Reading Passage 1

A Brief History of London Underground

It is a staple of not just the capital of the UK, but of British culture in general. It is used by more than 1.3 billion people per year, and it is more than 400 kilometres long. It has survived fires, floods, terrorist attacks and two world wars, and it has been described as a "form of mild torture", a "twopenny tube" and a system of "padded cells". It is London Underground, and it has been around for more than 150 years. But how did it all start?

The idea of an intricate train network running underneath a vibrant and heavily populated city like London might not be such a novelty in contemporary society, but it certainly was one back in the early 19th century when it was first conceived. In fact, the only reason such a notion - at the time described by The Times as an "insult to common sense" - was even entertained in the first place was pure desperation: during the Victorian era, London roads were insufferably overcrowded, and a Royal Commission of 1846 meant that central London was out of bounds for railway companies, whose mainline railways all had to stop just outside the City and West End. A way to connect Paddington, Euston and King's Cross was therefore a necessity to relieve the congested streets, and Charles Pearson, the man who originally envisioned a Fleet Valley rail tunnel just fifteen years after the first steam passenger service was opened in 1830, couldn't have come up with his plan for what was to become London Underground at a better time.

And so the story begins, in 1863, with the opening of the Metropolitan Railway, which ran between Paddington (called Bishop's Road at the time) and Farringdon, serving a total of eight stations. Five years later, in 1868, the first section of the Metropolitan District Railway (now incorporated into the District and Circle lines) followed, running from South Kensington to Westminster. Within the first fifty years, much of what is known as Zone 1 of the London Underground system today would be built, all funded by private developers. (Unfortunately for them, none would get the financial returns they had been promised.)

People nowadays might complain about the atmosphere in London Underground, particularly in the summer, but it is nothing compared to the conditions the Metropolitan Railway's passengers had to weather during the first years of its operation. So foul was the smell in the tunnels that spread under the city that drivers were allowed to grow beards, in hopes that this would protect them from inhaling the billowing smokes. (According to the account of a civil servant from that time, the stink in the underground was comparable to that of a 'crocodile's breath'.) Nevertheless, the line was a smashing success from the very beginning, with more than 11 million passengers in just the first year.

The second spate of construction works arrived with the development of electric traction at the end of the 19th century, which meant that trains no longer had to run through shallow tunnels to allow room for the steam produced by the engines to escape. Instead, new tunnels could now be dug, cutting deeper into the belly of the city. The first deep-level electric railway was opened in December 1890 by the City and South London Railway, connecting King William Street to Stockwell. In the following fifty years, the existing tube lines would systematically be extended, branching into London's various suburbs. Surprisingly, it would take until 1968 for an entirely new line to open again: the Victoria Line (provisionally named the Viking Line), which was followed by the Jubilee Line eleven years later.

As I mentioned above, London Underground's first lines were built by private developers, meaning that each line was owned by different companies. This changed in 1933, when all of those companies were nationalised and

merged to form the London Passenger Transport Board, which controlled London's railway, tram, trolleybus, bus and coach services. (Coincidentally, 1933 was also the year the first diagram of the iconic Underground map was first presented by Harry Beck.) The London Passenger Transport Board itself was nationalised in 1948.

The next wave of changes came at the turn of the 21st century, and has continued to unfold well into its second decade: in 2003, the famous Oyster card was introduced - a wireless travel card that can be charged up with money to be used for single fares or weekly, monthly, and yearly travel tickets. Busking was also legalised the same year. In 2007, London Underground achieved its next important milestone, reaching 1 billion passengers per year, and in 2009 it was named the best Metro system in Europe. In early 2016, a new Crossrail line named after Queen Elizabeth II was announced, which is due to open in late 2018. This will be the first new line in nearly forty years. And the story goes on.

