media. In both places, it is essential that you are using **reliable** sources (this means you should not be using Wikipedia). In the chart below, I have written a few suggestions. As a group, we will then have a discussion and see if we can think of any others that we can add below!



Finally, your essay should include both **primary** and **secondary** sources. Although many of you will have learned about the differences between these types of sources, but to recap: primary sources are generally first-hand accounts written or compiled at or near the time (for example, account books or diary entries), whereas secondary sources are written later, and often interpret or draw conclusions from primary sources.

Homework – Why did people mechanise manufacturing?

In this tutorial we have looked at how manufacturing began to be mechanised, but in the homework I want you to think about **why** this happened – particularly what motivated people to develop and use these new inventions. Below is an extract from an essay by the influential economic historian R.C. Allen (source: https://www.nuffield.ox.ac.uk/media/2162/allen-industrev-global.pdf) – the article includes some references to other works but for now you can just ignore them. For your homework, read through this extract and in around 300 words answer the question:

- According to Allen, what factors led to Britain experiencing an Industrial Revolution before other countries in the world?

You should structure your answer into three thematic paragraphs. Some of the themes they may wish to include are: political structure, technology, wage structure, price of energy. Alternatively, you could also structure your homework into bullet points under sub-headings. In both cases, a successful piece of homework will sure you have been able to understand Allen's key points and accurately put his arguments into your own words.

Reading 4: R.C. Allen on the Causes of the Industrial Revolution

The Industrial Revolution is one of the most celebrated watersheds in human history. It is no longer regarded as the abrupt discontinuity that its name suggests, for it was the result of an economic expansion that started in the sixteenth century. Nevertheless, the eighteenth century does represent a decisive break in the history of technology and the economy. The famous inventions–the spinning jenny, the steam engine, coke smelting, and so forth–deserve their renown for they mark the start of a process that has carried the West, at least, to the mass prosperity of the twenty-first century. The purpose of this essay is to explain why they occurred in the eighteenth century, in Britain, and how the process of their invention has transformed the world.

The last sentence introduces an important theme of this essay, which is the Britishness of the industrial revolution. Until recent decades, this was axiomatic: The industrial revolution started in Britain with the inventions that created factory textile production, the shift to coal and coke in the iron industry, and the perfection of the steam engine. Economic growth on the continent occurred when these innovations were adopted there. This schema was first called into question by national income studies which indicated that the pace of economic growth in France was not very different from that in England despite the differences in economic structure–hence, the thesis of O'Brien and Keyder (1978) that there were "two paths to the twentieth century." This critique has gathered force with the recent emphasis on the Scientific Revolution, a pan European phenomenon, as the cause of the Industrial. While these contributions broaden our understanding of the industrial revolution, it is our contention that it really was fundamentally British. Explaining the industrial revolution is a long standing problem in social science, and all manner of prior events have been adduced as causes (Hartwell 1967, Mokyr 1999). The role of political structure–parliamentary checks on the executive, the security of property rights, the flexibility of the legal system–is at the centre of much current discussion. According to this view, the dramatic changes of the late eighteenth century can be traced back to the Glorious Revolution of 1688 that consolidated parliamentary ascendancy, minimal government, and secure property rights. Supposedly, these legal changes created a favourable climate for investment that made the industrial revolution possible (North and Weingast 1989, De Long and Schleifer 1993, LaPorta, Lopez-de-Silanes, Schleifer, Vishny 1998, Acemoglu, Johnson, and Robinson 2005). This interpretation, however, has some weaknesses: Studies of banking and interest rates fail to detect any structural break after 1688, so the improved investment climate is not manifest in anything financial (Clark 1996, Epstein 2000, Quinn 2001). Property rights were at least as secure in France–possibly, in China for that matter–as in England (Hoffman, Postel-Vinay, Rosenthal 2000, Pomeranz 2000). Indeed, one could argue that France suffered because property was too secure: Profitable irrigation projects were not undertaken in Provence because France had no counterpart to the private acts of the British parliament that overrode property owners opposed to the enclosure of their land or the construction of canals or turnpikes across it (Rosenthal 1990, Innes 1992, 1998, Hoppit, Innes, Styles 1994). The Glorious Revolution meant that "despotic power was only available intermittently before 1688, but was always available thereafter" (Hoppit 1996, p. 126). Finally, taxes were higher in Britain than across the Channel (Mathias and O'Brien 1976, 1978, Hoffman and Norberg 1994, Bonney 1999). In any event, it was a long stretch from the excise tax on beer or the cost of foreclosing on a defaulting mortgagor (not actually a cheap process in eighteenth century England) to Watt's invention of the separate condenser. An explanation of the technological

breakthroughs has to be more focussed on technology than is usual in constitutional discussions.

The industrial revolution was fundamentally a technological revolution, and progress in understanding it can be made by focussing on the sources of invention. This subject has been opened up for economists by the researches of Joel Mokyr (1990, 2002) , and I will examine his views on macroinventions, the scientific revolution, and the industrial enlightenment. While Mokyr takes us forward by emphasizing the social context in which invention occurred and the importance of information flows, we can sharpen our understanding by concentrating on the incentives faced by inventors and the context in which they worked. This approach indicates that the reason the industrial revolution happened in Britain, in the eighteenth and nineteenth centuries, was not because of luck (Crafts 1977) or British genius or culture or the rise of science. Rather it was Britain's success in the international economy that set in train economic developments that presented Britain's inventors with unique and highly remunerative possibilities. The industrial revolution was a response to the opportunity.

