

Questions for the May 2024 ID Pre-Release Material

- What words and ideas in the sources are new, challenging to understand, or have unique meanings in this context?
- How does the pre-release material express disciplinary and interdisciplinary ways of knowing?
- What is the meaning of "where" and "when"?
- What is disinformation? What is false news?
- What is propaganda?
- How does the creator's intention impact online interactions?
- How does information spread?
- To what extent can disinformation be considered a business?
- To what extent is the content creator or the content sharer responsible for the spreading of false news?

The ID Statement of Inquiry May 2024

Our increasing interconnectedness provides opportunities for the creation of systems to influence our perspective.

Possible Foci for the May 2024 Interdisciplinary eAssessment

Disciplinary knowledge contributing to the integrated purpose:

During the disciplinary learning in language and literature, students will:

- focus on the ways in which language contributes to understanding and addressing the complex issues surrounding misinformation. They will use visual analysis to gather data, analyze texts, and draw conclusions about the effectiveness of different means to persuade.
- explore fundamental principles of persuasion, including those in visual texts, idiomatic expressions and advertisements.

During the disciplinary learning in mathematics, students will:

- focus on the ways in which mathematical reasoning and logic can contribute to the spread of fake news.
- analyze and interpret data systems related to misinformation.
- Explore how algorithms can support or stop the spread of misinformation/disinformation

Integrated purpose/Synthesis:

During the interdisciplinary teaching and learning process, students will combine their learning from both subjects to develop:

- an evidence-based policy recommendation for the creation of systems that combat misinformation.

Possible Questions for the May 2024 Interdisciplinary eAssessment

Factual, debatable and conceptual questions:

Factual: Blue- IB suggested questions

- What issues/problems are created by misinformation?
- What are the key factors that need to be considered in the output of information?
- What is disinformation? What is false news?
- What is propaganda?
- What are some techniques advertisers use to persuade you to buy their products?
- What factors can affect the spread of information?
- Which turning points in history have affected the way in which information is spread?
- What are the types of misinformation and disinformation?
- What are the differences in literary techniques used in informative vs persuasive content?
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Conceptual:

- How does the creator's intention impact online interactions?
- How does information spread?
- To what extent can disinformation be considered a business?
- How can people influence the spread of information?
- What can people do to support the truth?
- To what extent do relationships between individuals and civilisations influence perspectives?
- Why is it important to identify certain linguistic and persuasive techniques when considering the intention of the media we receive?
- How have media and communication techniques evolved over time to adapt to our changing landscape?

Debatable:

- To what extent should governments control the spread of information?
- To what extent is the content creator or the content sharer responsible for the spreading of false news?
- To what extent should speech be free?
- How can we create a balance between free speech and true information?

During the learning process, students will explore the pre-release materials, framed through these questions:

- What words and ideas in the sources are new, challenging to understand, or have unique meanings in this context?
- How does the pre-release material express disciplinary and interdisciplinary ways of knowing?
- What is the meaning of "where" and "when"?

Criteria specific questions

(Crit. Ai) Analysis of disciplinary knowledge. Example questions to consider:

- What specific elements of disciplinary knowledge from Science and Language and Literature contribute to my understanding the topic of misinformation/disinformation?
- How do the knowledge and skills of Sciences and Language and Literature help me consider the causes, scope and consequences of misinformation/disinformation?
- What differences and similarities do I notice in how each subject :
 - approaches the topic of misinformation/disinformation?
 - Interprets the concepts “perspective”, “systems”, and “interconnectedness”, and the relationship between the concepts?

(Crit. Aii) Evaluation of interdisciplinary perspectives. Example questions to consider:

- What new, more compelling or nuanced understandings of this topic and statement of inquiry do I have now because of the synthesis of these subjects?
- Strengths:
 - How does combining the perspectives and content of Sciences and Language and Literature help me understand this topic and statement of inquiry more fully than I could through either subject alone?
 - What specific knowledge, understanding, skills from each subject was most impactful in strengthening my understanding?
- Limitations:
 - What could be limitations in combining these particular subjects?
 - What other subjects might add another dimension to my thinking about this topic and statement of inquiry?

(Crit. Bii) Justification of how the policy communicates interdisciplinary understanding. Example questions to consider:

- In what specific ways does my product *synthesize* knowledge from both/all subjects/disciplines to communicate *interdisciplinary* understanding? (Remember to give valid reasons and describe evidences how the contributions from the disciplines are truly *integrated* in the product.)

(Crit. Ci) Discuss the development of your own interdisciplinary understanding over the course of the unit. Example questions to consider:

- What did I already know about this issue prior to the unit?
- What did I already know about the Science and Language and Literature content needed in this exploration?
- How did my understanding of the knowledge domains in each subject change over the course of the unit?
- In what ways (if any) did my understanding of disciplinary knowledge change or expand when I *combined* the two subjects in my product?
- What was my thinking process as I tried to combine the disciplinary knowledge into a synthesized understanding? (ie. Did some aspects of each subject stay separate? Did some things seem to blend together?)
- Did any subject/discipline seem more important to the purpose and outcome of the unit?
- In what ways did my understanding of the unit’s topic, issues, concepts, statement of inquiry change over the course of the unit?