So, there you have it. The underground system that every Londoner loves to hate, but without which London never would have become the sort of financial hub and melting pot it is today. A history spanning across three centuries, all of which contributed to the creation of not just a transport system, but a unique, daring brand, and a cultural phenomenon the likes of which the world had never seen before. Perhaps it is, as its critics contend, too busy, too hot, too pricey and too grimy. But it is also a remarkable achievement, for Londoners and non-Londoners alike, and it should be treasured regardless of its shortcomings.

Questions 1-6

Do the following statements agree with the information given in Reading Passage 1?WriteTRUEif the statement is true according to the passageFALSEif the statement is false according to the passageNOT GIVENif the information is not given in the passage

1 More than a billion commuters use London Underground every day.

2 London Underground would not be considered a unique concept were it to be build today.

3 In the 19th century, railway companies were not allowed to build stations within central London.

4 Charles Pearson's London Underground plan was a precursor of his Fleet Valley rail tunnel idea.

5 The first section of the Metropolitan District Railway, opened in 1868, took five years to complete.

6 The British government promised great financial returns to private investors to convince them to fund London Underground.

Questions 7-10

Choose the correct letter, A, B, C or D.

7 During the first year of its operation, the Metropolitan Railway

A encouraged passengers to grow beards to block the smell.

B was not particularly successful.

C had more than 11 million passengers.

D was as bad as it is nowadays during the summer months.

8 At the end of the 19th century,
A London Underground stopped using shallow tunnels.
B a new London Underground line was completed.
C a new method of moving trains with electricity was invented.
D the City and South London railway was established.
9 The Victoria Line

A was originally named the Viking Line. B was the first London Underground line to use electric traction. C was the fourth London Underground line to be built. D was built more than 70 years after its successor.

10 The London Passenger Transport BoardA replaced the private companies that previously owned London Underground.B released the first diagram of the Underground map in 1933.C was established by private developers.D controlled all of London's transport services.

Questions 11-13 Complete the sentences below. Choose NO MORE THAN TWO WORDS from Reading Passage 2 for each answer.

11 Since 2003, London commuters have been able to listen to ______ in and outside London Underground stations.
12 London Underground not only attracted a lot of business to London, but also helped it to become a ______.
13 London Underground does have its ______ but it's still a unique and important cultural phenomenon.

Section 2

The Pioneer Anomaly

A It's been more than four decades of incessant theorising and perplexed head-scratching for scientists, engineers and astronomy fans across the globe, but thanks to a recent study published in the journal Physical Review Letters, we finally have some answers to what has been causing the deceleration of NASA's Pioneer 10 and 11 spacecraft - otherwise known as the "Pioneer Anomaly".

B Pioneer 10 and 11 were launched in 1972 and 1973 respectively, and were the first spacecraft to travel beyond the solar system's main asteroid belt. Their claim to fame, however, changed the moment they skirted past Jupiter and began their journey towards Saturn, as it was at that point - by then already the early 1980s that scientists and navigators discovered something had gone terribly awry: the two spacecraft seemed to be slowing down.

C As Bruce Betts of The Planetary Society explains, the scientists involved in the project had anticipated most of the slowing down due to "the gravitational pull of the Sun and other massive objects in the solar system". In fact, when the deceleration was first observed, it was so small that it was dismissed as an insignificant, temporary phenomenon, and attributed to the effect of dribbles of leftover propellant still in the fuel lines after controllers had cut off the propellant. It would take until 1998 for a group of scientists led by John Anderson of Jet Propulsion Laboratory (JPL) to confirm that, even at 13 kilometres from the sun, the two Pioneer spacecraft were still losing

speed at a rate of approximately 300 inches per day squared (0.9 nanometres per second squared). The first theories of what might be the cause followed soon thereafter.

D The late 1990s were an important time for the field of astrophysics, with the Hubble Space Telescope observations of distant supernovae having only in 1998 confirmed that the universe is expanding at an accelerating rate. Anderson et al's confirmation of the Pioneer Anomaly the same year seemed to offer a demonstration of the very same phenomenon of expansion within our own solar system - a theory that plenty of scientists quickly embraced. Others yet ascribed the deceleration to dark matter, while some suggested the spacecraft, as Toth and Turyshev put it, might've "unearthed the first evidence of extra dimensions". The possibility that a new law of physics directly contradicting Einstein's general theory of relativity might be to blame was also considered.