What commercial success did for Britain was to create a structure of wages and prices that differentiated Britain from the continent and, indeed, Asia: In Britain, wages were remarkably high and energy cheap. This wage and price history was a fundamental reason for the technological breakthroughs of the eighteenth century whose object was to substitute capital and energy for labour. Scientific discoveries and scientific culture do not explain why Britain differed from the rest of Europe. They may have been necessary conditions for the industrial revolution, but they were not sufficient: Without Britain's distinctive wage and price environment, Newton would have produced as little economic progress in England as Galileo produced in Italy.

There were, however, important features of British popular culture that distinguished the country from much of the continent, and those features–greater literacy and numeracy–underpinned the technological achievements of the eighteenth century. They were not autonomous movers, however, but were themselves consequences of the economic development that preceded the industrial revolution and that produced the high wage, cheap energy economy. Underlying the technological breakthroughs of the industrial revolution was Britain's commercial and imperial expansion of the seventeenth and eighteenth centuries, which was the cause of the peculiar wage and price pattern. The state policies that mattered most were Mercantilism and Imperialism.

The working assumption of this paper is that technology was invented by people in order to make money. This idea has important implications. First, inventions were investments where future profits had to offset current costs. The technical discoveries were either new products or reductions in the cost of making existing products. In either case, the profitability calculation governing invention depended on the prices of the products and the prices of the various inputs. As we will see, labour was particularly expensive and energy particularly cheap in Britain, so inventors in Britain were led to invent machines that substituted energy and capital for labour. Second, the balance between the profits and the costs of an invention depended on the size of its market. The scale of the mining industry in eighteenth century Britain was much greater than anywhere else, so the return to inventing improved drainage machinery (a.k.a. the steam engine) was greater in Britain than in France or China. Third, patents that allow the inventor to capture all of the gains created by his invention raise the rate of return and encourage invention. Indeed, North and Thomas (1973) have argued that it was better property rights for knowledge that explain the inventions of the industrial revolution. However, the English patent law was enacted in 1624 and attracted little interest for much of the seventeenth century, so the explanation of the inventions of the eighteenth turns on the greater incentive to invent rather than on a change in law that met an existing, latent demand for patenting. Fourth, in the absence of patents, the incentive to invent was limited to the gains the inventor could realize in his own firm, and these were likely to have been small. Firms could increase the return to inventing by learning from each other. In that case, they divided the costs and pooled the gains. Indeed, collective invention was

important before private invention took off in the eighteenth century and has remained a complement to the present day (Allen 1983, Epstein 1998, 2004, Nuvolari 2004a, 2004b).

Britain–a high wage, cheap energy economy

Since invention was an economic activity, its pace and character depended on factors that affected business profits including, in particular, input prices. Why the industrial revolution happened in eighteenth century Britain is easier to understand if we compare wage rates and energy prices in the leading economies of the day. In these comparisons, Britain stands out as a high wage, cheap energy economy.'

Tutorial 4 – Institutions and the Financial Revolution

What is the Purpose of Tutorial 4?

- Define what 'institutions' are, which ones were important during the eighteenth and nineteenth centuries in England, and examine the role they played then
- Learn about the main features of the Financial Revolution
- Introduce academic referencing and footnoting (this is a skill you *might* need for A-Levels but you will **definitely** use it at university!)

Key Learning Outcomes

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

- Know how and why institutions, particularly the state, can be important to economic growth
- Identify the main features of the Financial Revolution
- Begin to know what foot-noting us, how to do it, and why it is important

Activity 1: The State and Importance of Institutions

Institutions are the structures we impose on the world to produce our desired outcomes. The complicated our world becomes, the more institutions matter. There are formal institutions (for example, banks or governments) and informal ones (for example, modes of behaviour).

In 1970 Douglass North and R.P. Thomas published a very influential article called 'An economic theory of the growth of the western world' in the *Economic History Review*. They argued:

> *'The cause of the rise of the Western world was the redirection of incentives as a consequence of institutions which made it more profitable to attempt to increase*

productivity within any economic activity. Such institutional innovations, as we have pointed out, are in direct contrast to those that throughout most of the history of mankind have served mainly to redistribute income.'