(Crit. Cii) Discuss how new interdisciplinary understanding could promote action in the community. Example questions to consider:

- What are some things I learned during this unit that caused me to think differently about the world?
- What types of action resulted/could result from the learning in this unit? (direct, indirect, advocacy, research)
- What types of action do I hope my product could inspire?
- What further action might I be interested in taking based on what I’ve learned in this unit?

Reference-specific questions

Reference 1: Video on propaganda in advertising

Mathematics approach

- **Explain** how the exponential increase in the number of advertisements, from approximately 500 in the 1970s to 5000 today, influenced consumer behavior and decision-making processes over time.
- **Calculate** the percentage increase in the number of advertisements we are exposed to on a daily basis from the 1970s to today.
- Determine the average rate of change in the number of advertisements we are exposed to on a daily basis from the 1970s to today.
- **Compare** the frequency of each propaganda technique mentioned in the script. For example, calculate the ratio of advertisements that use testimonials compared to those that use glittering generalities.
- If an average person spends 5 hours a day exposed to advertisements, estimate how many minutes per advertisement they encounter, based on the information provided in the script.
- **Create** a bar graph showing the frequency of each propaganda technique mentioned in the script. Which technique appears to be the most commonly used?
- If the current trend of increase in the number of advertisements continues, estimate the number of advertisements people will be exposed to on a daily basis in the next decade.
- If 60% of advertisements use the transfer technique, and there are 5000 advertisements encountered daily, how many advertisements are using the transfer technique?
- **Discuss** the implications of the increasing number of advertisements on society, considering factors such as consumer behavior, psychological effects, and societal values. Use mathematical reasoning to support your arguments.

Language and Literature approach

- **Identify** the "characters" in the script. How are these characters portrayed through the use of language and propaganda techniques?
- What overarching themes are explored in the script? How do language and propaganda techniques contribute to the development of these themes?
- **Identify** examples of figurative language (e.g., metaphors, similes) used in the script. Discuss how these devices contribute to the effectiveness of the propaganda techniques described.
- **Describe** the tone of the script. How does the author's choice of language contribute to the overall tone? Provide specific examples from the text to support your analysis.
- **Analyze** the narrative structure of the script. How does the author organize the information presented? **Discuss** the impact of this structure on the audience's understanding of the content.
- **Consider** the perspective from which the script is written. How does the author's point of view influence the portrayal of propaganda techniques and their effects on society?
- **Identify** any symbols or symbolic imagery used in the script. What do these symbols represent, and how do they contribute to the author's message about the influence of advertising on society?
- **Examine** the use of language variation (e.g., formal vs. informal language) in the script. How does the author use different language styles to convey different messages or appeal to different audiences?
- **Discuss** the use of literary techniques such as irony, satire, or exaggeration in the script. How do these techniques contribute to the author's commentary on the pervasive nature of advertising?
- Critically **evaluate** the effectiveness of the language and propaganda techniques used in the script. How persuasive are these techniques, and what ethical considerations arise from their use in advertising?
- **Explore** how propaganda techniques might have affected social histories.
- Using the information from Reference 1, **create** a poster in which you market a product using one of the propaganda techniques.
- **Compare and contrast** the propaganda techniques employed in modern advertising, how do they manipulate individuals' actions and emotions without their awareness.

Combined approach

- **Outline** advertising techniques using the synthesis of Mathematics and Language and Literature.
- **Discuss**, how advertising strategies such as testimonials, band wagoning, and transfer exploit human psychology to influence consumer perceptions and preferences, and how can consumers recognize and resist these manipulative tactics.

- **Compare** the frequency of propaganda techniques mentioned in the script using both mathematical analysis and literary interpretation. How do the numerical data on the frequency of each technique correlate with the effectiveness of those techniques in manipulating language and emotions?
- Conduct a statistical analysis of the types of language devices used in the script (e.g., figurative language, persuasive techniques). Calculate the percentage distribution of each type of language device and discuss how these devices contribute to the effectiveness of propaganda techniques.
- **Create** a bar graph or pie chart illustrating the frequency of each propaganda technique mentioned in the script. Analyze the graph to identify patterns and trends in the use of these techniques and discuss their impact on the audience.
- **Discuss** the ethical implications of the increasing number of advertisements mentioned in the script, combining mathematical analysis of the data with literary interpretation of the language used to convey these messages. How do mathematical trends in advertising relate to broader societal issues explored through language and literature?
- **Compare** the historical data on the number of advertisements mentioned in the script with literary works or historical events that comment on consumer culture and advertising. Use mathematical analysis to identify similarities or differences in advertising trends over time and analyze their representation in literature.
- Use mathematical modeling techniques to predict future trends in advertising based on the data provided in the script. Then, analyze how these predicted trends might be represented or critiqued in future literary works, considering the evolving relationship between language, mathematics, and advertising.
- Quantitatively **analyze** the language used in the script (e.g., word frequency, sentence structure) and correlate these findings with the effectiveness of propaganda techniques. How do mathematical patterns in language usage reflect the strategies employed by advertisers to manipulate emotions and beliefs?
- Critically **evaluate** the reliability and validity of the statistical data presented in the script regarding the number of advertisements. Then, discuss how discrepancies or inaccuracies in the data might impact the interpretation of the script's literary themes and messages about advertising.

