***Biology Lifetime Achievement Award***

*By: Emily Monaghan, David Kleiman and Nick Tsigaridis*

*Background Information:*

In order to complete the following assignment you must demonstrate proficiency in and understanding of the following concepts / skills:

1. The structure, function and properties of macromolecules
2. How macromolecules relate to life processes
3. An application of a macromolecule in technology or society
4. Demonstrate effective research and communication skills.

*Project Summary:*

You are a highly respected, tenured biochemistry professor at an Ivy League University and a long time lover of macromolecules. You have been selected to present a lifetime achievement award to a macromolecule of your choice.

***Part 1: Speech Outline***

*You will hand in a complete script of your speech.*

*Your 3-5 minute speech should include a fictional and creative description of the following:*

* The “early life” of your macromolecule.
  + A brief the history of the discovery of the molecule (eg. how and when the structure of the molecule was confirmed)
  + Development from monomer to polymer (including important reactions involved)
  + Final chemical structure including 3D conformation
* The “career” of your macromolecule.
  + Contribution to cell function, body function, etc. (explain how the structure determines its function)
  + List the variety of fields where the macromolecules applies
* One monumental achievement of your macromolecule
  + Choose one major application of the macromolecule as a focus of research. This can be a new technology, or application of technology revolving around your macromolecule (eg. novel drug development)

You must use AT LEAST 3 reputable sources and provide a complete bibliography in APA format.

***Part 2: Personified Model***

You will be presenting your award to a model of your macromolecule that you have built. This model MUST be structurally accurate but you are encouraged to be creative and make your model a cartoon-like character.

You may use any material you would like to construct your model. Please choose material wisely to accurately represent the components of the macromolecule you are building.

*Due Dates:*

Day 1 - Choose molecule and choose your presentation date.

Day 2 - Library research during class time.

Day 9 - Rough draft due. Peer editing in class.

Day 13 - Final copy of speech due.   
 - All students hand in final script on the first day of presentations.

Days 13 & 14 - Presentations. Models are to be handed in after your presentation.

*Peer Editing:*

On day 9 of this project, every student will be assigned a peer editor in class by your teacher. You will exchange your rough draft with your peer editor. Please ensure that you retain either a hard copy or soft copy duplicate of your rough draft.

The peer editor must complete the following by the end of the class:

1. Read the rough draft
2. In a different coloured pen (preferably red):
   1. Make corrections to grammar, spelling and format
   2. Highlight awkward wording. Make suggestions to improve flow.
   3. Correct content where applicable. Highlight questionable, or confusing information
3. Complete the peer editing rubric. Provide AT LEAST three overall comments as feedback for your peer. Your comments should be specific and constructive to help improve the quality of the speech.
4. Once complete, your teacher must sign the peer editing rubric.

***Biology Lifetime Achievement Award Project Planning***

|  |  |  |
| --- | --- | --- |
| **Day** | **Goals** | **Teacher Signature / Feedback** |
| Day 1 | Choose macromolecule : Choose presentation date:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| Day 2 | *Library Research* |  |
| Day 3 |  |  |
| Day 4 |  |  |
| Day 5 |  |  |
| Day 6 |  |  |
| Day 7 |  |  |
| Day 8 |  |  |
| Day 9 | ***Rough draft of script DUE!!!!!! (Peer editing in class)*** |  |
| Day 10 |  |  |
| Day 11 |  |  |
| Day 12 |  |  |
| Day 13 | ***Final copy of script DUE!!!!!***  PRESENTATION DAY (model due) |  |
| Day 14 | PRESENTATION DAY (model due) |  |

