**КАРТА МОДУЛЯ 1**

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| МОВЛЕННЄВІ НАВИЧКИ | ЗНАТИ/ВМІТИ | Book 1  Professional English in Use. Engineering. Technical English for Professionals. Author: Mark Ibbotson. Cambridge University Press, 2009 – p. 148  <https://archive.org/details/ProfessionalEnglishInUse/page/n31/mode/2up> | Book 2  Professional English in Use ICT. Authors: Elena Marco Fabre, Santiago Remacha  Esteras, Cambridge University Press, 2007 – p. 118 | Open Sources |
| Reading  Vocabu-  lary | Ability to comprehend and extract information from complex technical documents, manuals, specifications, and research papers related to automation and robotics. Understanding schematics, blueprints, and diagrams commonly used in the field, including electrical and mechanical drawings.  A strong command of specialized vocabulary related to automation and robotics, including terms associated with sensors, actuators, programming languages, control systems, and specific components.  Ability to use specialized vocabulary with precision, ensuring that technical terms are employed correctly and in context.  Familiarity with industry-specific jargon used in automation and robotics to effectively communicate with professionals and understand technical documents. | **Drawings: types and scales.**   1. Drawing types and scales – p.8 2. Types of views used on drawings - p.8   **Design development.**  A. Initial design phase – p. 10  B. Collaborative development – p. 10  **Design solutions.**  A. Design objectives – p. 12  B**.** Design calculations – p. 12 |  | Types of Scales in Engineering Drawing: <http://4mechtech.blogspot.com/2015/07/types-of-scale-in-engineering-drawing.html>  Design Development- What is it? Is it worth it?  <https://www.linkedin.com/pulse/design-development-what-worth-jennifer-crawford> |
| Speaking | Ability to effectively present ideas, project proposals, and technical information in a clear and organized manner.  Skill in participating in technical discussions, team meetings, and conveying ideas within a group of professionals working in automation and robotics. | Drawings: types and scales – Over to you: p.9  Design development – Over to you: p.11  Design solutions – Over to you: p.13 |  |  |
| Grammar | Correct use of proper nouns, especially when referring to specific components, technologies, or brands within the engineering field in general and automation and robotics in particular.  Consistent and accurate use of verb tenses to convey the timing and sequence of events, especially in describing processes and procedures.  Ensuring that the subject and verb agree in number, especially when discussing multiple components or processes.  Effective use of adjectives and adverbs to provide additional details and precision in technical descriptions.  Demonstrating an ability to vary sentence structure for a more engaging and effective presentation of information.  Proficiency in constructing conditional sentences to describe hypothetical situations or requirements in automation and robotics. | English Grammar in Use. Raymond Murphy. – Cambridge University Press, 2019. – P. 307.  1. The Present Simple Tense. (Unit 2, p.4 - Ex. 2.1 – 2.5).  2. The Past Simple Tense. (Unit 5, p.10 - Ex. 5.1 – 5.5).  3. The Future Simple Tense. (Unit 21, p.42, 21.1 – 21.4; Unit 22, p.44, Ex. 22.1 –2.5).  4. Individual work: Questions, Auxiliary verbs (Units 48 – 51); Articles (Units 71 – 77); Plural form (Unit 78); Possessive case (Unit 71).  5. The Present Continuous Tense. (Unit 1, p.2 - Ex. 1.1 – 1.5).  6. The Past Continuous Tense. (Unit 6, p.12 - Ex. 6.1 – 6.4).  7 The Present Perfect Tense. (Unit 13, p.26 - Ex. 13.1 – 13.4).  8. The Past Perfect Tense. (Unit 15, p.30 - Ex. 15.1 – 15.5).  9. The Future Perfect Tense. The Future Continuous Tense. (Unit 24, p.48 - Ex. 24.1 – 24.2).  10. Individual work: Numerals. Real condition (Unit 25, p.50 - Ex. 25.1 – 25.4). Irregular verbs (Appendix 1, p. 274).  11. The Future-in-the-Past (<https://grammarway.com/ua/future-in-the-past>), Ex.: https://test-english.com/grammar-points/b2/future-in-the-past/  12. Individual work: Pronouns (Units 81 – 82, p. 162 – 164); Adjectives, Adverbs (Units 97 – 100, p. 194 – 200); Degrees of comparison (Units 104 – 107, p. 208 – 214); |  |  |
| Writing | Adherence to consistent technical writing style, including formatting conventions for documents, reports, and code documentation.  Avoiding unnecessary repetition and redundancy in technical writing to enhance clarity. | **Drawings: types and scales**  Ex. 1.1, 1.2, 1.3, 1.4 – p.9  **Design development.**  Ex. 2.1, 2.2, 2.3, 2.4 – p.11  **Design solutions.**  Ex. 3.1, 3.2, 3.3, – p.13  1. Write an essay analyzing the different stages of the design development process. Discuss the importance of each stage, common challenges, and the role of creativity in design.  2. Choose a well-known design project or product. Write a case study that explores the development process, challenges faced, and the impact of the design on the intended audience or users. | 3. Conduct an interview with a professional designer. Write an article or report summarizing the interviewee's insights into their design development process, sources of inspiration, and advice for aspiring designers. |  |
| Listening | Ability to understand complex lectures, presentations, and discussions on topics related to automation and robotics.  Following Instructions: Capability to accurately follow spoken instructions related to technical tasks and procedures. |  |  | 1) Types of Scales in Engineering Drawing  <https://www.youtube.com/watch?v=_VktSY6SIH0>  2) What is Design Development?  <https://www.youtube.com/watch?v=st_jqk-zdSw>  3) Rapid Design Solutions Universal Robots UR16e Pallet Pool for 5-Axis mills  <https://www.youtube.com/watch?v=aEV8DTSa57U> |