Reference 2: Timeline showing the impact of the advancement of technology for transfer of information in the USA

Mathematics approach

- **Create** a line graph representing the advancement of technology for the transfer of information in the USA over the years from 1858 to 2015.

Language and Literature approach

- Using reference 2, **analyze** how the transfer of information due to technological advancements has changed the interactions of peoples of the world.

Combined approach

- **Describe** how the invention of the telegraph revolutionize communication in the 19th century.
- **Comment** on the impact did the widespread adoption of the telephone have on communication and society in the early 20th century?
- **Identify** some examples of how the transfer of information has become more instantaneous and borderless due to technological innovations?
- **Explain** what role did social media platforms like Facebook, Twitter, and Instagram play in reshaping interpersonal communication in the 21st century?
- **Outline** how has the advancement of technology influenced the speed and efficiency of information transfer from mail to instant messaging services?

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

Mathematics approach

- If a person posts an average of 5 times per day on social media and each post contains an average of 20 words, calculate the total number of words they contribute to their digital footprint in a month.
- **Compare** the size of digital footprints between two individuals. If Person A posts 10 pictures per week on social media and Person B posts 3 pictures per day, who has a larger digital footprint after one month? Assume each picture is approximately 2 MB in size.

- If a company uses an algorithm to target ads based on a person's digital footprint, and the algorithm is 70% accurate in predicting their interests, what is the probability that a person will see an ad relevant to them if they have a digital footprint consisting of 100 posts about fashion?
- Research shows that social media platforms retain user data for an average of 5 years. If a person decides to delete their account after 3 years of use, how many years will their data potentially remain accessible online?
- **Create** a line graph illustrating the growth of a person's digital footprint over time, assuming they post an average of 3 times per day on various online platforms. Label the axes appropriately and provide a brief analysis of the trend.
- If a person's digital footprint consists of 5000 posts on social media and 30% of those posts contain personal information, how many posts contain personal information? Discuss strategies individuals can use to protect their privacy online.
- Conduct a survey to determine how many employers use online platforms to screen potential candidates. Based on the survey results, calculate the percentage of job seekers who may be affected by their digital footprints during the hiring process.
- **Estimate** the cost of storing a person's digital footprint for their entire lifetime, assuming each post occupies an average of 1 MB of storage space and the cost of storage is \$0.10 per GB per month. Provide recommendations for individuals on managing their digital footprint to minimize long-term storage costs.

Language and Literature approach

- Using reference 3, **explore** the impact of the phrase "You've got to own your footprint because it's with you for life," on our relationships with people.
- **Analyze** the concept of the "digital footprint" as a character in the script. How is this character portrayed through language and imagery? Discuss its role in shaping the narrative and conveying the message about online presence.
- **Identify** the central theme(s) explored in the script regarding digital footprints and online presence. How are these themes developed through language, tone, and literary devices? Provide textual evidence to support your analysis.
- **Identify** examples of figurative language (e.g., metaphors, personification) used in the script to describe digital footprints. Discuss how these literary devices contribute to the audience's understanding of the concept and its implications.
- **Analyze** the narrative structure of the script. How does the author organize the information presented about digital footprints? Discuss the effectiveness of this structure in engaging the audience and conveying the intended message.
- Consider the perspective from which the script is written. How does the author's point of view influence the portrayal of digital footprints and their impact on individuals? Discuss the reliability and bias inherent in the narrative perspective.
- **Interpret** the symbolism of the digital footprint as it relates to broader themes of identity, privacy, and technology. How does the symbol of the digital footprint deepen the audience's understanding of these themes?
- **Examine** the use of language variation (e.g., formal vs. informal language) in the script. How does the author's choice of language style contribute to the tone and message of the script? Discuss the audience's response to different language registers used.
- **Explore** the intersection of language and technology in the script. How does the language used to describe digital footprints reflect societal attitudes towards technology and online communication? Discuss the implications of these attitudes on language use and literary representation.
- **Analyze** the dialogue between characters in the script, focusing on conversations about digital footprints and online privacy. How does dialogue contribute to character development and thematic exploration? Discuss the effectiveness of dialogue in conveying complex ideas to the audience.
- Critically **evaluate** the script's portrayal of digital footprints and their significance in contemporary society. How does the script challenge or reinforce prevailing attitudes towards online presence and privacy? Use literary analysis to support your arguments.