E In 2004, Turyshev decided to get to the bottom of the Pioneer anomaly. Since the two spacecraft had stopped communicating with earth (Pioneer 11 first in 1995, and Pioneer 10 less than a decade later in 2003), all he could depend on were old communications and data; so, with the monetary aid of the Planetary Society and its eager, dedicated members, he began to gather the data from a number of different sources. There were two types of data that he needed to procure for his research: the "housekeeping data" engineers had used in order to monitor spacecraft operation, and Doppler data.

F The data came in all sorts of forms: some were in digitised files offered by JPL navigators (a lucky find, as punch cards were still the preferred method of data storage back in the 1970s), while others were in magnetic tapes accidentally discovered under a staircase in JPL. All in all, there were more than 43 gigabytes of data - an admirable result, considering that at the time the two Pioneer spacecraft were launched there had been no formal requirement that NASA archive any of the records collected, and it had only been due to sheer luck and a former Pioneer team member's diligence that any telemetry data had been saved at all.

G Once all the data had been collected, the formidable task of going through the volumes of information began. It was neither quick nor easy, and it required the assistance of a variety of people, including JPL engineers and retired TRW engineers who had worked on the Pioneer project, who had to consult with each other in order to interpret old blueprints and reconstruct the probes' 3D structure. In the end, however, the team's perseverance paid off, and Turyshev's suspicions which had initiated the study - were confirmed: it was the electrical subsystems and the decay of plutonium in the Pioneer power sources that were to blame for the spacecraft's bizarre trajectory - more specifically the heat they emitted. This was corroborated by the discovery that other spacecraft with different designs had not been affected in the way Pioneer 10 and 11 had. As Turyshev said, speaking of the study, "the story is finding its conclusion because it turns out that standard physics prevail. While of course it would've been exciting to discover a new kind of physics, we did solve a mystery."

Questions 14-20

The reading passage has seven sections, A-G. Which section contains the following information?

14 The contemporary context of John Anderson's study ____

15 How Turyshev's study was conducted _____

- 16 A description of the journey of the Pioneer aircraft ____
- 17 How data was normally cached at the time of the Pioneer launch _____
- 18 Why Turyshev's study couldn't rely on new information ____
- **19** The name of a scientific publication ____

20 The original theories for the Pioneer anomaly _____

Questions 21-25

Complete each sentence with the correct ending A-H below.

A played a pivotal role in Turyshev's study.

B coincided with another scientific breakthrough in its field.

C leftover propellant had been expected to cause issues.

D contradicted contemporary theories about the Pioneer spacecraft.

E ceased communication later than its predecessor.

F was inspected by former TRW engineers to confirm its authenticity.

G exceeded all expectations in terms of quantity.

H external factors had been taken into account in the planning stage.

21 NASA's Pioneer 10 spacecraft

22 The Planetary Society

23 Some of the spacecraft's deceleration was not a surprise because

24 John Anderson's study

25 The data Turyshev used in his study

Questions 26-28 Choose **THREE** letters **A-H**.

Which **THREE** of the following statements are true of Turyshev's study?

A Former Pioneer team members were recruited to help to understand the data.

B It was an initiative by the Planetary Society that instigated it.

C It provided us with the first proof of extra dimensions.

D It identified head build-up caused by the Pioneer design as the culprit behind the anomaly.

E Parts of the Pioneer spacecraft were recreated to help with the study.

F The analysis stage of the study was particularly time-consuming.

G It proved that spacecraft with design similar to the Pioneer 10 and 11 faced similar issues.

 ${\bf H}$ Turyshev was unhappy with the result of his investigation.