**КАРТА МОДУЛЯ 2**

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| МОВЛЕННЄВІ НАВИЧКИ | ЗНАТИ/ВМІТИ | Book 1  Professional English in Use. Engineering. Technical English for Professionals. Author: Mark Ibbotson. Cambridge University Press, 2009 – p. 148 | Book 2 | Open Sources |
| Reading  Vocabula-ry | Ability to comprehend and extract information from complex technical documents, manuals, specifications, and research papers related to automation and robotics. Understanding schematics, blueprints, and diagrams commonly used in the field, including electrical and mechanical drawings.  A strong command of specialized vocabulary related to automation and robotics, including terms associated with sensors, actuators, programming languages, control systems, and specific components.  Ability to use specialized vocabulary with precision, ensuring that technical terms are employed correctly and in context.  Familiarity with industry-specific jargon used in automation and robotics to effectively communicate with professionals and understand technical documents. | **Horizontal and vertical measurements.**  A. Linear dimensions – p.14  B. Level and plumb – p.14  **Locating and setting out.**  A. Centrelines and offsets – p.16  B. Grids – p.16  **Dimensions, numbers and calculations.**  A. Key dimensions of circles – p.18  B. Pipe dimensions – p.18  A. Precision and tolerance – p.20  B. Fit – p.20  A. Decimals and fractions – p.22  B. Addition, subtraction, multiplication and division – p.22  **Measurable parameters.**  A. Supply, demand and capacity– p.26  B. Input, output and efficiency – p.26 |  | 1. Horizontal and vertical measurements.  <https://slideplayer.com/slide/4645875/>  <https://www.scribd.com/presentation/366886458/Horizontal-and-Vertical-Measurements-1?utm_medium=cpc&utm_source=google_pmax&utm_campaign=Scribd_Google_Performance-Max_RoW_UGC&utm_term=&utm_device=c&gclid=CjwKCAiAsIGrBhAAEiwAEzMlC0NA4KrcT9wie9ZKJnTYN9294-0yqg8Ye2LFiNxOS1iVuw0VCeuFZxoCAXkQAvD_BwE> |
| Speaking | Ability to effectively present ideas, project proposals, and technical information in a clear and organized manner.  Skill in participating in technical discussions, team meetings, and conveying ideas within a group of professionals working in automation and robotics. | **Horizontal and vertical measurements.**  Over to you: p.15  **Locating and setting out.**  Over to you: p.17  **Dimensions, numbers and calculations.**  Over to you: p.19  Over to you: p.21  Over to you: p.23  **Measurable parameters**  Over to you: p.27 |  |  |