Combined approach

- **Reflect on the statement**, "your digital footprint becomes part of not only your present but also your future." How might our digital footprint influence our personal and professional lives as we progress through different stages of life?
- **Describe** the concept of targeted advertising based on our digital footprint. How does our online behavior influence the ads we see?
- **Explain** why it's important to "own" your digital footprint. What steps can individuals take to actively manage and shape their digital footprint in a positive way?
- **Analyze** the frequency of key terms related to digital footprints (e.g., "online trail," "digital footprint," "social media") in the script. Calculate the percentage distribution of these terms and discuss how their prevalence reflects the thematic focus of the script.
- **Compare** the size of digital footprints between different characters mentioned in the script. If Character A posts an average of 10 times per day on social media and Character B posts 5 times per day, calculate the difference in the size of their digital footprints over a month.
- **Create** a bar graph illustrating the growth of digital footprints over time, based on the information provided in the script. Use numerical data to plot the increase in online activity and discuss how this growth is reflected in the narrative of the script.
- If a social media platform retains user data for an average of 7 years, calculate the probability that a specific post will still be accessible online after 5 years. Discuss the implications of long-term data retention on individuals' digital footprints.
- Research shows that targeted advertising based on digital footprints can increase click-through rates by 50%. If a company targets ads to users with a digital footprint size of over 100 posts per month, calculate the expected increase in ad engagement.
- **Interpret** the statistical trends in digital footprint growth presented in the script as symbolic representations of societal changes. How do numerical data on online activity contribute to the narrative's exploration of identity, privacy, and technology?
- **Develop** a mathematical model to predict the future size of a person's digital footprint based on their current online activity. Use historical data on posting frequency and data retention rates to construct the model and discuss its limitations and assumptions.
- **Calculate** the potential risk of privacy breaches based on the size of a person's digital footprint and the likelihood of data retention by online platforms. Discuss ethical implications of data privacy in the context of the script's exploration of online identity.
- Combine mathematical analysis of digital footprints with literary interpretation of character development to explore the theme of online reputation in the script. How do numerical data on online activity intersect with language and narrative to shape characters' identities?
- Critically **evaluate** strategies for managing digital footprints presented in the script from both mathematical and literary perspectives. How do quantitative considerations of data retention intersect with qualitative discussions of privacy and self-representation?

Reference 4: Around the world in idioms

Mathematics approach

- Can mathematical analysis accurately capture the cultural significance of idiomatic language?

Language and Literature approach

- Using reference 4 **discuss** how the use of idioms in different countries might affect our interconnectedness.
- How might the interpretation of idiomatic expressions vary between native and non-native speakers of a language?
- What role does language play in shaping perceptions of truth and deception across different cultures?
- How can idiomatic expressions sometimes blur the truth?

Combined approach

- Can idiomatic expressions be mathematically sound?
- Do idiomatic expressions from around the world promote or hinder the spread of fake news?
- Can idiomatic expressions be used in logic?

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

Mathematics approach

- **Find** the number of minutes it takes for false information to reach 20,000 unique users.
- **Find** the category with the greatest number of shares from the 7 categories found in Reference 5.
- **Explain** how Mathematics plays a role in delivering data, facts and conclusions.
- **Compare and contrast** the number of shares for false information among the 7 categories.
- **Suggest** how technology can be used to create convincing yet false content, then suggest solutions to stop this.
- If the number of shares of a false news article on social media doubles every hour, and there were initially 100 shares, how many shares will there be after 6 hours?
- If a false news article is shared by 10% of the people who view it, and it reaches 1000 people initially, how many people are likely to share it?
- If false news spreads through a network at a rate of 5 new shares per minute, and it takes 30 minutes for a false news article to reach 100 shares, how long will it take to reach 500 shares?
- **Compare** the spread of a false news article with the spread of a true news article. If the false news article gains 100 shares in the first hour and the true news article gains 50 shares in the same time period, what is the ratio of their growth rates?
- **Create** a line graph representing the spread of false news over time, starting from an initial number of shares. Use time (in hours) on the x-axis and number of shares on the y-axis.
- If a social media platform implements a fact-checking system that reduces the spread of false news by 20%, how many shares of false news would be prevented if it had initially reached 1000 people?
- If it takes 10 minutes for a false news article to be flagged as false after it has been shared, and it is being shared at a rate of 50 shares per minute, how many shares will it have by the time it is flagged?
- If false news spreads through a network with an average of 5 connections per person, and each connection shares the news with 2 other people, how many people will have seen the false news after 3 rounds of sharing starting with 100 initial viewers?
- If the number of shares of a false news article triples every 2 hours, and there were initially 50 shares, how many shares will there be after 6 hours?
- If a correction to false news is shared by 20% of the people who saw the false news, and it reaches 200 people initially, how many people are likely to share the correction?