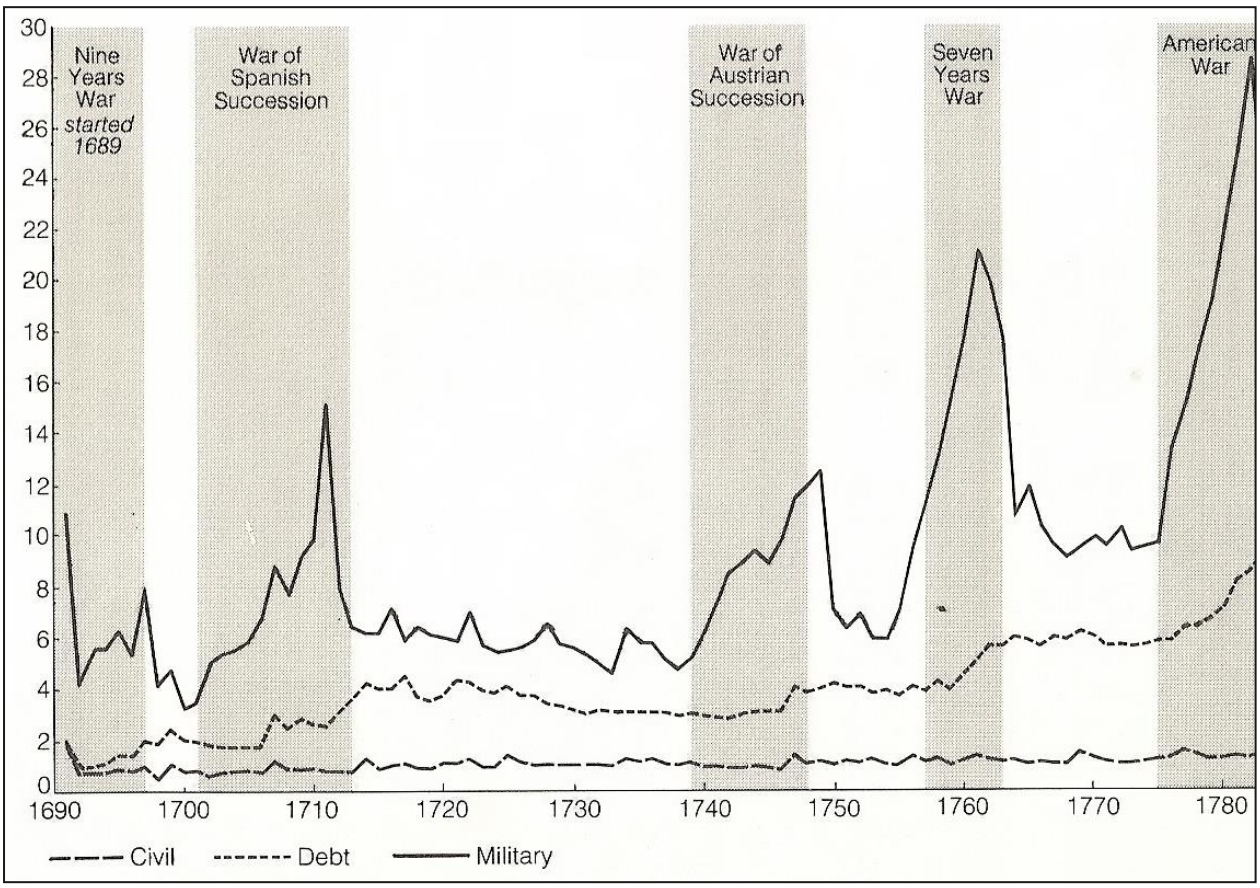
They have a very broad definition of 'institutions' to describe things like political systems, bodies of law, guilds, banks, companies, etc. North and Thomas placed a very strong emphasis on property rights. By the eighteenth and nineteenth century Britain developed institutions that were friendlier to economic growth than other countries, and became more politically stable. Many economists and economic historians argue that countries will get richer if governments just let them 'grow naturally' and do very little. I tend to disagree! I would argue that the English Industrial Revolution would have been impossible without the state. However, during the eighteenth and nineteenth centuries the British government did do very little by modern standards.

As a group activity, in the table below I would like you each to spend five minutes writing down at around five different tasks that the government does **TODAY** (particularly with reference to the economy). If you finish early, then ask me for a post-it note and see if you can write down some tasks the government did in the eighteenth and nineteenth century.

Modern Government Task	Done in 18th / 19th century? (Yes/No)

We will then compare the modern government's role to its role in the eighteenth and nineteenth centuries. We will think about what the government did to help encourage the Industrial Revolution.

Activity 2: The State and Importance of Institutions



This graph shows what the British government spent money on from 1690 to 1780 in millions of pounds. Take a look at the graph, and then we will discuss the following questions:

- What does this graph tell us about the priorities of government spending during the 18th century?
- How similar do you think this was to spending patterns of the government today?

Activity 3: Mini-lecture on the Financial Revolution

I am going to give a mini-lecture (it will take around five to ten minutes) about some aspects of the Financial Revolution. Please remember to take notes, and let me know if you have any questions. Your notes should be divided into the following headings:

- Joint-stock companies
- The Bank of England and National Debt
- The Development of Insurance

I will email you my lecture slides to the VLE after today's tutorial.

Academic skill: University-style essay referencing

References show the sources that you have used for quotations, statistics, important points/arguments made by historians, closely paraphrased materials, or arguments not your own. To get you prepared for university, where referencing is essential, your essay for this course must include references to the sources you have used.

Your references will be in the form of footnotes, which will be numbered consecutively throughout the assignment in superscript numerals.

When you are researching keep an accurate record of the page number or website of where your information comes from, so you can reference it accurately.

When it doubt, REFERENCE! This will protect you against any suspicions of **plagiarism**.

References to books should be in the following format – note that it includes the page number. For example:

> Emma Griffin, *Liberty's Dawn: A People's History of the Industrial Revolution* (New Haven: Yale University Press, 2013), p. 25.

Articles from journals should be in the following format:

> Jane Humphries, 'Child Labour and the British Industrial Revolution', *Economic History Review*, 66 (2013), 400.

Online sources should be in the following format (remember to include the URL and date accessed):

> Xuesheng You, 'The Missing Half: Female Employment in Victorian England and Wales', 2017, https://www.campop.geog.cam.ac.uk/research/occupations/outputs/onlineatlas/femaleemployment.pdf [10 February 2019], 15.

If you have any questions about referencing, please ask me in tutorials.

If there is time in the tutorial I will bring in some academic books for you to practice writing references for. You will write down the reference on a Post-It, and then assess each other's for accuracy, and make sure you have included all of the required detail.

Homework – Why and how is the state important to the economy?

Below you will find an extract from Daron Acemoglu and James A Robinson's *Why Nations Fail: The Origins of Power, Prosperity, and Poverty* (London: Profile Books, 2012). It is taken from the opening chapter of the book, and it is the basis of your homework. For your homework, read through the extract and then write a response of around 150 words each to the two questions: 'What are the main differences between Nogales, Mexico & Nogales, USA?' AND 'Do you agree that democracy is important to prosperity?' (Alternatively, you could use bullet points.) A successful piece of homework will show you have been able to identify the differences between the two places, and have reflected on the impacts of the role the state has played.

