

Reference 1: Video on propaganda in advertising

Background Info:

Key Claims:

The video script highlights the increasing saturation of advertisements in modern society, emphasising how individuals can be easily influenced by propaganda techniques employed in advertising. It discusses various tactics such as testimonials, bandwagoning, name-calling, glittering generalities, card stacking, plain folks, and transfer, all aimed at manipulating people's actions and beliefs.

Perspective:

The perspective of the content is critical of the manipulative nature of advertising, presenting it as a pervasive force that seeks to control consumer behaviour and shape societal norms. It warns viewers to be wary of these techniques and to recognise when they are being influenced.

Maths	English
<ul style="list-style-type: none">Analysing statistical data on the increase in daily advertisements over time (from 500 in the 1970s to 5000 today).Evaluating the impact of propaganda techniques on consumer behaviour through statistical analysis and probability models.	<ul style="list-style-type: none">Understanding and analysing the language used in advertising propaganda techniques such as testimonials, bandwagoning, name-calling, glittering generalities, etc.Comprehending the nuances of persuasive writing and rhetoric employed in advertising.

Strengths	Strengths
<ul style="list-style-type: none">Provides quantifiable data to support claims about the increase in advertising.Offers statistical tools to analyse the effectiveness of propaganda techniques.	<ul style="list-style-type: none">Helps to dissect and understand the manipulative language and rhetoric used in advertising.Enables critical analysis of the persuasive techniques employed.
Limitations	Limitations
<ul style="list-style-type: none">May oversimplify complex behavioural patterns influenced by advertising.Statistical analysis may not fully capture the psychological aspects of persuasion.	<ul style="list-style-type: none">Interpretation of language and rhetoric can be subjective.Requires a nuanced understanding of language and cultural context, which may vary among viewers.

Possible questions:

- How has the increase in advertising over time reflected changes in consumer culture and societal norms?
- What role does globalisation play in the spread and impact of advertising propaganda techniques across different cultures and regions?
- How do advancements in technology, such as social media and targeted advertising algorithms, contribute to the saturation of advertisements in contemporary society?
- Can awareness of propaganda techniques mitigate their effectiveness, or are individuals inherently susceptible to manipulation regardless of knowledge?
- How do regulatory frameworks differ globally in addressing deceptive advertising practices, and what impact do these regulations have on consumer protection and choice?

Reference 2: Timeline showing the impact of advancement of technology for transfer of info in the US

Background Info:

Key Claims:

The analysis tracks the evolution of transatlantic information transfer from the slow-paced mail system in 1776 to the instant communication of social media in 2015. It highlights the significant advancements in technology over time, showcasing the drastic reduction in the time taken and the increase in the volume of information transmitted.

Perspective:

The content takes a historical perspective, emphasising the transformative impact of technological advancements on transatlantic communication. It underscores the progression from traditional methods like mail, which took considerable time and effort, to modern methods like social media, which facilitate instantaneous communication across vast distances.

Maths	English
<ul style="list-style-type: none">• Calculation of time taken for information transfer using different methods.• Measurement of distances covered by various modes of communication.• Comparison of speeds and efficiencies of different communication technologies.	<ul style="list-style-type: none">• Description of historical context and technological advancements.• Articulation of key claims and ideas.• Presentation of data and analysis in a coherent narrative.

Strengths	Strengths
<ul style="list-style-type: none">• Provides quantitative analysis for comparison.• Enables precise measurement and calculation.	<ul style="list-style-type: none">• Facilitates narrative construction and storytelling.• Allows for nuanced interpretation and contextualization.
Limitations	Limitations
<ul style="list-style-type: none">• May oversimplify complex socio-technological dynamics.• Does not capture qualitative aspects of communication.	<ul style="list-style-type: none">• Subject to interpretation and bias in language use.• May lack the precision of quantitative analysis.

Possible questions:

How did advancements in technology influence the spatial and temporal dimensions of transatlantic communication? What role did geography play in shaping the evolution of communication technologies across the Atlantic? How did the progression from analog to digital communication impact the perception of distance and time in transatlantic information transfer? In what ways did socio-political factors intersect with technological advancements to shape transatlantic communication networks? How do the historical developments outlined in the content reflect broader trends in globalisation and interconnectedness?

Reference 3: Digital footprint: What is it and why should I care?