Language and Literature approach

- **Examine** the effectiveness of the rhetorical devices within Reference 5, while determining how it affects the way news is spread.
- **Analyze** the narrative structure of a fictional story about the spread of false news. How does the author use plot development, character interactions, and conflict resolution to explore the consequences of misinformation on individuals and society?
- **Identify** the central themes in a novel or short story that revolves around the spread of false news. How does the author use language, imagery, and symbolism to convey themes such as truth, deception, manipulation, and trust?
- **Examine** the characterization of individuals involved in spreading false news in a literary work. How do their motives, beliefs, and actions contribute to the portrayal of the ethical dilemmas surrounding misinformation?
- **Consider** the narrative perspective used in a literary text about false news. How does the choice of point of view influence the reader's understanding of the characters' motivations, the reliability of information, and the impact of misinformation on society?
- **Identify** examples of rhetorical devices (e.g., irony, exaggeration, satire) used in a poem or essay that critiques the spread of false news. How do these language devices enhance the author's argument or commentary on the consequences of misinformation?
- **Interpret** the symbolism of key elements or events in a literary work that symbolize the spread of false news. How do symbols such as mirrors, masks, or shadows represent the duplicity and distortion inherent in misinformation?
- **Compare and contrast** the portrayal of false news in different literary genres (e.g., dystopian fiction, satire, historical fiction). How do authors from different genres use language and narrative techniques to address the themes of truth and deception?

- **Explore** the intersection of language and psychology in a literary analysis of the spread of false news. How do cognitive biases, persuasion techniques, and emotional appeals contribute to the effectiveness of misinformation campaigns depicted in literature?
- Critically **evaluate** the portrayal of false news in contemporary media and its influence on public perception. How do literary texts challenge or reinforce stereotypes, biases, and misconceptions about the spread of misinformation in society?
- **Discuss** the ethical responsibilities of writers, journalists, and storytellers in addressing the issue of false news in literature. How can authors use their platform to educate readers about the dangers of misinformation while respecting artistic freedom and creative expression?

Combined approach

- **Justify** why false information is spread faster than true information.
- Using statistical data, **analyze** the rate of false news dissemination on social media platforms over a certain period. How does the numerical data align with the narrative depiction of false news spread in literary works?
- **Compare** the exponential growth rate of false news shares on social media platforms with the plot development in a literary work that explores the consequences of misinformation. How do mathematical trends reflect the thematic exploration of truth and deception in the narrative?
- **Create** a line graph illustrating the increase in shares of a false news article over time, based on data provided in a literary text. Analyze the graph to identify patterns and trends in false news propagation, considering both mathematical and narrative perspectives.
- **Calculate** the probability of an individual encountering false news on social media, based on factors such as posting frequency, user engagement, and content visibility algorithms. How does the mathematical probability align with the portrayal of false news exposure in literary texts?
- **Interpret** statistical trends in false news dissemination as symbolic representations of societal dynamics in a literary work. How do numerical data on misinformation spread intersect with language and narrative to shape characters' experiences and perceptions of truth?
- Critically **evaluate** the effectiveness of mathematical models and algorithms designed to detect and combat false news propagation on online platforms. How do language and literary devices in fictional texts reflect the challenges and limitations of these strategies?
- Engage in a discussion about the ethical considerations surrounding the spread of false news, drawing on both mathematical analyses of information dissemination and literary explorations of truth and integrity. How do mathematical algorithms and human storytelling intersect in addressing ethical dilemmas related to misinformation?
- Analyze the symbolic representation of false news as a metaphor for broader societal issues in literary works. How do numerical data on false news spread contribute to the allegorical significance of misinformation as a destructive force in society?
- **Explore** the role of language analysis and mathematical algorithms in detecting patterns of misinformation in online content. How do linguistic features and mathematical patterns intersect in identifying and debunking false news narratives?
- **Interpret** the narrative structure and language choices in fictional texts that depict the spread of false news. How do mathematical analyses of data on misinformation dissemination inform literary interpretations of characters' motivations, conflicts, and ethical dilemmas?
- **Explain** the critical thinking skills that can be applied to evaluate the credibility and reliability of information presented in the media.

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

Mathematics approach

- If out of 1000 websites analyzed, 250 were identified as disseminating disinformation, what is the percentage of websites involved in spreading disinformation?
- If the number of disinformation websites increased from 250 to 500 over a period of 6 months, what is the average monthly rate of growth in the number of disinformation websites?
- If the report identifies three main methods of monetizing disinformation - display advertising, affiliate marketing, and subscription services - and 40% of disinformation websites use display advertising, 30%

use affiliate marketing, and the rest use subscription services, how many websites use subscription services?

- **Create** a pie chart illustrating the distribution of monetization methods among disinformation websites mentioned in the report. Use percentages to represent the proportion of websites using each monetization method.
- If the probability of a disinformation website using display advertising is 0.4 and the probability of using affiliate marketing is 0.3, what is the probability that a randomly selected disinformation website uses either display advertising or affiliate marketing?
- If the average monthly revenue generated by a disinformation website through display advertising is \$1000 and the average revenue from affiliate marketing is \$1500, estimate the total monthly revenue generated by all disinformation websites mentioned in the report.
- If the number of disinformation websites using display advertising decreased by 20% over the past year, while the number using affiliate marketing increased by 30%, what is the net change in the total number of disinformation websites using these two monetization methods?
- If the report indicates that websites using affiliate marketing tend to produce more sensationalized content compared to those using display advertising, analyze the correlation between monetization methods and the dissemination of disinformation.
- If it costs \$5000 to remove a single disinformation website from online platforms, and each website generates an average revenue of \$2000 per month, calculate the net benefit of removing all disinformation websites mentioned in the report.
- **Develop** a mathematical model to predict future trends in the monetization of disinformation based on the data provided in the report. Use historical data on the growth of disinformation websites and changes in monetization strategies to forecast future patterns.