Reading 5: Daron Acemoglu & James A. Robinson on *Why Nations Fail*

> 'The city of Nogales is cut in half by a fence. If you stand by it and look north, you'll see Nogales, Arizona, located in Santa Cruz County. The income of the average household there is about $30,000 a year. Most teenagers are in school, and the majority of the adults are high school graduates. Despite all the arguments people make about how deficient the U.S. health care system is, the population is relatively healthy, with high life expectancy by global standards. Many of the residents are above age sixty-five and have access to Medicare. It's just one of the many services the government provides that most take for granted, such as electricity, telephones, a sewage system, public health, a road network linking them to other cities in the area and to the rest of the United States, and, last but not least, law and order. The people of Nogales, Arizona, can go about their daily activities without fear for life or safety and not constantly afraid of theft, expropriation, or other things that might jeopardize their investments in their businesses and houses. Equally important, the residents of Nogales, Arizona, take it for

granted that, with all its inefficiency and occasional corruption, the government is their agent. They can vote to replace their mayor, congressmen, and senators; they vote in the presidential elections that determine who will lead their country. Democracy is second nature to them.

Life south of the fence, just a few feet away, is rather different. While the residents of Nogales, Sonora, live in a relatively prosperous part of Mexico, the income of the average household there is about one-third that in Nogales, Arizona. Most adults in Nogales, Sonora, do not have a high school degree, and many teenagers are not in school. Mothers have to worry about high rates of infant mortality. Poor public health conditions mean it's no surprise that the residents of Nogales, Sonora, do not live as long as their northern neighbours. They also don't have access to many public amenities. Roads are in bad condition south of the fence. Law and order is in worse condition. Crime is high, and opening a business is a risky activity. Not only do you risk robbery, but getting all the permissions and greasing all the palms just to open is no easy endeavour. Residents of Nogales, Sonora, live with politicians' corruption and ineptitude every day.

[...]

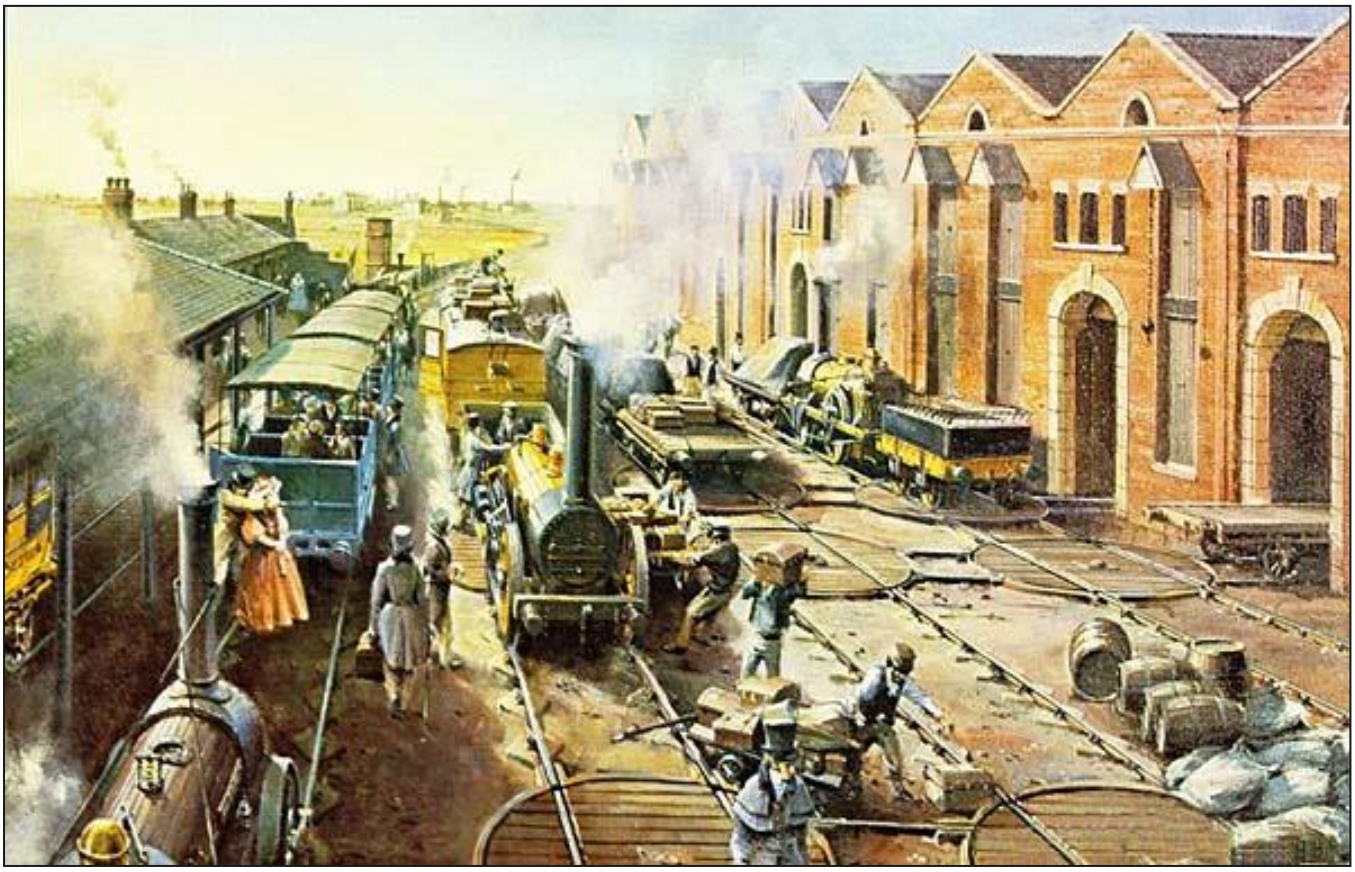
How could the two halves of what is essentially the same city be so different? There is no difference in geography, climate, or the types of diseases prevalent in the area, since germs do not face any restrictions crossing back and forth between the United States and Mexico. Of course, health conditions are very different, but this has nothing to do with the disease environment; it is because the people south of the border live with inferior sanitary conditions and lack decent health care.