Section 3

The Future of Food

When we think of the future, most of us imagine hover boards and flying cars, exciting new technological advancements and developments, perhaps even scientific achievements and breakthroughs. What we spend little time contemplating, however, is what we will be eating. Nevertheless, food futurologists and organisations around the world have examined the prospects, and they might, at first glance at least, appear less than thrilling. One thing that's for certain, according to food futurologist Morgaine Gaye, is that meat will once again become a luxury. "In the West," she proclaims, "many of us have grown up with cheap, abundant meat". Unfortunately though, rising prices are spelling the doom of this long-lasting trend. "As a result we are looking for new ways to fill the meat gap." Professor Sheenan Harpaz of the Volcani Centre in Beit Dagan, Israel, agrees: "As the price of raising livestock goes up, we'll eat less beef." So, what will we eat?

According to Harpaz as well as Yoram Kapulnik, the director of the Volcani Centre, the answer to that question lies with our reliance on genetic engineering. As overpopulation and resource depletion will inevitably lead to a struggle to feed the masses, they predict, the food industry will experience a shift in focus from "form" to "function". "Functional foods" will be genetically modified to provide additional value, and they will be targeted at each group of the population - with foods customised to meet the needs of men, women, the elderly, etc. "Once we have a complete picture of the human genome," explains Kapulnik, "we'll know how to create food that better meets our needs."

But food still has to come from somewhere and leading food futurologists and other scientists are firm on their belief that the foods of the future will come from insects. "They are nutritionally excellent," says Arnold Van Huis, lead author of Edible Insects, a 2013 report by the UN's Food and Agriculture Organisation. Not only that but, according to researchers at Wageningen University in the Netherlands, they are also full of protein, and on par with ordinary meat in terms of nutritional value.

Insects are already a part of people's diets in various cultures in Asia and Africa; however, one major hurdle that will need to be overcome with regards to Western countries is presentation. As Gaye suggests, "things like crickets and grasshoppers will have to be ground down and used as an ingredient in things like burgers". There is already such an initiative in Kenya and Cambodia (the quite successful WinFood project), and the Netherlands is already investing into research on insect-based diets and the development of insect farm legislation.

Another source of future food, according to Dr Craig Rose of the Seaweed Health Foundation, could be algae. Algae, like insects, are extremely nutritious and already popular in Asia, and could be the perfect solution for three very important reasons: first of all, they can grow both in fresh and salt water - a notable advantage, considering the shortage of land we are bound to experience in the future; secondly, they grow at an astounding pace the likes of which no other plant has ever been found to achieve before; and finally, with 10,000 different types of seaweed around the world, they can open up an exciting world of new flavours for us to discover. But that's not all: several scientists believe that the biofuel we would extract from algae could lead to a diminished need for fossil fuels, thereby improving our carbon footprint. Algae would, much like insects, need to be refashioned to appeal to Westerners, but research such as the one conducted by scientists at Sheffield Hallam University, who replaced salt in bread and processed foods with seaweed granules with efficacious results, suggests that this is unlikely to pose a problem.

The final option brought forth by scientists is lab-grown, artificial meat. In early 2012, a group of Dutch scientists managed to produce synthetic meat using stem cells originating from cows, and there are already a few companies, such as the San Francisco start-up Impossible Foods and the Manhattan Beach-based Beyond Meat, which are dedicated to manufacturing plant-made meat. The benefits of a worldwide move towards in-vitro meat would be tremendous for the environment, which would see a reduction in energy and water waste and greenhouse gas emissions, and would significantly reduce animal suffering. There is one hindrance to such plans at the moment, sadly, and that's the price: the first artificial burger, grown at Maastricht University in 2013, cost a whopping €250,000 (£190,545) to make.