Language and Literature approach

- **Analyze** the language used in the report to describe the monetization of disinformation. How does the choice of words and phrases contribute to the report's tone and persuasive effect? Provide examples to support your analysis.
- **Identify** the central themes explored in the report regarding the monetization of disinformation. How are these themes developed through language, structure, and narrative techniques? Provide textual evidence to support your analysis.
- **Examine** the portrayal of individuals and entities involved in the monetization of disinformation in the report. How are these actors characterized in terms of their motivations, methods, and impact on society?
- Consider the narrative perspective used in the report to present information about the monetization of disinformation. How does the choice of perspective influence the reader's understanding of the issue and the credibility of the report?
- **Identify** examples of language devices (e.g., metaphor, irony, hyperbole) used in the report to convey the severity and consequences of monetized disinformation. How do these devices enhance the report's argument and engage the reader?
- Engage in a discussion about the portrayal of monetized disinformation in contemporary media and its influence on public perception. How do language choices in the report intersect with broader societal attitudes?
- **Compare and contrast** the language and narrative techniques used in the report with those employed in fictional or journalistic works that explore the theme of disinformation. How do different genres approach the topic of monetization and its impact on truth and trust?
- **Discuss** the ethical responsibilities of writers, researchers, and journalists in reporting on the monetization of disinformation. How can language and narrative strategies be used to raise awareness and combat the spread of misinformation while maintaining journalistic integrity?
- Interpret the symbolism of key terms or concepts used in the report to represent the monetization of disinformation (e.g., "digital marketplace," "information economy"). How do these symbols deepen the reader's understanding of the issue and its implications?
- Critically **evaluate** the portrayal of monetized disinformation in the report, considering potential biases and agendas that may influence the language and framing of the information presented. How does the report navigate the balance between objectivity and advocacy in addressing the issue?

- Using reference 6, analyse the use of techniques in Exposing the Monetization of disinformation and their effect on the reader.

Combined approach

- **Analyze** the frequency of key terms related to the monetization of disinformation in the report. Calculate the percentage distribution of these terms and discuss how their prevalence reflects the thematic focus of the report.
- **Compare** the rate of growth in the number of disinformation websites discussed in the report with the narrative development of the spread of misinformation in a fictional work. How do mathematical trends align with the thematic exploration of truth and deception in the literary narrative?
- **Create** a line graph illustrating the increase in the number of disinformation websites over time, based on data provided in the report. Analyze the graph to identify patterns and trends in disinformation propagation, considering both mathematical and narrative perspectives.
- Calculate the probability of an individual encountering disinformation online, based on factors such as posting frequency, user engagement, and content visibility algorithms discussed in the report. How does the mathematical probability align with the portrayal of disinformation exposure in literary texts?
- **Interpret** statistical trends in disinformation dissemination as symbolic representations of societal dynamics in a fictional work. How do numerical data on misinformation spread intersect with language and narrative to shape characters' experiences and perceptions of truth?
- Critically **evaluate** the effectiveness of mathematical models and algorithms designed to detect and combat disinformation spread on online platforms, as discussed in the report. How do language and literary devices in fictional texts reflect the challenges and limitations of these strategies?
- Engage in a discussion about the ethical considerations surrounding the spread of disinformation, drawing on both mathematical analyses of information dissemination and literary explorations of truth and integrity. How do mathematical algorithms and human storytelling intersect in addressing ethical dilemmas related to misinformation?
- **Analyze** the symbolic representation of disinformation as a metaphor for broader societal issues in a fictional work. How do numerical data on disinformation spread contribute to the allegorical significance of misinformation as a destructive force in society?
- **Explore** the role of language analysis and mathematical algorithms in detecting patterns of misinformation in online content. How do linguistic features and mathematical patterns intersect in identifying and debunking disinformation narratives?
- **Interpret** the narrative structure and language choices in fictional texts that depict the spread of disinformation. How do mathematical analyses of data on misinformation dissemination inform literary interpretations of characters' motivations, conflicts, and ethical dilemmas?
- **Outline** the methods and importance of understanding texts from the perspective of their original context and how can we understand them from a contemporary context?
- **Evaluate** how we can compare the creator's intention with the impact of the online interactions with the text in an interconnected and digital world and what responsibility creators now must consider.
- **Explain** the role of language and literature in helping present mathematical and statistical media analyses in a more understandable way to a larger audience.

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

Mathematics approach

- If a surveillance system collects data from 1000 cameras every minute, and each camera captures 30 frames per second, how many frames of data are collected in one hour?
- If the amount of data collected by a regulation system increases by 25% annually, and it currently stores 1 petabyte (PB) of data, what will be the storage capacity in 5 years? (1 PB = 1,000,000 GB)
- If a regulatory system detects violations with an accuracy of 90%, and there are 100 potential violations in a dataset, how many violations are likely to be correctly identified?
- If the effectiveness of a regulatory system doubles every year, and it initially reduces violations by 10%, what is the percentage reduction in violations after 3 years?
- **Create** a bar graph illustrating the distribution of regulatory violations over time, based on data collected by a surveillance system. Use time (in months or years) on the x-axis and the number of violations on the y-axis.