***Biology Lifetime Achievement Award Rubric*** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | R | 1 | 2 | 3 | 4 | Mark |
| ***Speech Script (Knowledge and Understanding)*** | | |  |  |  |  |
| Accuracy and thoroughness of information | - Content is brief and inaccurate  - Requirements are not met. | - Imbalance between fictional story and content.  - information about macromolecule history, structure, function and applications is inaccurate  - Key information is missing.  - Contains many gaps in info | - information about macromolecule history, structure, function and applications is partly accurate  - Some information is missing.  - Contains several gaps in info | - most or all information about macromolecule history, structure, function and applications is accurate and up to date  - Some information may be inaccurate or missing.  - may contain gaps in information | - All information about macromolecule history, structure, function and applications is accurate and up to date  - Topic is covered thoroughly. No required information missing | /10 |
| ***Speech Script (Communication)*** | |  |  |  |  |  |
| Spelling  Grammar | - spelling and grammar at an acceptable level | - Many spelling and grammar errors.  - poorly edited, or revisions not made. | - Some spelling and grammar errors.  - insufficient editing or revisions not made. | - few spelling and grammar errors.  - Thoroughly edited. | - No spelling and grammar errors.  - Thoroughly edited. | /2 |
| Clarity  Logical Flow  Creativity | - unclear  - illogical  - no creativity  - guidelines not followed | - hard to follow  - information is unclear (either not detailed enough or overly complex)  - lacks creativity | - at times hard to follow  - at times information is unclear (either not detailed enough or overly complex)  - shows some creativity | - easy to follow  - mostly understandable and information is clear  - shows good creativity  - brought to the level of your audience | - Easy to follow, understand and learn from  - highly creative and interesting and at the level of for your audience. | /10 |
| Bibliography | - not provided | - incomplete | - partially complete with format error(s) | - complete with format error(s) | - complete with proper format | /2 |
| ***Speech Presentation (Communication)*** | | |  |  |  |  |
| Delivery / Voice / Eye contact | - did not complete speech | - no interest in topic  - unprofessional  - audience not engaged  - may not have obeyed time limit  - Read directly from script (no eye contact) | - limited interest in topic  - at times not professional  - audience partially or not engaged  - may not have obeyed time limit  - mostly read directly from script | - shows interest in topic  - somewhat professional  - engaged audience  - slight deviation from time limit  - clear voice  - a bit of reading from script | - Shows enthusiasm and interest in topic.  - Very Professional  - Engaged audience  - Stayed within time limit  - clear voice  - Limited reading from script. | /10 |
| ***3D Model (Thinking and Inquiry)*** | |  |  |  |  |  |
|  | - not complete | - inaccurate structure of macromolecule  - 3D structure not evident  - model not be stable  - lacks creativity | - not completely accurate structure of macromolecule  - hard to see 3D structure  - model not be stable  - lacks creativity | - accurate visual representation of macromolecule  - hard to see 3D structure  - model may not be stable  - creative | - accurate visual representation of macromolecule  - materials effectively chosen to represent parts of macromolecule  - creative / interesting | /10 |
|  |  | Final Mark: | /10 K/U | / 24 C | / 10 I |  |

***Biology Lifetime Achievement Award Peer Editing Rubric***

Student’s name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Editor’s Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | R | 1 | 2 | 3 | 4 | Mark\* |
| ***Speech Script (Knowledge and Understanding)*** | | |  |  |  |  |
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| ***Speech Script (Communication)*** | | |  |  |  |  |
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| Clarity  Logical Flow  Creativity | - unclear  - illogical  - no creativity  - guidelines not followed | - hard to follow  - information is unclear (either not detailed enough or overly complex)  - lacks creativity | - at times hard to follow  - at times information is unclear (either not detailed enough or overly complex)  - shows some creativity | - easy to follow  - mostly understandable and information is clear  - shows good creativity  - brought to the level of your audience | - Easy to follow, understand and learn from  - highly creative and interesting and at the level of for your audience. | /10 |
| ***Comments:*** *Please provide at least 3 specific comments to help improve your peer’s speech.*  Teacher’s  Signature | | | | | | |

\* The marks allocated here are NOT used to calculate the final mark for the assignment. They are to be used exclusively as feedback.