Questions 29-33

Complete the summary. Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

There are several not particularly **29** ______ theories as to what food might look like in the future, according to several organisations and food futurologists around the world. Morgaine Gaye, a prominent food futurologist, believes that meat is set to all but disappear from our daily diets again due to **30** ______. Professor Harpaz offers the same opinion, contending that **31** ______ will continue to become costlier and costlier. To fill the gap left by meat, he says, we will have no choice but to turn to **32** ______, with "functional foods" that will be aimed at each demographic. The only step we'll need to take to get there is to manage to decode the **33** ______.

Questions 34-40

Complete the table.

Choose NO MORE THAN THREE WORDS from the passage	e for each answer.
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Future food		
Insects	- 34 and full of protein	
	- Similar to meat in terms of nutritional value	
	- Regularly consumed in 35	
	- 36 will need to be adjusted for unaccustomed cultures	
Algae	- Easy and quick to 37	
	- Up to 10 000 different flavours	
	- Might positively influence 38 by providing us with alternative fuels	
Lab-grown meat	- Made with bovine 39 and/or plants	
_	- Would lead to a drop in energy and water waste, as well as greenhouse gas emissions	
	- Would also alleviate 40	
	- Too expensive at the moment	

Answer Keys

IELTS Reading Section 1

- 1. **FALSE**. Wow. Image having a one billion commuters city. Paragraph One, second sentence gives a figure of 1.3 billion people A YEAR.
- 2. **TRUE**. First sentence of Paragraph Two supports the statement: "... might not be such a novelty in contemporary society", contemporary here meaning 'modern, relating to our time'.
- 3. **TRUE**. Middle of Paragraph Two: "... Royal Commission of 1846 meant that central London was out of bounds for railway companies". 1846 is 19th century.
- 4. **FALSE**. It is vital to understand what a precursor is (see <u>Vocabulary</u>). Last sentence of Paragraph Two states that the man 'envisioned', or came up with the idea of Fleet Valley fifteen years after 1830, so in 1845. Then the first sentence of Paragraph Three states that the first Metropolitan Railway station was opened in 1863. Therefore, the idea of Fleet Valley came before the London Underground concept, so the opposite is true.
- 5. **NOT GIVEN**. Even though the figure of five years is mentioned in Paragraph Three, it is not stated whether it took five years to build it. For what we know, it could've taken much more. No such information is given.
- 6. **NOT GIVEN**. Last sentence of Paragraph Three doesn't mention whether the government had to convince private investors to fund the project. They were promised financial returns. This is a dubious question, so here is a tip unless all of the statements check out as correct, mark the answer 'Not given' unless, of course, all of the statements are incorrect.
- 7. **C**. Last sentence of Paragraph Four contains the answer. **A** is incorrect it was the drivers, not the passengers, who were encouraged to wear beards. The opposite of Answer **B** is states the Underground was a great success. The opposite of **D** is given in the text it was much worse in the past, all year round.
- 8. **B**. The middle of Paragraph Five mentions a new, deep-level line being opened. Answer **A** is incorrect as the Underground didn't (and didn't have to) stop using shallow lines they were still in use. Answers **C** and **D** are not mentioned.
- 9. **D**. The 70 years mentioned in the answer is the period between 1890 and 1968, mentioned at the end of Paragraph Five. Answer **A** doesn't fit as the name 'Viking Line' was a provisional one, a placeholder. The first electric line was opened in 1890, so Answer **B** is incorrect. Answer **C** is not mentioned.
- 10.**A**. Second sentence of Paragraph Six: "... *when all of those companies were nationalised and merged to form the London Passenger Transport Board*..." Answer **B** is incorrect as the diagram was released by an individual names Harry Beck, not the Transport Board. Answer **C** is wrong as the Board was established and owned by the state, it's the lines that were established by private investors: "London Underground's first lines were built by private developers". Answer D is not mentioned only some of the services are said to have been controlled by the Board.
- 11.**busking**. Middle of the penultimate paragraph. This question is almost impossible to answer unless you know the word busking, or public performance that involves playing music or singing.
- 12.**melting pot**. Second question of the last paragraph. 'Financial hub' shouldn't be used as the idea is already mentioned in the question as 'business'.
- 13.**shortcomings**. The question suggests some sort of contrast between the positive thing in the question itself *"it's still a unique and important cultural phenomenon"* and the gap, which means that the gap should have a negative word or phrase. See last sentence of the text.