But perhaps the residents are very different. Could it be that the residents of Nogales, Arizona, are grandchildren of migrants from Europe, while those in the south are descendants of Aztecs? Not so. The backgrounds of people on both sides of the border are quite similar. After Mexico became independent from Spain in 1821, the area around "Los dos Nogales" was part of the Mexican state of Vieja California and remained so even after the Mexican- American War of 1846–1848. Indeed, it was only after the Gadsden Purchase of 1853 that the U.S. border was extended into this area. It was Lieutenant N. Michler who, while surveying the border, noted the presence of the "pretty little valley of Los Nogales." Here, on either side of the border, the two cities rose up. The inhabitants of Nogales, Arizona, and Nogales, Sonora, share ancestors, enjoy the same food and the same music, and, we would hazard to say, have the same "culture."

Of course, there is a very simple and obvious explanation for the differences between the two halves of Nogales that you've probably long since guessed: the very border that defines the two halves. Nogales, Arizona, is in the United States. Its inhabitants have access to the economic institutions of the United States, which enable them to choose their occupations freely, acquire schooling and skills, and encourage their employers to invest in the best technology, which leads to higher wages for them. They also have access to political institutions that allow them to take part in the democratic process, to elect their representatives, and replace them if they misbehave. In consequence, politicians provide the basic services (ranging from public health to roads to law and order) that the citizens demand. Those of Nogales, Sonora, are not so lucky. They live in a different world shaped by different institutions. These different institutions create very disparate incentives for the inhabitants of the two Nogaleses and for the entrepreneurs and businesses willing to invest there. These incentives created by the different institutions of the Nogaleses and the countries in which they are situated are the main reason for the differences in economic prosperity on the two sides of the border.

Why are the institutions of the United States so much more conducive to economic success than those of Mexico or, for that matter, the rest of Latin America? The answer to this question lies in the way the different societies formed during the early colonial period. An institutional divergence took place then, with implications lasting into the present day.'

Tutorial 5 – The Transport Revolution



What is the Purpose of Tutorial 5?

- Learn about the importance of transport networks to economic growth, and the different methods used during the Industrial Revolution
- Discuss how transport impacts economic growth today
- Introduce you to university-style bibliographies

Key Learning Outcomes

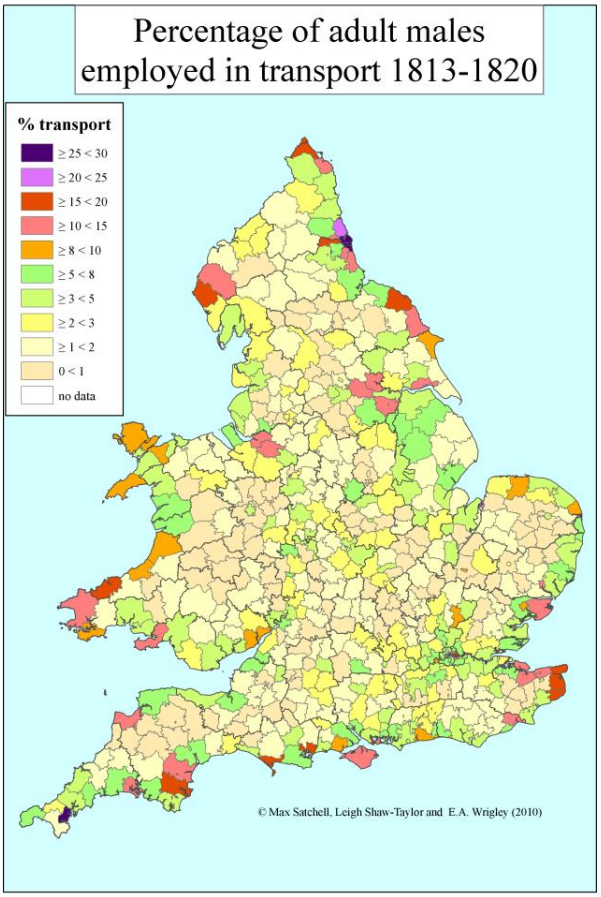
By the end of this tutorial I will be able to...