| Grammar | Correct use of proper nouns, especially when referring to specific components, technologies, or brands within the engineering field in general and automation and robotics in particular.  Consistent and accurate use of verb tenses to convey the timing and sequence of events, especially in describing processes and procedures.  Ensuring that the subject and verb agree in number, especially when discussing multiple components or processes.  Effective use of adjectives and adverbs to provide additional details and precision in technical descriptions.  Demonstrating an ability to vary sentence structure for a more engaging and effective presentation of information.  Proficiency in constructing conditional sentences to describe hypothetical situations or requirements in automation and robotics. | 1. Passive Simple. (Unit 41, p.82 - Ex. 41.1 – 41.4).  2. Passive Continuous. (Unit 42, p.84 - Ex. 42.1 – 42.4).  3. Passive Perfect. (Unit 42, p.84 - Ex. 42.1 – 42.4).  4. Розділи для самостійного вивчення: Past participle, Pronouns. (Unit 81 - 85).  5. The Present Perfect Continuous Tense. (Unit 9, p.18 - Ex. 9.1 – 9.4).  6. The Past Perfect Continuous Tense. (Unit 16, p.32 - Ex. 16.1 – 16.3).  7. Indirect Speech. (Unit 46, p.92 - Ex. 46.1 – 46.2).  8. Indirect Questions. (Unit 49, p.98 - Ex. 49.1 – 49.3).  10. Розділи для самостійного вивчення: Indirect Command. (Unit 47, p.94 - Ex. 47.1 – 47.3).  11. Sequence of Tenses. (<https://grammarway.com/ua/sequence-of-tenses>). Ex.: https://test-english.com/grammar-points/b1/review-verb-tenses-b1/  12. Розділи для самостійного вивчення: The Past Perfect Tense (Unit 15, p.32 - Ex. 15.1 – 15.3). |  |  |
| Writing | Adherence to consistent technical writing style, including formatting conventions for documents, reports, and code documentation.  Avoiding unnecessary repetition and redundancy in technical writing to enhance clarity. | **Horizontal and vertical measurements.**  Ex. 4.1, 4.2, 4.3, 4.4 – p.15  **Locating and setting out.**  Ex. 5.1, 5.2, 5.3 – p.17  **Dimensions, numbers and calculations**  Ex. 6.1, 6.2, 6.3 – p.19  Ex. 7.1, 7.2, 7.3 – p.21  Ex. 8.1, 8.2, 8.3, 8.4 – p.23  **Measurable parameters**  Ex. 10.1, 10.2, 10.3 – p.27  1. Write an informative essay defining measurable parameters. Explain their significance in scientific, technical, or business contexts. Provide examples to illustrate the concept. | 2. Write a case study on how measurable parameters are crucial in quality control within manufacturing processes. Explore examples of industries where precise measurements impact product quality. |  |
| Listening | Ability to understand complex lectures, presentations, and discussions on topics related to automation and robotics.  Capability to accurately follow spoken instructions related to technical tasks and procedures. |  |  | Measuring horizontal and vertical angels.  <https://www.youtube.com/watch?v=Mb2jbdqMJHA>  Surveying: Turning The Perfect Right Angle  <https://www.youtube.com/watch?v=SGwRas3pQGw> |