IELTS Reading Section 2

- 14.**D**. The word 'contemporary' is means 'relating to the same period'. It is crucial to understand it to answer the question. Paragraph C mentions Anderson's study too, however it is talked about at a different period of time, namely 1998.
- 15.**G**. The details of the study are in Paragraph G. Paragraph E mentions Turyshev's decision to 'get to the bottom of it'.
- 16.**B**. The only paragraph dedicated to a (rather brief) account of Pioneer's journey.
- 17.**F**. Last sentence of Paragraph F mentions the way data had been stored back then.
- 18.E. Second sentence of Paragraph E states the reason: "Since the two spacecraft had stopped communicating with earth ... all he could depend on were old communications and data".
- 19.A. 'Physical Review Letters' is the name of the publication in question.
- 20.C. First two sentences of Paragraph C give different hypothesis of the Pioneer phenomenon.
- 21.E. First sentence of Paragraph E, in brackets. Pioneer 11 stopped sending signals first in 1995, then Pioneer 10 in 2003.
- 22.**A**. First sentence of Paragraph E mentions the great help of The Planetary Society: "... with the monetary aid of the Planetary Society and its eager, dedicated members...".
- 23.**H**. First sentence of Paragraph C mentions the anticipated factors that could contribute to slowing down of the spacecrafts: *"the gravitational pull of the Sun and other massive objects in the solar system"*.
- 24.**B**. First and second sentences of Paragraph D mention the two breakthroughs: the discovery made by the Hubble telescope about the expansion of the universe and Anderson's findings concerning the Pioneer Anomaly.
- 25.**G**. Second sentence of Paragraph F points out the unexpectedly high volume of research material: "... *there were more than 43 gigabytes of data an admirable result...*".
- 26.A. Second sentence of Paragraph G: "... retired TRW engineers who had worked on the Pioneer project..."
- 27.D. Middle of Paragraph G: "... more specifically the heat they emitted."
- 28.**F**. First two sentences of Paragraph G: "... *the formidable task of going through the volumes of information began. It was neither quick nor easy...* "

IELTS Reading Section 3

- 29.thrilling. Paragraph One, third sentence: "... the prospects... appear less than thrilling."
- 30.**rising prices**. Bottom half of Paragraph One goes: "*rising prices are spelling the doom of this long-lasting trend*"
- 31.**raising livestock**. Last sentence of the first paragraph: "*As the price of raising livestock goes up, we'll eat less beef*". Note that 'to contend' means 'to agree, to have similar opinion'.
- 32.genetic engineering. First sentence of the second paragraph. 'To turn to' means 'to choose to do something, especially something unpleasant'. Yuck.
- 33.**human genome**. Last sentence of Paragraph Two. The word 'decode' should tip you in the right direction since 'to decode human genome' is a very common collocation, although the phrase itself is rare.
- 34.**Nutritionally excellent**. Paragraph Three, second sentence. 'Full of protein' bit helps us to find the phrase in the gap.
- 35.**Asia and Africa**. First sentence of Paragraph Four. Make sure to capitalise both names.
- 36.**Presentation**. First sentence, Paragraph Four. 'Western cultures' helps us to pick 'Presentation' over 'diets' that is found at the end of the same paragraph.

- 37.**Grow**. Paragraph Five, second sentence mentions the ease and speed of growing the algae. No other options fit in here.
- 38.**Carbon footprint**. Bottom half of Paragraph five: 'To positively influence' in the question is paraphrased as 'improving' in the text.
- 39.**Stem cells**. First sentence of Paragraph Six. 'Bovine' is an adjective that means 'relating, or connected to cows'
- 40.**Animal suffering**. 'To alleviate' means to lessen, to reduce. Understanding the word is the main challenge in answering this question, with the answer located in the bottom half of the last paragraph.