Background Info:

Key Claims:

The script discusses the concept of a digital footprint, emphasising how our online activities leave a trail that others can follow. It highlights that this digital footprint begins early in life and grows as we interact with online platforms. The script also warns that companies and individuals collect information about us through our digital activities, shaping their perception of who we are. Furthermore, it mentions the potential permanence of digital content and the consequences it may have on future endeavours such as job searches.

Perspective:

The content adopts a cautionary perspective, urging individuals to be mindful of their digital footprint and its implications. It suggests that our online actions have lasting effects and emphasises the importance of taking

ownership of our digital presence. Additionally, it implies a sense of inevitability regarding online scrutiny in various aspects of life, prompting viewers to consider how their digital footprint may influence future opportunities.

Maths	English
<ul style="list-style-type: none">Quantification of digital activity (e.g., counting online interactions).Statistical analysis of digital trends (e.g., targeted advertising based on user preferences).	<ul style="list-style-type: none">Communication of complex concepts (e.g., digital footprint, online trail).Persuasive writing techniques (e.g., using rhetorical questions to engage viewers).

Strengths	Strengths
<ul style="list-style-type: none">Provides quantitative insights into digital behaviour.Facilitates data-driven decision-making.	<ul style="list-style-type: none">Engages and persuades viewers through effective communication.Conveys complex ideas in accessible language.
Limitations	Limitations
<ul style="list-style-type: none">May oversimplify nuanced aspects of online behaviour.Limited in capturing qualitative aspects of digital interactions.	<ul style="list-style-type: none">Relies on subjective interpretation and presentation.May not fully capture the technical aspects of digital footprints.

Possible questions:

- How does the concept of a digital footprint relate to the orientation in space and time?
- In what ways does the digital footprint impact individuals' perceptions of time and space?
- How might cultural differences influence the understanding and management of digital footprints across different regions of the world?
- What role does technological advancement play in shaping the evolution of digital footprints over time?
- How can individuals navigate the intersection of their digital presence with real-world spaces and temporal contexts?

Reference 4: Around the world in idioms

Background Info:

Key Claims:

The website presents idiomatic expressions from different cultures around the world, focusing on the UK, Russia, and China. Each expression is accompanied by its meaning, offering insight into the cultural nuances and linguistic diversity across nations.

Perspective:

The content takes a comparative approach, examining how different cultures convey ideas and concepts through language. By analysing idiomatic expressions, it delves into the cultural context and linguistic intricacies that shape communication norms and practices worldwide.

Maths	English
<ul style="list-style-type: none">Comparative analysis of idiomatic expressions across cultures.Quantitative assessment of frequency or usage patterns of specific idioms.Statistical analysis to identify common themes or variations in expression.	<ul style="list-style-type: none">Interpretation of idiomatic meanings within cultural contexts.Linguistic analysis to understand the nuances of language and expression.Historical and cultural research to provide context for idiomatic usage.

Strengths	Strengths
<ul style="list-style-type: none">Provides quantitative data for comparative analysis.Helps identify patterns and trends across different cultures.	<ul style="list-style-type: none">Offers in-depth understanding of linguistic nuances and cultural connotations.Allows for nuanced interpretation of idiomatic expressions.
Limitations	Limitations
<ul style="list-style-type: none">May oversimplify cultural nuances and historical contexts.Difficult to quantify subjective aspects of language and communication.	<ul style="list-style-type: none">Relies heavily on qualitative analysis, which can be subjective.Requires extensive cultural and linguistic knowledge for accurate interpretation.

Possible questions:

- How do cultural and historical factors influence the evolution of idiomatic expressions?
- Can mathematical analysis accurately capture the cultural significance of idiomatic language?
- In what ways do idiomatic expressions reflect societal values and communication norms?
- How might the interpretation of idiomatic expressions vary between native speakers and non-native speakers of a language?
- What role does language play in shaping perceptions of truth and deception across different cultures?

Reference 5: Key findings on the spread of true and false news online

Background Info:

Key Claims:

The study explores the dissemination of true and false news on Twitter over the span of 2006 to 2017. It reveals that false news spreads faster, further, and more broadly than true news across all categories of information. This phenomenon is attributed to the increased interest in false news, suggesting that people are more likely to share intriguing but false information. False political news, in particular, is highlighted as spreading rapidly and deeply into networks, surpassing other categories of misinformation. The study also emphasises the potential consequences of false news, including misallocation of resources during conflicts and natural disasters, misaligned business investments, and misinformed elections.