- If implementing a regulation system costs \$1,000,000 upfront and saves \$500,000 per year in regulatory enforcement costs, calculate the net savings after 5 years, considering a discount rate of 5% per year.
- If the compliance rate with regulations increases by 10% annually due to the implementation of a regulation system, and the initial compliance rate is 50%, what will be the compliance rate after 4 years?
- **Analyze** the correlation between the number of regulatory violations detected and the effectiveness of a regulation system. Use statistical methods to determine whether there is a significant relationship between these variables.
- **Develop** a mathematical model to predict future trends in regulatory compliance and enforcement based on historical data collected by a regulation system. Consider factors such as population growth, technological advancements, and regulatory changes.
- Engage in a discussion about the ethical implications of implementing surveillance and regulation systems. How can mathematical models be used to optimize regulatory effectiveness while minimizing privacy concerns and social inequalities?

Language and Literature approach

- **Analyze** the language used in discussions surrounding regulation systems and technology. How do policymakers, activists, and stakeholders employ rhetorical strategies to advocate for or against surveillance measures? Provide examples to support your analysis.
- **Identify** the central themes in literary works that explore the consequences of technology-driven regulation systems. How are themes such as privacy, surveillance, power, and resistance developed through language, imagery, and symbolism?
- **Examine** the portrayal of characters associated with regulation systems in literary texts. How are regulators, activists, hackers, and individuals affected by surveillance characterized in terms of their motivations, beliefs, and conflicts?
- Consider the narrative perspective used in literary works to depict regulation systems and technological surveillance. How does the choice of perspective influence the reader's understanding of the complexities of surveillance culture and its impact on society?
- **Identify** examples of language devices (e.g., metaphor, irony, symbolism) used in literary texts to convey the implications of regulation systems and technological surveillance. How do these devices enhance the reader's engagement and critical reflection on the subject matter?
- Engage in a discussion about the portrayal of regulation systems and technological surveillance in contemporary media and literature. How do language choices in literary texts intersect with broader societal attitudes towards technology, privacy, and governance?
- **Compare and contrast** the portrayal of regulation systems in dystopian literature with real-world examples of surveillance technology. How do literary depictions of surveillance societies reflect and critique contemporary issues related to privacy and control?
- **Discuss** the ethical dilemmas presented in literary works that explore regulation systems and technological surveillance. How do authors navigate questions of individual autonomy, government oversight, and social justice in the context of technological advancements?
- **Interpret** the symbolism of key elements or motifs used in literary texts to represent regulation systems and technological surveillance (e.g., cameras, data, algorithms). How do these symbols deepen the reader's understanding of the power dynamics and ethical implications of surveillance culture?
- Critically **evaluate** the portrayal of regulation systems and technological surveillance in literature, considering potential biases and agendas that may influence the depiction of surveillance technologies and their societal impact.
- **Discuss** how we might be regulated as individuals through the potential power of technology.
- **Evaluate** how the boundaries we have as humans have changed.
- **Analyze** the visual techniques used and how they may affect people's perspective on privacy in society. Connect to the concept of self-expression.

Combined approach

- Analyze the frequency of key terms related to regulation systems and technology in literary texts. Calculate the percentage distribution of these terms and discuss how their prevalence reflects the thematic focus of the texts.
- Compare the rate of narrative development in literary works that explore regulation systems with statistical trends in technological surveillance discussed in reports or studies. How do mathematical

analyses of data align with the thematic exploration of privacy, control, and resistance in the literary narrative?

- **Create** a line graph illustrating the increase in the use of surveillance technology over time, based on statistical data, alongside a bar graph illustrating the thematic intensity of surveillance themes in literary texts. Analyze how these graphs intersect and inform each other.
- **Calculate** the probability of encountering themes related to technological surveillance in literary texts, based on factors such as genre, author background, and publication date. How do mathematical probabilities align with the portrayal of surveillance culture in literature?
- Interpret statistical trends in technological surveillance as symbolic representations of societal dynamics in literary works. How do numerical data on surveillance intersect with language and narrative to shape characters' experiences and perceptions of control and resistance?
- Critically **evaluate** the effectiveness of mathematical models and algorithms used in technological surveillance, as discussed in reports or studies, alongside literary representations of surveillance systems. How do language and literary devices in fictional texts reflect the challenges and limitations of surveillance technology?
- Engage in a discussion about the ethical considerations surrounding regulation systems and technological surveillance, drawing on both mathematical analyses of surveillance data and literary explorations of privacy, power, and social justice.
- **Interpret** the symbolic representation of surveillance technology in literary texts through mathematical analysis. How do numerical data on surveillance methods and impacts contribute to the allegorical significance of surveillance as a tool of control and oppression?
- Explore the role of language and mathematical analyses in depicting resistance to surveillance culture in literary texts. How do linguistic features and statistical trends intersect in representing characters' efforts to challenge and subvert surveillance systems?
- **Interpret** the narrative structure and language choices in literary texts that incorporate mathematical themes related to surveillance and regulation systems. How do mathematical analyses of data inform literary interpretations of characters' motivations, conflicts, and ethical dilemmas?