Vocabulary

The vocabulary below is meant to help you with the more difficult words. If the word isn't on the list then you are either supposed to know it or it is too specific to be worth learning and you don't have to know it to answer the question. Symbols in brackets mean part of speech (see bottom of the list). Sentences in italics give examples of usage for some more complex words and phrases.

And remember — you are not given a vocabulary list (or a dictionary) at your real exam.

Reading Section 1

Conceive (v) - to create something, to imagine something, to give birth something. *He conceived the project back in* 2010 in his dorm room.

Precursor (n) - something that existed before another thing and contributed to the development of it. *Broadly speaking, an ox cart can be considered a precursor of the modern car.*

Vibrant (adj) - exciting and energetic, full of colour and emotion. *The vibrant atmosphere of a small Spanish town during the bullfighting festival.*

Weather (v) - to successfully deal with a difficult problem or situation. *It won't be easy to weather the financial crisis, but we have no choice in the matter.*

Spate of - a higher than usual number of (usually) unpleasant events. A spate of conflicts in the Middle East. **Busking** (n) - singing or playing music in public places for money. Busking is not as easy and fun as it seems to be - you have to spend hours standing, it can be quite tiring.

Grimy (adj) - very dirty. The car was old, grimy and it refused to start.

Shortcoming (n) - a defect or a mistake, especially compared to some standard. *She wasn't ready to admit her obvious shortcomings as a head manager.*

Reading Section 2

Incessant (adj) - continuing endlessly, never stopping. Mostly used negatively. *Mikhail's incessant drinking annoyed his colleagues*.

Perplexed (adj) - confused by the difficulty of something. *Maria always found herself perplexed by even the most basic math equations.*

Awry (adv) - the wrong way, not the indented way. *The economic recession has made his plans of buying a house awry*.

Propellant (n) - something that gives energy to move forward. *Rocket fuel is the common propellant used for spaceships*.

Ascribe (v) - to consider something to be the cause or reason for something else. *We ascribe George's enormous*

success to his hard-work and ambition.

Diligence (n) - quality of working with care and effort. *Studying with due diligence always pays off.*

Formidable (adj) - respectable because of its size, power or difficulty. *Writing a diploma paper is a formidable task* **Blueprint** (n) - a detailed technical drawing of something like a machine, a building or a mechanism. Usually made on blue paper, hence the name. *Before erecting the building the blueprints have to be finalised and approved by the committee*.

Perseverance (n) - the quality of sticking to one's task despite difficulties. *Thanks to Joey's perseverance the research has been finished on time*.

Corroborate (v) - to back up or support something with new information. *Our data corroborates the current statements on global warming.*

Reading Section 3

Contemplate (v) - to consider something, usually for a prolonged period of time. *He is contemplating moving to the USA - legally or otherwise*.

Prospects (n) - the possibility of something good happening in the future. *Your business's prospects are questionable* - *you don't really know how to run a company of your own*.

Livestock (n) - animals that are kept and grown on a farm. *The livestock had to be moved to a different farm due to a risk heavy hail.*

Reliance (n) - dependence on something. *Our reliance on materials from abroad puts the production in danger - we can't afford to risk having shortages.*

Depletion (n) - reduction in something, exhausting something such as natural resources. *The rumours of oil reserves depletion are exaggerated.*

Notable (adj) - worthy of attention, important, standing out. *Roland is a notable figure in the field of agriculture*. **Astounding** (adj) - shockingly impressive, very surprising. *Juliet's astounding success at work made many of her colleagues jealous*.

In-vitro (adj) - happening outside of body and artificially. *In-vitro fertilisation nowadays is a common practice*. **Hindrance** (n) - something that presents difficulties or slows down. *The many bureaucratic hindrances that small businesses have to face*.