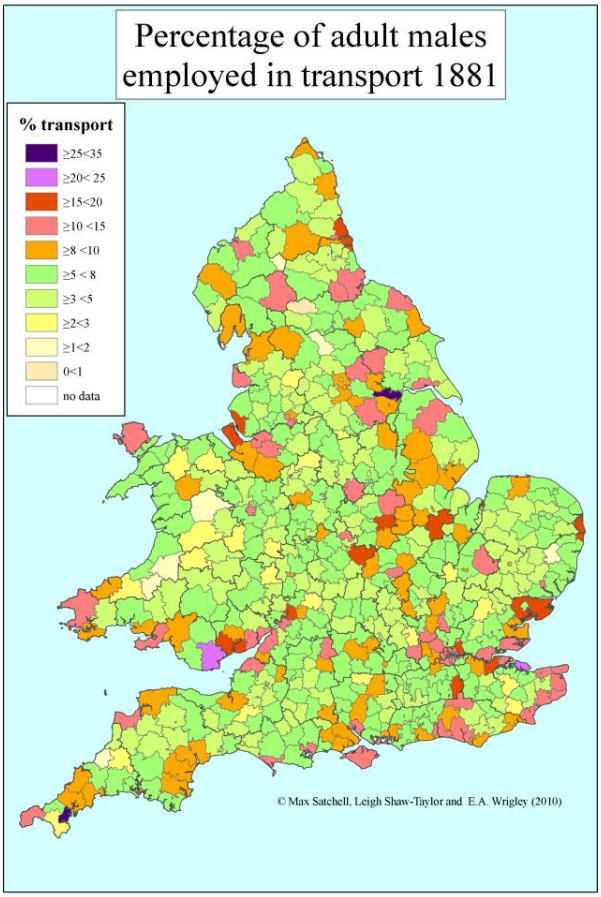
- Demonstrate knowledge of the way that people and products were transported changed as a result of the Industrial Revolution
- Explain how more efficient transport networks impacted on economic growth
- Know how to lay out and format a university-style bibliography

Activity 1: Transport and the workforce

Transportation was the fastest growing occupational group for men during the nineteenth century. These two maps show the percentage of adult males who worked in transport in c. 1813-20 and 1881 (again, women are not included – however, very, very few women worked in transport during the nineteenth century, and they are still under-represented today compared to men). In pairs, spend five minutes writing down where the main centres of transport employment were. Think about the following questions:

- How do these match up to where the biggest cities were?
- How does this interact with England's geography?
- Did things change over time?
- What kind of modes of transportation were being used then?





Activity 2: Travel Times

Next, I want you to think about how travel times decreased over the eighteenth and nineteenth centuries. To do this, we are going to use an amazing new online resource (www.travelintimes.org) developed at the University of Cambridge that can be used to plot routes at different points of time in British history. Suppose you are a business owner and you would like to transport your products to London as quickly as possible. I am going to assign each of you a town and a product. Using the website, look at the route to London from your assigned town. Then, in the table write down the travel time for 1680, 1830, 1911, and 2020. We will then compare the different places and times.

Origin	1680	1830	1911	2020
Manchester (cotton)				
Leeds (wool)				
Birmingham (metal tools)				
Northampton (shoes)				
Newcastle-upon-Tyne (coal)				
Sheffield (steel)				

Some questions we will then discuss are:

- How did transport times change over time?
- How does efficient transport impact on where businesses or factories could be located?
- What new methods of transport were being introduced?

Activity 3: Mini-lecture on the Transport Revolution

I am then going to give a mini-lecture (it will take around five to ten minutes) about three aspects of the Transport Revolution. Please remember to take notes, and let me know if you have any questions. Your notes should be divided into the following headings:

- Roads and turnpikes
- Canals
- Railways

I will then email you my lecture slides after the tutorial.

Activity 4: The foundation of the 21st-century economy

Pictured above is the standard type of container unit used for international shipping. They are known as the **twenty-foot equivalent unit (TEU)**. If you go into most high-street shops, it is highly likely that the vast majority of the things they sell arrived in this country in a TEU. They are very easy to load and unload from ships onto trucks or trains, so they can be distributed. Therefore, it is not an exaggeration to say that the world economy is based on a metal box.

This table shows the busiest ports in the world by the number of TEUs they process in a year (figures are from 2016). On the left-hand-side is the top ten, and on the right-hand-side is a selection of ports from other parts of the world. By yourselves, fill in the country/continent for each port. Think about what the location of the biggest ports has in common. How does this interact with where products are made today? We will then discuss this as a group.

Rank	Port	Country & Continent	Rank	Port	Country & Continent
1.	Shanghai		12.	Rotterdam	
2.	Singapore		18.	Los Angeles	
3.	Shenzhen		22.	New York	
4.	Ningbo-Zhoushan		33.	Mumbai	
5.	Busan		36.	Felixstowe	
6.	Hong Kong		42.	Santos, São Paulo	
7.	Guangzhou		49.	Port Said	
8.	Qingdao		63.	Durban	
9.	Dubai		70.	Sydney	
10.	Tianjin		88.	Kingston	

Academic skill: Formatting bibliographies

Soon you will be beginning to research for your essay. One of the most important things you will do for university-level assignments is to include bibliographies, which show the list of sources you have used to research your assignment.

Your essay must include a bibliography, which should include all the works that you reference (we will look at referencing next week) as well as any other source you have used in researching your essay.

Your bibliography should be divided into primary and secondary sources. It should be arranged alphabetically by the surname of the author of each work. If there is no author (for example if you are using a website as a source), it should be classified by the title of the title of the source.

During the tutorial I will bring in some books so we can practice generating bibliographical references for them. Your bibliographical reference should include the name of the author, the title of the book, the place of publication, the name of the publisher, and the year of publication. For example:

Chang, Ha-Joon, *Economics: The User's Guide* (London: Pelican Books, 2014)

If you are including academic articles in your bibliography, you need to include the name of the journal and the edition number it appears in, as well as the page number. For example:

Feldman, Naomi E., 'Skill choice and skill complementarity in eighteenth century England', *Explorations in Economic History*, 59 (2016), 94-113

Finally, if you are going to include online sources, they should include the URL of the website and the date that you accessed the website. For example:

Fiennes, Celia, *Through England on a Side Saddle in the Time of William and Mary, Being the Diary of Celia Fiennes*, 1888, https://digital.library.upenn.edu/women/fiennes/saddle/saddle.html [10 January 2018]

If you have any other questions about bibliographies and the correct formatting of them, please ask me during the tutorial.