Sample IDU Assessment Questions

Task 1

Using Reference 1, Compare and contrast the synthesis of Language and Literature and Mathematics in "the propaganda of advertising" In your answer, you must:

- Analyse the use of English Language and Literature and Mathematics in the video.
- Explain the strengths and weaknesses of each synthesis.
- Write an evaluative conclusion.

Task 2a

Using your new interdisciplinary understanding, discuss the challenges and related solutions that the faster spread of information has caused. In your response

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

Task 2b

You are a student combatting the spread of fake news in your school community. From your understanding of concepts in Mathematics and Language and Literature, write an article for your school paper informing students on what strategies they can use to help combat the spread of fake news. In your article you must:

- Identify three strategies
- Interpret the references to justify these strategies
- Support your debate with Mathematical and English concepts found in the references.
- Discuss how your new interdisciplinary knowledge enables future action.

This is the question that I will use to make them connected with the topic:

Q1 Purpose: We combine Language and Literature with Mathematics to help students understand “Propaganda Techniques”

Considering reference 1, **analyse** the synthesis of language and literature, and mathematics to meet the purpose.

In your answer, you must:

- bring out the essential elements of disciplinary knowledge
- provide strengths of the interdisciplinary synthesis
- provide limitations of the interdisciplinary synthesis
- provide evidence from the pre-release material.

1. **(Criterion B) Create** an informative poster that synthesizes language and literature and mathematics to educate your school community about the dangers of leaving a digital footprint. You must also
 - explain how your poster communicates interdisciplinary knowledge
 - provide evidence to support your answer from the pre-release material.
2. **Analyse** the synthesis of Language & Literature and Mathematics to meet the purpose. (12marks)

PURPOSE: Communication has evolved over a period through the digital world to control our choices. (10-12marks) The student fully analyses by **explaining** all four of the points below:

- essential elements of disciplinary knowledge
- strengths of the interdisciplinary synthesis
- limitations of the interdisciplinary synthesis
- **three** pieces of supporting evidence from the pre-release material.

3. **Based on** your new interdisciplinary understanding, **create** a blog to be a more informed digital citizen for your school website. (12marks).

The student **explains**, explicitly using evidence from the pre-release material:

- one example of their new interdisciplinary understanding
- how this example can enable future action in the school community
- a second example of their new interdisciplinary understanding
- how this example can enable future action in the school community.

- (Criterion C) With reference to the pre released material (Reference source 2 and 7), Discuss how the challenges and solutions are provided to build an interconnected society. (6)
- (Criterion A) Using your understanding of the pre-release material(Reference source 4 and 5, evaluate the synthesis of language and literature and mathematics.

In your answer you must:

- analyse the use of mathematics and english.
- Explain the strengths and weakness of each synthesis
- Give an evaluative conclusion.(12)

1. (Criterion B) As the head of a communication technology organization, you have brought out a new product/service to assist the government in maintaining proper surveillance to enhance law and order. **Create** the transcript of a video advertisement that synthesizes language and literature and mathematics to promote this upcoming technological product/service. Your response must
 - ☐ Include a clear description of the product/service and its use-case, addressing audience apprehensions
 - ☐ Include its benefits and limitations
 - ☐ Include at least two techniques of persuasive advertising
 - ☐ Depict a synthesis of both disciplines

2. C

3. (Criterion A) Using your understanding of the pre-release material, evaluate the synthesis of language and literature and mathematics in promoting the product in the following advertisement – **Hello Apple Vision Pro**

<https://www.youtube.com/watch?v=IY4x85zqoJM>

4. (Criteria B & C) Imagine that you are a journalist who has done extensive research about the advancement of technology in the field of communication. **Create** an informative article tracing the evolution of communication through the ages. Discuss the benefits and possible dangers of the upcoming advancements. Your response must –
 - a. Present relevant evidence from the pre-release material
 - b. Suggest at least two advantages and two disadvantages of the upcoming technology
 - c. Present a synthesis of language and literature and mathematics

5. **Criterion A**

- a. Evaluate and reflect on how the advent of technology has led to the exponential rise of misinformation.

6. (Criterion A -6Marks)

Using Pre-release material (Reference 5& 6. Disinformation: True/false information)

- ANALYSE different ways of modelling can be used to examine and optimize strategies for combating the spread of disinformation.
- Identify two categories of which FALSE news is spreading faster and framing the mindset.

7. **Criterion B**

- a. Create a video transcript for an advertisement for eco-friendly AC's that offers 0% CFC emissions.
 - i. Using reference 1, employ at least two propaganda techniques
 - ii. Using ref 6, Decide on choosing an advertisement platform for promoting the product



8. **Criterion A**

- a. Evaluate and reflect on how the advent of technology has led to the exponential rise of misinformation.

