Topic 1.3 Test (Science 10)

**Summary:**

* Concept 1: DNA mutations produce genetic diversity within a population.
* Concept 2: Natural selection favours traits that make an organism better suited to its environment.
* ~~Concept 3: Natural selection can lead to the formation of new species.~~
* ~~Concept 4: Environmental factors can cause mutations.~~
* Concept 5: Humans select desired characteristics in organisms to be passed on to the next generation.

**Learning Map Criteria:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Relevance | Extending | Proficient | Developing | Emerging |
| ☑  Adaptations and Fitness | (Complete the Proficient and Developing standards, but to a high level of accuracy.) | Given a case study, analyze traits of an organism and explain how those traits affect fitness. Assess whether a trait would be considered an adaptation or not. | Define adaptations and fitness.  Explain, with examples, how adaptations and fitness are related to each other. | Recognize that DNA can cause heritable traits to be passed on through generations. |
| Selection and Evolution | Demonstrate a nuanced understanding of evolution by natural selection and artificial selection, avoiding common misconceptions. | Demonstrate a complete understanding of evolution by natural selection and artificial selection. Use this understanding to explain how adaptations have evolved over time.  Compare and contrast natural selection and artificial selection. | Recognize that heritable variation results from genetic variation, which originates from mutations.  List the four stages/requirements for evolution. Describe each, with examples.  Define evolution. Recognize examples of evolution. |  |

**Vocabulary:**   
*(Disclaimer: This is not meant to be an exhaustive list. Vocabulary words may appear on the test that are not in this list.)*

* Fitness
* Adaptation
* Heritable
* Trait
* Mutation
* DNA
* Evolution
* Population
* Individual
* Overproduction
* Variation
* Selection
* Artificial selection
* Natural selection
* Selective pressure
* Selective advantage

**Primary Study Material:**

* Topic 1.3 Powerpoint
* Topic 1.3 in Textbook: only concepts 1, 2, 5
* Topic 1.3 in Workbook: only concepts 1, 2, 5
* Topic 1.3 Checking Your Understanding Questions (pg 63 in textbook; answer key on website)
* Amoeba Sisters video on Natural Selection (link inside powerpoint)