Reading 6: Dan Bogart on the Transport Revolution

In this tutorial we have looked at how transport changed during the eighteenth and nineteenth centuries. Below is an extract from a working paper by the American economic historian Dan Bogart (source: https://www.economics.uci.edu/files/docs/workingpapers/2012-13/bogart-06.pdf) – the article includes some references to other works but for now you can just ignore them. You do not have to read this (and we won't have time to look at it during the tutorial), but if you are considering mentioning transport in your essay, then this reading will give you some useful ideas.

> The British economy c.1700 was mired in a world of high transport costs. It is true that one could travel by coach between London and important cities in the southeast already in 1700 and that coal was being shipped on coastal vessels from Tyne to London, but for much of the economy high transport costs were a major constraint on economic activity and travel. In the one hundred and seventy years that followed transport improved greatly. Road transport evolved from packhorses and small wagons to large wagons and stagecoaches running continuously between London and major cities. Eventually steam powered rail wagons and coaches would displace both horse-drawn wagons and stagecoaches resulting in a fundamental change in freight transport and travel. Similarly large barges and vessels powered by steam eventually displaced smaller vessels on rivers and in the coastal trade. Along with technological change there was tremendous investment in transport infrastructure most notably in the canal and rail network.
>
> By 1870 Britain had experienced what historians have called a transport revolution (Bagwell 1988). The most clear indicator being the dramatic increase in travel speeds and decline in freight rates. As this paper will document, railway freight charges per ton mile in 1870 expressed in real terms (i.e. adjusting for inflation) were equal to one-twentieth the freight charge per ton mile for horse-drawn wagons in 1700. Journey travel times by railway were one-tenth the travel time of coaches in 1700. Although such calculations emphasize the importance of railways, this paper will show they are not the entire story. There were significant reductions in road transport freight charges and journey times before the railways and of primary importance to industry and mining there were large reductions in transport costs associated with the shift from roads to canals. There were also major improvements in coastal travel speeds with the coming of the steamship. Long distance shipping also witnessed dramatic reductions in freight charges especially along the North Atlantic routes.
>
> [...]
>
> Market structure and institutional factors were also important in influencing transport markets. Competition was a key factor in driving down freight charges and fares for carriers and coastal shippers. At times there was also competition among infrastructure providers like turnpike roads, canals, ports, and railways and for this reason rates of return

on infrastructure investments were generally modest. Britain's transport policies were generally laissez faire: barriers to entry were modest, private ownership was common, and the property rights of infrastructure providers were generally protected. At the same time there was government intervention. Governing authorities protected the property rights of landowners creating some complications for canals and railways. Moreover Parliament set toll caps on turnpike roads and inland waterways partly with the aim of reducing monopoly profits. A general assessment of transport policies is beyond the scope of this paper, but there is a case that Britain's regulatory institutions had salutary effects up to the railway age. By 1870, however, there are signs of regulatory failure.

[...]

Aside from illuminating British history, estimates of the effects of transport improvements are useful in informing policy discussions. Investing in infrastructure and new technologies is expensive. If the developmental effects are small relative to the costs then transport funding should be reduced. More generally if transport innovations change the way we live, as in the case of suburbanization, then it is useful to know how much. The literature also speaks to the importance of transport improvements in the development of economies over the long-run. Today lower transport costs are crucially linked with trade costs and the extension of markets much as they were 200 years ago. As a final remark, transport innovations have been difficult to implement historically because they involve taxation and vexing property rights issues. There are also potential inefficiencies in transport infrastructure due to monopoly power and regulatory failures. British history tells us that attention needs to be paid to transport efficiency if the social gains from investment and innovation are to be realized.'

Homework – Draft assignment

For your homework you should begin planning and writing your essay, which is entitled, *To What Extent were Technological Developments in Manufacturing Central to the Industrial Revolution?* (it should be around 2,000 words long). Here are some tips:

- Your essay must include an introduction (of around 350 words) and conclusion (of around 300 words) - these will help frame the structure of your essay
- When planning, make sure that each of the three main paragraphs (which should be about 450 words each) of your essay has a clear theme
- Your essay should have three main themes – some of the ones you may wish to include are: technological change in manufacturing, natural resources, the Transport Revolution, the Financial Revolution, the role of the state, and the Agricultural Revolution
- When writing and planning, ask yourself – 'is this helping me answer the question?'
- Avoid long quotations of more than possible – remember you can summarize
- Avoid just describing things – your job is to analyse!
- Avoid abbreviations (e.g. UK, USA) and contractions (e.g. wasn't)
- Try to avoid informal or imprecise language
- Make sure your footnotes and bibliography are in the agreed format (these do not count towards your word count)

During the next tutorial, I will be giving you individual feedback on a draft of your essay. By then I want you to have AT LEAST:

- Written your introduction (around 350 words)
- Made an essay plan detailing the main themes of each paragraph (use the plan we looked out in tutorial 2)
- Drawn up a bibliography

You should bring this with you to the tutorial, or alternatively you can email it to me.