Perspective:

The perspective conveyed in the content emphasises the significant impact of false news dissemination, particularly on social media platforms like Twitter. It underscores the societal implications of misinformation, ranging from influencing political landscapes to potentially altering resource allocation during crises. The content advocates for a critical examination of how false news spreads and its consequences, urging for measures to mitigate its harmful effects.

Maths	English
<ul style="list-style-type: none">Analysis of data comprising approximately 126,000 stories tweeted by 3 million users over a period of 11 years.Statistical classification of news as true or false using data from six independent fact-checking organisations.Graphical representation of the spread of true and false information over time, illustrating the number of minutes it takes to reach a certain number of unique users.	<ul style="list-style-type: none">Analysis and interpretation of findings from the study published in the journal Science.Writing and presentation of abstract summarising the research objectives, methodology, and key findings.Explanation and elaboration of key claims and ideas through written content, including abstract, graphs, and illustrations.

Strengths	Strengths
<ul style="list-style-type: none">Utilisation of statistical analysis allows for	<ul style="list-style-type: none">Clear and concise communication of research

<p>quantitative assessment of data, providing insights into the spread of true and false news.</p> <ul style="list-style-type: none"> Graphical representation aids in visualising trends and patterns, enhancing comprehension of complex information. 	<p>objectives, methodology, and findings through written content facilitates understanding among readers.</p> <ul style="list-style-type: none"> Abstract provides a succinct summary of the study, enabling quick comprehension of key points.
Limitations	Limitations
<ul style="list-style-type: none"> Statistical classification may be subject to biases or inaccuracies inherent in the data provided by fact-checking organisations. Graphs may oversimplify nuanced aspects of information dissemination, potentially overlooking certain factors influencing the spread of news. 	<ul style="list-style-type: none"> Interpretation of findings may be influenced by subjective biases or misinterpretations, potentially affecting the accuracy of conveyed information. Reliance on written communication alone may limit the depth of understanding compared to complementary visual aids or interactive presentations.

Possible questions:

How does the dissemination of false news on social media platforms impact global perceptions of truth and reality? In what ways can advancements in data analysis and statistical methods contribute to combating the spread of misinformation?

How do cultural, social, and political factors influence the propensity to share false news?

What measures can be implemented on social media platforms to mitigate the spread of false information and promote digital literacy?

How do historical events and technological developments shape the dynamics of information dissemination in the digital age?

Reference 6: Exposing the monetization of disinformation - Report from the Global Disinformation Index

Background Info:

Key Claims:

The Global Disinformation Index (GDI) highlights how internet business models prioritise engagement over content quality, fueling disinformation. It aims to disrupt this model by providing transparent disinformation risk ratings for the open web. GDI's data shows that advertising funds climate change disinformation, with \$36.7 million annually to 98 sites between March 15, 2021, and October 25, 2021. Major advertisers like Google, Taboola, and Criteo contribute 63% (\$23.1 million) to these sites, with Google leading at 38.8%. This indicates a significant financial flow from major platforms to misinformation sites. The decrease in Google's share suggests potential efforts to mitigate funding for climate change misinformation.

Perspective:

The content calls for disrupting current internet business models that prioritise engagement over content quality and harm assessment. It advocates for independent ratings of news sites to combat disinformation effectively and promotes a transparent and responsible online ecosystem. It highlights the adverse effects of advertising support on climate change misinformation sites and stresses the necessity of transparency and accountability in advertising practices. The perspective urges cutting financial resources to climate change misinformation sources to promote scientific consensus. It sheds light on major advertising companies' role in financing climate change misinformation and emphasises the need for accountability. Despite some efforts, significant financial support still comes from prominent advertising platforms, necessitating continuous monitoring and action.