**КАРТА МОДУЛЯ 3 (II семестр)**

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| МОВЛЕННЄВІ НАВИЧКИ | ЗНАТИ/ВМІТИ | Book 1  Professional English in Use. Engineering. Technical English for Professionals. Author: Mark Ibbotson. Cambridge University Press, 2009 – p. 148 | Book 2  Professional English in Use ICT. Authors: Elena Marco Fabre, Santiago Remacha  Esteras, Cambridge University Press, 2009 – p. 118 | Open Sources |
| Reading  Vocabulary | Ability to comprehend and extract information from complex technical documents, manuals, specifications, and research papers related to automation and robotics. Understanding schematics, blueprints, and diagrams commonly used in the field, including electrical and mechanical drawings.  A strong command of specialized vocabulary related to automation and robotics, including terms associated with sensors, actuators, programming languages, control systems, and specific components.  Ability to use specialized vocabulary with precision, ensuring that technical terms are employed correctly and in context.  Familiarity with industry-specific jargon used in automation and robotics to effectively communicate with professionals and understand technical documents. |  | **Robots and automata.**  A. Robots and automata. – p.70  B. Uses of Robots. – p.70  C. Artificial Intelligence. – p.70 | Automata, Androids and Robots  <https://wepa.unima.org/en/automata-androids-and-robots/>  Robots of the future – easy reading  <https://openwingsangol.hu/robots-of-the-future-easy-reading/>  Robot  <https://www.britannica.com/technology/robot-technology>  Meet the robots at Reading: an introduction  <https://www.futurelearn.com/info/courses/begin-robotics/0/steps/2848>  Robots could learn human values by reading stories, research suggests  <https://www.theguardian.com/books/2016/feb/18/robots-could-learn-human-values-by-reading-stories-research-suggests> |
| Speaking | Ability to effectively present ideas, project proposals, and technical information in a clear and organized manner.  Skill in participating in technical discussions, team meetings, and conveying ideas within a group of professionals working in automation and robotics. |  | **Robots and automata.**  You and Computers – p. 71  1. Discussion: Ethical implications of using robots and automata in various aspects of life.  2. Interview with a Robot Designer. **(**The interview can cover topics such as the design process, challenges faced, and the future vision for robotics.)  3. Prepare and deliver a tech talk presentation on a specific aspect of robotics or automata. Topics can range from the use of robots in healthcare to the development of humanoid robots. |  |
| Grammar | Correct use of proper nouns, especially when referring to specific components, technologies, or brands within the engineering field in general and automation and robotics in particular.  Consistent and accurate use of verb tenses to convey the timing and sequence of events, especially in describing processes and procedures.  Ensuring that the subject and verb agree in number, especially when discussing multiple components or processes.  Effective use of adjectives and adverbs to provide additional details and precision in technical descriptions.  Demonstrating an ability to vary sentence structure for a more engaging and effective presentation of information.  Proficiency in constructing conditional sentences to describe hypothetical situations or requirements in automation and robotics. |  | English Grammar in Use. Raymond Murphy. – Cambridge University Press, 2019. – P. 307.  1. Simple Tenses (Unit 2, p 4 - 5; Unit 5, p.10 – 1; Units 19 – 23, p. 38 – 46.  2. Continuous Tenses (Units 3, p. 6, Unit 6, p. 12).  3. Perfect Tenses (Unit 7, p.14; Unit 9, p. 18; Unit 15, p.30; Unit 16, p.32.  4. Conditionals (I,II and wish  (Unit 37, p.74; Unit 38, p.76).  5. Some, Any, No, Every (Unit 84 - 85, p. 168 - 170).  6. Conditionals (III) (Unit 39, p. 78).  7. Indirect Commands.(Unit 47, p.94 - Ex. 47.1 – 47.3).  8. Розділи для самостійного вивчення: Much, Many, (a) little, (a) few. (Unit 86. p. 172, Ex. 86.1 – 86.5).  9. Modals: Can, May, Must. (Unit 26 - 30. p. 52 - 60, all ex-s).  10. Розділи для самостійного вивчення: Infititive (Units 53 – 57, p. 106 – 114). |  |
| Writing | Adherence to consistent technical writing style, including formatting conventions for documents, reports, and code documentation.  Avoiding unnecessary repetition and redundancy in technical writing to enhance clarity. |  | **Robots and automata.**  **Uses of robots.**  **Artificial Intelligence.**  Ex. 30.1, 30.2, 30.3 – p.71  1. Explore and write an essay on the societal impact of AI. Discuss its implications on employment, education, healthcare, and other sectors, considering both positive and negative aspects.  2. Write a reflective essay on the ethical considerations associated with the development and use of AI. Discuss issues such as bias in algorithms, privacy concerns, and the responsibility of AI developers.  3. Write a speculative essay on the future of AI. Discuss potential advancements, challenges, and the role AI might play in shaping various aspects of human life in the coming decades. |  |
| Listening | Ability to understand complex lectures, presentations, and discussions on topics related to automation and robotics.  Capability to accurately follow spoken instructions related to technical tasks and procedures. |  |  | 1) Automata: The Extraordinary "Robots" Designed Hundreds Of Years Ago | Mechanical Marvels | Timeline  <https://www.youtube.com/watch?v=6Nt7xLAfEPs> |