These are the success criteria for your final assignment:

- **Knowledge & Understanding**: include content relevant to the essay question; show an understanding of the Industrial Revolution and socio-economic change in England from 1700 to 1900.
- **Research & Evidence**: Include findings from sources in the tutorial handbook, as well as those you have located yourself (either online or as a book); Find at least TWO different primary sources to include; Integrate these effectively into your argument to back up your points.
- **Developing An Argument**: Your argument should refer clearly to the question at hand, with each paragraph addressing a different theme (You might find the PEEL structure helpful – POINT [make the evidence clear]; EVIDENCE [explain the evidence for the point]; EXPLANATION [explain why your point is relevant and important]; LINK [link to the overall argument and the next section]); The main points of your argument should be clear to the reader!
- **Critical Evaluation**: Evaluate the content in reference to your argument – make sure you do not just describe events, ANAYLSE them!; Use both primary and secondary sources to back up your points.
- **Structure & Presentation**: Your essay should include both an introduction and conclusion; Your essay should include at least THREE clearly-themed paragraphs; Your essay should include at least FIVE footnote references; Your essay should include a bibliography with at least FIVE items (including the tutorial handbook).
- **Language & Style**: Make sure spelling, grammar and punctuation are accurate; Pay close attention to correct capitalisation; Use formal style of writing with no contractions; Avoid excessive use of the first person.

Reading 7: David S. Landes on the Industrial Revolution

Before you begin planning your essay, I would recommend you read this extract from the American economic historian David S. Landes' *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present* (Cambridge: Cambridge University Press, 1969). Although this book was first published fifty years ago, it still remains influential. This extract is taken from the introduction. When you are reading it, think about what Landes is saying about the Industrial Revolution, and the importance of technological change? Bearing in mind what we have talked about during these tutorials, do you agree with him?

> 'When dealing with ambiguous terms, the first duty of a writer is definition. The words 'industrial revolution' -in small letters-usually refer to that complex of technological innovations which, by substituting machines for human skill and inanimate power for human and animal force, brings about a shift from handicraft to manufacture and, so doing, gives birth to a modern economy. In this sense, the industrial revolution has already transformed a number of countries, though in unequal degree; other societies are in the throes of change; the turn of still others is yet to come.
>
> The words sometimes have another meaning. They are used to denote any rapid significant technological change, and historians have spoken of an 'industrial revolution of the thirteenth century~, an 'early industrial revolution', the 'second industrial revolution', an 'industrial revolution in the cotton south'. In this sense, we shall eventually have as many 'revolutions' as there are historically demarcated sequences of industrial innovation, plus all such sequences as will occur in the future; there are those who say, for example, that we are already in the midst of the third industrial revolution, that of automation, air transport, and atomic power.
>
> Finally, the words, when capitalized, have still another meaning. They denote the first historical instance of the breakthrough from an agrarian, handicraft economy to one dominated by industry and machine manufacture. The Industrial Revolution began in England in the eighteenth century, spread therefrom in unequal fashion to the countries of Continental Europe and a few areas overseas, and transformed in the span of scarce two lifetimes the life of Western man, the nature of his society, and his relationship to the

other peoples of the world. The Industrial Revolution, as it took place in western Europe, is the subject of this book.

The heart of the Industrial Revolution was an interrelated succession of technological changes. The material advances took place in three areas: (I) there was a substitution of mechanical devices for human skills; (2) inanimate power-in particular, steam-took the place of human and animal strength; (3) there was a marked improvement in the getting and working of raw materials, especially in what are now known as the metallurgical and chemical industries.

[...]

From the start, the specialization of productive functions was pushed farther in the factory than it had been in shops and cottages; at the same time, the difficulties of manipulating men and materials within a limited area gave rise to improvements in layout and organization. There is a direct chain of innovation from the efforts to arrange the manufacturing process so that the raw material would move downwards in the plant as it was treated, to the assembly line and transmission belts of today.

In all of this diversity of technological improvement, the unity of the movement is apparent: change begat change. For one thing, many technical improvements were feasible only after advances in associated fields. The steam engine is a classic example of this technological interrelatedness: it was impossible to produce an effective condensing engine until better methods of metal working could turn out accurate cylinders. For another, the gains in productivity and output of a given innovation inevitably exerted pressure on related industrial operations. The demand for coal pushed mines deeper until water seepage became a serious hazard; the answer was the creation of a more efficient pump, the atmospheric steam engine. A cheap supply of coal proved a godsend to the iron industry, which was stifling for lack of fuel. In the meantime, the invention and diffusion of machinery in the textile manufacture and other industries created a new demand for energy, hence for coal and steam engines; and these engines, and the machines themselves, had a voracious appetite for iron, which called for further coal and power. Steam also made possible the factory city, which used unheard-of quantities of iron (hence coal) in its many-storied mills and its water and sewage systems. At the same time, the processing of the flow of manufactured commodities required great amounts of chemical substances: alkalis, acids, and dyes, many of them consuming mountains of fuel in the making. And all of these products-iron, textiles, chemicals-depended on large-scale movements of goods on land and on sea, from the sources of the raw materials into the factories and out again to near and distant markets. The opportunity thus created and the possibilities of the new technology combined to produce the railroad and steamship, which of course added to the demand for iron and fuel while expanding the market for factory products. And so on, in ever-widening circles.

In this sense, the Industrial Revolution marked a major turning point in man's history. To that point, the advances of commerce and industry, however gratifying and impressive, had been essentially superficial: more wealth, more goods, prosperous cities, merchant nabobs. The world had seen other periods of industrial prosperity-in medieval Italy and Flanders, for example-and had seen the line of economic advance recede in each case; in the absence of qualitative changes, of improvements in productivity, there could be no guarantee that mere quantitative gains would be consolidated. It was the Industrial Revolution that initiated a cumulative, self-sustaining advance in technology whose repercussions would be felt in all aspects of economic life.'

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:	5 March 2020

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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