Maths	English
<ul style="list-style-type: none"> Data collection and analysis to quantify the financial support received by climate change disinformation sites. Statistical modelling to estimate annual advertising revenue for the identified sites. Calculation of shares and total amounts of advertising spend on climate change 	<ul style="list-style-type: none"> Interpretation and communication of findings to elucidate the significance of advertising company contributions to climate change disinformation funding. Writing reports and documentation to present the analysis methodology and results effectively. Advocacy through written communication to

<p>disinformation sites.</p> <ul style="list-style-type: none"> • Comparison with previous reports to assess changes in advertising contributions over time. • Data analysis to identify patterns and trends in disinformation. • Statistical modelling to assess disinformation risk ratings. • Algorithm development to automate processes related to disinformation detection. 	<p>advocate for increased transparency and accountability in advertising practices.</p> <ul style="list-style-type: none"> • Text analysis to evaluate the quality and credibility of content. • Communication skills to convey the importance of addressing disinformation. • Writing and editing to produce reports and documentation on disinformation risk.
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Strengths	Strengths
<ul style="list-style-type: none"> • Provides quantitative insights into the distribution of advertising spend among different companies. • Allows for comparison and trend analysis to assess changes over time. • Provides objective and quantitative measures of disinformation risk. • Enables automated processes for scalability and efficiency. 	<ul style="list-style-type: none"> • Facilitates clear and persuasive communication of complex findings to diverse audiences. • Enables advocacy efforts to raise awareness and mobilise action against climate change disinformation. • Allows for nuanced analysis of content, including context and tone. • Facilitates effective communication of findings to diverse audiences.
Limitations	Limitations
<ul style="list-style-type: none"> • May not capture the full extent of financial support from other advertising platforms beyond those analysed. • Relies on data accuracy and completeness, which can vary depending on the sources and methodologies used for data collection. • May overlook nuanced aspects of disinformation that require human interpretation. • Relies heavily on data availability and quality, which can vary. 	<ul style="list-style-type: none"> • Subject to interpretation and potential biases in how findings are presented and framed. • May face challenges in effectively reaching and engaging target audiences, particularly those already exposed to misinformation narratives. • Subjective interpretations of content may introduce bias. • Time-consuming compared to automated mathematical approaches.

Possible questions:

How do the findings regarding advertising company contributions to climate change disinformation funding align with broader efforts to combat misinformation on climate change globally?

What are the potential implications of major advertising platforms like Google, Taboola, and Criteo contributing significant funding to climate change disinformation sites?

How can regulatory measures or industry standards be implemented to ensure greater transparency and accountability in advertising practices concerning climate change-related content?

What strategies can be employed to incentivize advertising companies to redirect their funding away from climate change disinformation sites and towards credible sources of information?

How does the GDI's analysis account for potential shifts in advertising spending patterns and strategies by major platforms over time?

What are the potential implications of advertising funding for climate change disinformation on public perception and policy responses to climate change?

How can international cooperation and regulation address the financial incentives that sustain climate change disinformation online?

What strategies can be implemented to increase transparency and accountability in online advertising practices, particularly concerning climate change-related content?

How does the GDI's analysis account for the evolving nature of climate change disinformation tactics and the changing landscape of online advertising?

Reference 7: Regulation systems: we are watching you! The potential power of technology

Background Info:

Key Claims:

The website discusses the pervasive surveillance and control mechanisms enabled by modern technology. It highlights instances where smart devices listen to conversations for targeted marketing, parents monitor their children's activities through apps, governments influence social media content, and spyware is utilised as a defensive and offensive tool by governments.

Perspective:

The perspective presented on the website is one of concern regarding the potential misuse and overreach of technology in terms of privacy invasion and control. It portrays a dystopian view of a world where personal data and communication are constantly monitored and manipulated by various actors, including corporations and governments.

Maths	English
<ul style="list-style-type: none">Statistical analysis of data collection methods.Probability calculations regarding the likelihood of surveillance.	<ul style="list-style-type: none">Rhetorical analysis of the language used by governments and corporations to justify surveillance.Literary analysis of dystopian themes present in the content.

Strengths	Strengths
<ul style="list-style-type: none">Provides quantitative evidence of surveillance practices.Helps in understanding patterns and trends in data collection.	<ul style="list-style-type: none">Allows for nuanced interpretation and critique of surveillance narratives.Provides insights into the socio-cultural implications of surveillance.
Limitations	Limitations
<ul style="list-style-type: none">May oversimplify complex social and ethical issues.Limited in capturing qualitative aspects of surveillance impact.	<ul style="list-style-type: none">Subject to interpretation and bias in analysis.Relies heavily on textual evidence, which may not fully capture the reality of surveillance practices.

Possible questions:

How do the surveillance practices described in the content reflect historical and contemporary power dynamics?
In what ways do the technological advancements discussed reshape our understanding of privacy and individual autonomy?
How does the intersection of maths and English disciplines contribute to a comprehensive analysis of surveillance issues?
What are the global implications of governments' influence on social media platforms and the use of spyware as a defence mechanism?
How might different cultural and societal contexts influence the acceptance or resistance to widespread surveillance practices?

