**Assignment: Science and Technology Table**

Student name: Desmond Hughes

|  |  |
| --- | --- |
| **Questions** | **DNA Profiling** |
| What biotechnology did you select? Explain what it is and how it is used. | The biotechnology I selected and would like to learn more about is DNA profiling. DNA profiling is for identifying an individual based on their DNA. It can be used by collecting DNA from a crime scene and connecting it to the person that was associated with the crime. Profiling can be used to also identify victims. It can also be used to reveal relationships and connects in families. |
| Identify two scientific discoveries that had to take place before your selected biotechnology could be developed. | DNA profiling was first used in 1986.   1. genes were made up and stored DNA.   2. Gregor Mendel first discovered the basic principles of genetics, |
| Describe the two scientific discoveries that had to take place before your selected biotechnology could be developed. When and how did the discoveries that you described take place? | 1. In 1953 scientist discovered genes were made up and stored DNA.   2. In 1866 Gregor Mendel first discovered the basic principles of genetics, while experimenting with plants, and did so by crosspollinating peas. |
| Identify two technologies that had to exist before your selected biotechnology could be developed. | 1. Using postnatal and prenatal samples 2. Fred Griffith with mice using a pneumonia bacterium. |
| Describe the two technologies that had to exist before your selected biotechnology could be developed. How long have the technologies that you described existed? | 1. In 1966 a technique was used where postnatal samples and the prenatal samples, to determine the chromosomes aberrations in the fetus, from amniotic fluid. 2. In 1928 Fred Griffith experimented with mice and pneumonia, and watched how the mice carried the bacteria and how it affected them. Watching whether they died or live. |
| Identify and discuss two positives and two negatives of biotechnological advances. | Positive:  Using Biotechnology can improve our health, by coming up with medical advancements, and creating new opportunities. It can give us a better understanding of diseases and help to create treatments for those diseases.  Using Biotechnology also can help minimize and reduce the waste we produce. By using biodegradable materials, it allows us to reduce our carbon footprint  Negative:  Biotechnology can be turned into a weapon. It can destroy crops, and it can weaponize diseases.  Biotechnology can also be very expensive. |
| Are there any biotechnologies that you think should not be pursued? Why or why not? Explain your answer. | I think we should not pursue the action of biological weapons, for example anthrax, and plague. Biological weapons and warfare can cause large numbers of death in a little amount of time, and can lead to epidemics occurring and spreading. |

**References:**

*DNA profiling* (no date) *Science Learning Hub*. Available at: https://www.sciencelearn.org.nz/resources/1980-dna-profiling (Accessed: February 28, 2023).

DNAFit (2019) *The history of DNA testing and genetic science [infographic]*, *DNAFit*. DNAFit. Available at: https://www.dnafit.com/advice/dna-testing/history-of-dna-testing-and-genetic-science.asp (Accessed: February 28, 2023).

Soomro, byA. *et al.* (no date) *20+ pros and cons of biotechnology*, *Environment Buddy*. Available at: https://www.environmentbuddy.com/environment/20-pros-and-cons-of-biotechnology/ (Accessed: February 28, 2023).