**КАРТА МОДУЛЯ 4**

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| МОВЛЕННЄВІ НАВИЧКИ | ЗНАТИ/ВМІТИ | Book 1  Professional English in Use. Engineering. Technical English for Professionals. Author: Mark Ibbotson. Cambridge University Press, 2009 – p. 148 | Book 2  Professional English in Use ICT. Authors: Elena Marco Fabre, Santiago Remacha  Esteras, Cambridge University Press, 2009 – p. 118 | Open Sources |
| Reading  Vocabulary | Ability to comprehend and extract information from complex technical documents, manuals, specifications, and research papers related to automation and robotics. Understanding schematics, blueprints, and diagrams commonly used in the field, including electrical and mechanical drawings.  A strong command of specialized vocabulary related to automation and robotics, including terms associated with sensors, actuators, programming languages, control systems, and specific components.  Ability to use specialized vocabulary with precision, ensuring that technical terms are employed correctly and in context.  Familiarity with industry-specific jargon used in automation and robotics to effectively communicate with professionals and understand technical documents. |  | **Intelligent Homes.**  A. Domotics. – p.72  B. Control devices and networking. – p.72  C. Automatic operations. – p.72  **Human-centred technologies.** | The Intelligent Home: Are We Ready to Move In?  <https://www.techslang.com/intelligent-home-are-we-ready-to-move-in/>  Smart Homes: Essential Technology  <https://sivoris.com/smart-homes-essential-technology/>  Creating human-centered technology for 2021 and beyond  <https://blogs.iadb.org/conocimiento-abierto/en/human-centered-technology-for-2021-and-beyond/> |
| Speaking | Ability to effectively present ideas, project proposals, and technical information in a clear and organized manner.  Skill in participating in technical discussions, team meetings, and conveying ideas within a group of professionals working in automation and robotics. |  | **Intelligent Homes.** Domotics. Control devices and networking. Automatic operations. Ex. 31.2 – p. 73  You and Computers – p. 73  **Human-centred technologies.** |  |
| Grammar | Correct use of proper nouns, especially when referring to specific components, technologies, or brands within the engineering field in general and automation and robotics in particular.  Consistent and accurate use of verb tenses to convey the timing and sequence of events, especially in describing processes and procedures.  Ensuring that the subject and verb agree in number, especially when discussing multiple components or processes.  Effective use of adjectives and adverbs to provide additional details and precision in technical descriptions.  Demonstrating an ability to vary sentence structure for a more engaging and effective presentation of information.  Proficiency in constructing conditional sentences to describe hypothetical situations or requirements in automation and robotics. |  | English Grammar in Use. Raymond Murphy. – Cambridge University Press, 2019. – P. 307.  1. Conditionals: Unit 37, p.74 – 37.1 – 37.4; Unit 38, p.76 – Ex. 38.1 – 38.4Unit 39, p. 78 – Ex. 39.1 – 39.4; Unit 40, p.80 – Ex. 40.1 – 40.5).  2. Розділи для самостійного вивчення: Gerund. (Units 52, 55 – 57).  3. Modals: Can, May, Must. (Unit 26 - 36. p. 52 - 68, all ex-s).  4. Розділи для самостійного вивчення: Unit 44, p.88; Unit 66, p.132. |  |
| Writing | Adherence to consistent technical writing style, including formatting conventions for documents, reports, and code documentation.  Avoiding unnecessary repetition and redundancy in technical writing to enhance clarity. | 1. Write an essay explaining the concept of intelligent homes, their key features, and the benefits they offer to residents. Include examples of smart home technologies and their impact on daily life.  2. Compare and contrast traditional homes with intelligent homes. Highlight the advantages and disadvantages of each, considering factors such as convenience, energy efficiency, and security.  3. Imagine you are trying to convince a friend or family member to embrace smart home technology. Write a persuasive letter outlining the advantages of intelligent homes and how it can enhance their lifestyle.  4. Create a technical document describing the installation and setup process of a specific smart home device or system. Include step-by-step instructions, diagrams, and troubleshooting tips.  5. Keep a reflective journal for a week, documenting your experiences with smart home devices. Reflect on how these technologies have affected your daily routine, comfort, and overall living experience. | **Prefixes.**  A. Common Prefixes – p. 76  B. Verb Prefixes – p.76  C. Prefixes cyber- and e- - p. 76  Ex. 33.1, 33.2, 33.3, 33.4 – p.77  You and Computers – p. 77  **Suffixes.**  A. Common Suffixes. – p.78  B. Word families – p. 78  C. We love “wares” – p. 78  Ex. 34.1, 34.2, 34.3, 34.4 – p.79  You and Computers – p. 79  **Compounds.**  A. Compound nouns. -p. 80  B. Compound adjectives. – p.80  Ex. 35.1, 35.2, 35.3, 35.4 – p.81  You and Computers – p. 81  Collocations.  A. What a collocation is. – p. 82  B. Some types of collocations. – p. 82  Ex. 365.1, 36.2, 36.3, 36.4 – p.83  You and Computers – p. 83 |  |
| Listening | Ability to understand complex lectures, presentations, and discussions on topics related to automation and robotics.  Capability to accurately follow spoken instructions related to technical tasks and procedures. |  |  | AM Intelligent Home & Fibaro  <https://www.youtube.com/watch?v=Q0jezcjLXbs> |