Reference 8: Related concepts in mathematics and lang & lit

Background Info:

Key Claims:

The content of the table primarily focuses on disciplinary skills in mathematics and language and literature. It outlines various related concepts in each domain, highlighting the diverse elements that contribute to proficiency in these subjects. In mathematics, concepts such as change, approximation, equivalence, and representation are emphasised, reflecting the importance of understanding numerical and spatial relationships. On the other hand, language and literature encompass concepts like audience imperatives, character development, genre analysis, and thematic exploration, emphasising the interpretive and expressive aspects of communication.

Perspective:

The perspective of the content is to underscore the multidimensional nature of mathematical and language-based competencies. It recognizes that proficiency in these disciplines involves more than mere technical skills; it requires an appreciation for the underlying principles, patterns, and contexts that shape mathematical and literary phenomena. Moreover, the content acknowledges the interconnectedness of mathematics and language, highlighting how both domains contribute to critical thinking, problem-solving, and effective communication.

Maths	English
<ul style="list-style-type: none">• Models: Utilising mathematical models to represent real-world phenomena and solve problems.• Patterns: Identifying and analysing patterns to make predictions and draw conclusions.• Representation: Using mathematical symbols, graphs, and diagrams to convey information visually.• Simplification: Streamlining complex problems or equations to facilitate understanding and solution.• Systems: Employing systematic approaches to analyse relationships and interactions among variables.	<ul style="list-style-type: none">• Character: Analysing characters' traits, motivations, and development within literary works.• Theme: Identifying recurring themes or central ideas and examining their significance.• Point of View: Evaluating how the narrative perspective shapes the reader's understanding and interpretation.• Style: Analysing the author's use of language, tone, and stylistic devices to convey meaning.• Setting: Examining the role of setting in establishing mood, atmosphere, and context within a narrative

Strengths	Strengths
<ul style="list-style-type: none">• Mathematical methods offer precision and clarity in problem-solving, enabling systematic analysis and logical reasoning.	<ul style="list-style-type: none">• Literary analysis tools allow for nuanced interpretation and exploration of complex themes, fostering critical thinking and empathy.
Limitations	Limitations
<ul style="list-style-type: none">• Mathematical methods may oversimplify real-world phenomena, leading to potential inaccuracies or overlooking contextual factors.	<ul style="list-style-type: none">• Literary analysis tools rely heavily on subjective interpretation, which can result in varied and sometimes conflicting conclusions.

Possible questions:

How do mathematical concepts such as change and space intersect with our understanding of global issues such as climate change and urbanisation?

In what ways does literature reflect or challenge cultural perceptions of time and space, particularly in the context of globalisation and technological advancement?

How can interdisciplinary approaches incorporating both mathematical modelling and literary analysis contribute to addressing contemporary challenges related to spatial planning, resource management, and historical interpretation?

Possible questions/activities that could be asked to be done:

Creating an advertisement?

Analyze the impact of social media as a powerful communication tool. How does it shape public discourse, spread information, and influence behavior?

Reflect on how understanding interdisciplinary connections help us navigate and critically assess information in an increasingly interconnected world?

How has innovation changed everything (brainstorm)

Which References do you guys think will be asked to be compared?

7 & 2 as it focuses on history and development from then to now (the ups and downs)


Had only 3 questions, mostly based on the pre-existing materials.

Reference 3 - The Solar Car

Reference 3 - The Hydrogen Car

SUSTAIN


THE SOLAR CAR



HEAD TO THE LIGHT AND REDUCE THOSE ENDLESS CHARGES

FROM \$178 500

SUSTAIN YOUR DREAM ROAD TRIP



Sustain Solar Car charges twice as fast as a standard electric car.

The average distance travelled is twice as far as a standard electric car.

Average number of charges per 10 000 miles/ 16 000 kilometres:

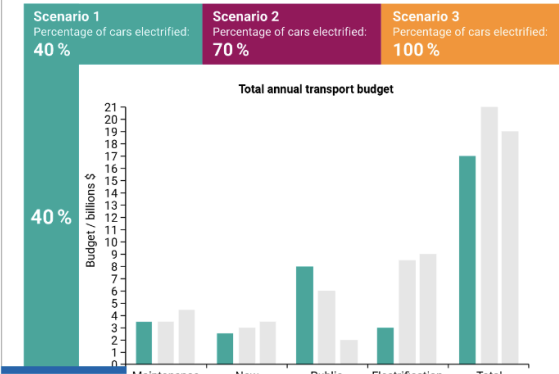
You are a government official working for the department of transport. Your department is overseeing the transition to electric cars over a 10-year period.

