Throughout the course of this year we’ve studied a multitude of organisms including viruses, bacteria, invertebrates, and plants. While studying these organisms three themes have persisted through our discussions – taxonomy, evolution, and ecology.

Your Final Project for the year is divided into two parts. Part 1 requires you to choose a species among the phylum’s we’ve learnt about this year. Once I’ve approved your choice, you will research the following learning objectives:

**PART 1**

**Taxonomy** – *(Processing and analyzing data and information)*

* Complete taxonomy and where it fits in the tree of life.

**Evolution** – *(Evaluating)*

* Where your organism fits on the time line of life on earth and it’s evolutionary history.
* Viruses & bacteria and your organism. Types of symbiosis etc.
* Behaviours and adaptations

**Ecology** – *(Communicating)*

* Your organism and its niche, roles within its ecosystem.
* Humans and your organisms – impact, relationships, etc. both direct and indirect.

The second part of this assignment requires you to demonstrate various curricular competencies through researching and evaluating the following student Inquires:

**PART 2**

*Questioning & Predicting:*

* How do changing climates, such as desertification of biomes, affect the organisms that live there?

*Evaluating:*

* Explore the social, ethical, & environmental implications of humans on evolution through artificial selection & genetic modifications.

*Planning & Conducting:*

* Design and experiment to determine the effects of temperature on the rate of coral growth.

*Applying & Innovating:*

* Through the study of viruses & bacteria, how might scientists find new and innovative ways to prevent the spread of future diseases?

***Final due date for the project is FRIDAY JUNE 14th, 2019.***

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Species: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| --- | --- | --- | --- | --- | --- |
|  | **Emerging** | **Developing** | **Proficient** | **Extending** | **Score** |
| **Taxonomy *–*** *Processing & Analyzing Info* | - Seeks and analyzes patterns, trends, and connections in data, including describing relationships with limited effectiveness.  - Construct, analyze, and interpret graphs, models, and/or diagrams with limited effectiveness. | - Seeks and analyzes patterns, trends, and connections in data, including describing relationships with some effectiveness.  - Construct, analyze, and interpret graphs, models, and/or diagrams with some effectiveness. | - Seeks and analyzes patterns, trends, and connections in data, including describing relationships with considerable effectiveness.  - Construct, analyze, and interpret graphs, models, and/or diagrams with considerable effectiveness. | - Seeks and analyzes patterns, trends, and connections in data, including describing relationships with a high degree of effectiveness.  - Construct, analyze, and interpret graphs, models, and/or diagrams with a high degree of effectiveness. |  |
| **Evolution** –  *Evaluating* | - Evaluate the validity and limitations of a model in relation to the phenomenon modelled with limited effectiveness.  - Consider the changes in knowledge over time as tools and technologies have developed with limited effectiveness. | - Evaluate the validity and limitations of a model in relation to the phenomenon modelled with some effectiveness.  - Consider the changes in knowledge over time as tools and technologies have developed with some effectiveness. | - Evaluate the validity and limitations of a model in relation to the phenomenon modelled with considerable effectiveness.  - Consider the changes in knowledge over time as tools and technologies have developed with considerable effectiveness. | - Evaluate the validity and limitations of a model in relation to the phenomenon modelled with a high degree of effectiveness.  - Consider the changes in knowledge over time as tools and technologies have developed with a high degree of effectiveness. |  |
| **Ecology -** *Communicating* | - Communicate scientific ideas and information, constructing evidence-based arguments and using appropriate scientific language with limited effectiveness. | - Communicate scientific ideas and information, constructing evidence-based arguments and using appropriate scientific language with some effectiveness. | - Communicate scientific ideas and information, constructing evidence-based arguments and using appropriate scientific language with considerable effectiveness. | - Communicate scientific ideas and information, constructing evidence-based arguments and using appropriate scientific language with a high degree of effectiveness. |  |
| **Questioning & Predicting** | - Not able to find or use data from reliable sources.  - Not able to draw conclusions consistent with data.  - Does not seek, analyze, or represent patterns and relationships among variables. | - Finds and uses data from some reliable sources.  - Draws conclusions somewhat consistent with data.  - Seeks, analyzes, and represents patterns and relationships among variables with some effectiveness. | - Finds and uses data from moderately reliable sources.  - Draws conclusions mostly consistent with data.  - Seeks, analyzes, and represents patterns and relationships among variables with considerable effectiveness. | - Finds and uses data from reliable sources.  - Draws conclusions consistent with data.  - Seeks, analyzes, and represents patterns and relationships among variables with a high degree of effectiveness. |  |
| **Evaluating** | - Does not identifiy bias and evaluates validity of data in primary and secondary sources thoroughly.  - Evaluates social, ethical, and environmental implications with limited effectiveness. | - Identifies bias and evaluates validity of data in primary and secondary sources somewhat thoroughly.  - Evaluates social, ethical, and environmental implications with some effectiveness. | - Identifies bias and evaluates validity of data in primary and secondary sources thoroughly.  - Evaluates social, ethical, and environmental implications with considerable effectiveness. | - Identifies bias and evaluates validity of data in primary and secondary sources very thoroughly.  - Evaluates social, ethical, and environmental implications with a high degree of effectiveness. |  |
| **Planning & Conducting** | - Asks a testable question answered through scientific inquiry with limited effectiveness.  - Does not formulate a hypothesis.  - Does not make predictions for an outcome. | - Asks a testable question answered through scientific inquiry with some effectiveness.  - Formulates one hypothesis.  - Makes one predictions for an outcome. | - Asks a testable question answered through scientific inquiry with considerable effectiveness.  - Formulates two hypotheses.  - Makes two predictions for an outcome. | - Asks a testable question answered through scientific inquiry with a high degree of effectiveness.  - Formulates multiple hypotheses.  - Makes multiple predictions for an outcome. |  |
| **Applying & Innovating** | - Does not find and use data from reliable sources.  - Cannot communicate scientific ideas and information. | - Finds and uses data from some reliable sources.  - Can communicate scientific ideas and information. | - Finds and uses data from mostly reliable sources.  - Clearly communicates scientific ideas and information. | - Finds and uses data from reliable sources.  - Clearly and concisely communicates scientific ideas and information. |  |
| **Presentation** | Poor layout and design. Some of content is typed, only 1 or 2 graphics, not clear, poor grammar. | Good layout. Mostly typed, 3-4 graphics, illustrate some points, at least 3 errors in spelling and grammar. | Good layout and design. Typed, at least 5 graphics, illustrate most points, 1 or 2 errors in spelling and | Professional layout and design. Typed, graphics illustrate each major point; clear, concise, correct writing. |  |
| **Sources** | 1-2 sources, not detailed information, not organized, citation incorrectly done. | 2-3 sources, some detailed information, organized, citation with one or two errors. | 4 sources, pretty detailed information, well organized, citation almost perfect. | At least 5 sources, very detailed information, extremely well organized, APA citation |  |
| **TOTAL** | **/36 marks** | | | | |