ПІДСУМКОВИЙ БАЛ

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| МОВЛЕННЄВІ НАВИЧКИ | МОДУЛЬ 1 | МОДУЛЬ 2 | МОДУЛЬ 3 | МОДУЛЬ 4 | ЕКЗАМЕНАЦІЙНА ОЦІНКА |
| ЧИТАННЯ |  |  |  |  |  |
| ГОВОРІННЯ |  |  |  |  |  |
| ГРАМАТИКА |  |  |  |  |  |
| ПИСЬМО |  |  |  |  |  |
| СЛУХАННЯ |  |  |  |  |  |

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| |  | | --- | | **Reading - Analyzing Information**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |

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| CATEGORY | **4** | **3** | **2** | **1** |
| **Identifies opinions** | Student accurately locates at least 5 opinions in the article and gives a clear explanation of why these are opinions, rather than facts. | Student accurately locates at least 4 opinions in the article and gives a reasonable explanation of why these are opinions, rather than facts. | Student accurately locates at least 4 opinions in the article. Explanation is weak. | Student has difficulty locating opinions in an article. |
| **Summarization** | Student uses only 1-3 sentences to describe clearly what the article is about. | Student uses several sentences to accurately describe what the article is about. | Student summarizes most of the article accurately, but has some slight misunderstanding. | Student has great difficulty summarizing the article. |
| **Identifies facts** | Student accurately locates at least 5 facts in the article and gives a clear explanation of why these are facts, rather than opinions. | Student accurately locates 4 facts in the article and gives a reasonable explanation of why they are facts, rather than opinions. | Student accurately locates 4 facts in the article. Explanation is weak. | Student has difficulty locating facts in an article. |
| **Relates Graphics to Text** | Student accurately explains how each graphic/diagram is related to the text, and accurately determines whether each graphic/diagram agrees with the information in the text. | Student accurately explains how each graphic/diagram is related to the text. | Student accurately explains how some of the diagrams are related to the text. | Student has difficulty relating graphics and diagrams to the text. |
| **Relates Graphics to Text** | Student accurately explains how each graphic/diagram is related to the text, and accurately determines whether each graphic/diagram agrees with the information in the text. | Student accurately explains how each graphic/diagram is related to the text. | Student accurately explains how some of the diagrams are related to the text. | Student has difficulty relating graphics and diagrams to the text. |
| **Identifies facts** | Student accurately locates at least 5 facts in the article and gives a clear explanation of why these are facts, rather than opinions. | Student accurately locates 4 facts in the article and gives a reasonable explanation of why they are facts, rather than opinions. | Student accurately locates 4 facts in the article. Explanation is weak. | Student has difficulty locating facts in an article. |