The total budget for transport is \$20 billion. If the project costs more than \$20 billion, the extra budget funds will be taken from the budget for the environment.

The interactive media below shows the projected outcomes for three transition scenarios: 40 %, 70 % or 100 % electric vehicles.

This media is interactive

Click on the coloured tabs for each scenario and hover over the graph points for more detail.



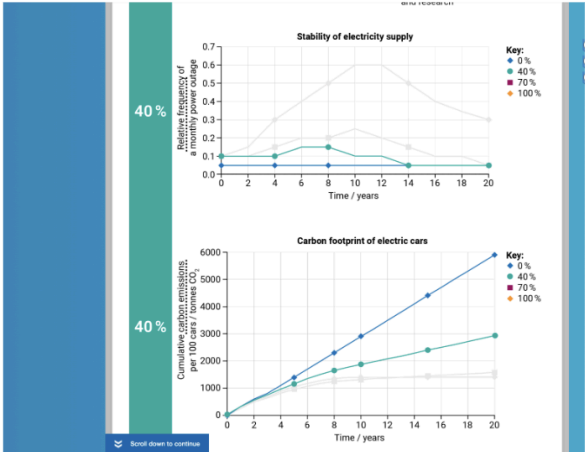
Pre-release material

1 (12 marks)
2 (12 marks)
3 (12 marks)

Refer to the two sales brochures in the tabs above. **Compare and contrast** the synthesis of mathematics and science in “The Solar Car” and “The Hydrogen Car” sales brochures. In your answer you must:

- analyse the use of mathematics and science in each brochure
- explain the strengths and weaknesses of each synthesis
- give an evaluative conclusion.

B I Z



You need to prepare a proposal justifying which scenario is best.

By applying your knowledge of science and mathematics, **justify** which scenario is best.

In your answer you must include:

- evidence supporting your choice using mathematical **and** scientific reasoning
- a response to the evidence against your choice using mathematical **and** scientific reasoning
- an evaluative conclusion.

B I Z

Electric cars are better than their petrol equivalents in a number of ways. Electric vehicles produce zero direct emissions, are 30 % quieter, and have higher energy efficiency than petrol. Electric vehicles are easier to maintain, with fewer parts, they break down less often than petrol cars, and will be on the road for more years than a petrol car.

Using your new interdisciplinary understanding, discuss the challenges and related solutions that electric vehicles present for the self-employed delivery driver in reference 5. In your answer you must:

- explain two challenges
- explain solutions to address both challenges
- include evidence from the pre-release material to support your arguments.

Pre-release material

1 (12 marks)
2 (12 marks)
3 (12 marks)

B I Z

Reference 5

Transport minister

Conscientious consumer

Self-employed delivery driver

Automotive engineer

I have real concerns about the lack of electric car charging infrastructure in this country. At the moment, we only have a fraction of the charging stations needed to charge electric cars. The average distance between charging stations in the countryside is about 50 miles, this just isn't practical for most electric car owners.

I still can't believe that so many people still drive petrol cars. In my country, we are already at 30 % electrification of all vehicles. This is because our government subsidises ownership of electric cars, which reduces the price of each electric car by 20-30 %. Let's get rid of these dirty fossil-fuel cars right now!

I drive my delivery truck in the city every day, all day long. Now the government is telling me I have to pay higher taxes if I don't switch over to an electric truck. I barely make enough money to pay for groceries for my family, and now I'm expected to pay double the price for a new electric truck. We live in an apartment with no way of charging an electric vehicle. There are some charging stations in my city, but the nearest one is an hour away from my home. Even if I were to take the truck to that charging station every day, it would still take 8 hours to fully charge the vehicle.

Electric cars are better than their petrol equivalents in a number of ways. Electric vehicles produce zero direct emissions, are 30 % quieter and have

Pre-release material

1 (12 marks)
2 (12 marks)
3 (12 marks)

B I Z

Tips:

- Refer to the pre-release material often and in detail
- Talk about the benefits and limitations of the mixture of both subjects (disciplines)