My Extended Project Qualification

Initial ideas:

I have a few ideas related to my subjects that I have taken for a-level. For biology the idea of genetically engineering a plant to help it yield more and survive harsher climates was very intriguing to me so I decided to research it further to give ideas on how I could turn it into an EPQ topic. One thing that came up when I researched was about genetically engineering animals to give them benefits that would help us and the ethical rights and wrongs behind it. I think this can be very good for an EPQ topic as there are resources I can use and I can express both sides of the argument. I can talk about both for and against genetic modification on animals and plants. The other subject I was thinking about doing my EPQ topic on was physics, I enjoy some elements of physics such as radiation so I thought about how I can implement that into an EPQ topic, one question that I thought of is “Is nuclear energy worth relying on?” This question is wondering if the energy generated from nuclear isotopes worth creating radioactive waste that is buried underground until it decays. I could also link it in with a section about the effect of radiation on the body and how dangerous it actually is.

Now that I have decided on my biology topic, I have split it into two different parts:

* Genetically engineered plants
* Genetically engineered animals

For each part I will have a for and against with explanations.

Genetically engineered animals:

The process:

Firstly, the gene that the engineer wants to put into the animal has to be isolated, so that can be taken from a cell or artificially synthesised. Then the gene is combined with other genetic elements such as a promoter (**Promoter** sequences are DNA sequences that **define** where transcription of a gene by RNA polymerase begins. ... **Promoter** sequences **define** the direction of transcription and indicate which DNA strand will be transcribed; this strand is known as the sense strand) and a terminator (In genetics, a transcription **terminator** is a section of nucleic acid sequence that marks the end of a gene or operon in genomic **DNA** during transcription)

Bibliography

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| Information | Source |
| Definition of promoter | <https://www.nature.com/scitable/definition/promoter-259/#:~:text=Promoter%20sequences%20are%20DNA%20sequences,gene%20by%20RNA%20polymerase%20begins.&text=Promoter%20sequences%20define%20the%20direction,known%20as%20the%20sense%20strand>. |
| Definition of terminator | <https://en.wikipedia.org/wiki/Terminator_(genetics)#:~:text=In%20genetics%2C%20a%20transcription%20terminator,in%20genomic%20DNA%20during%20transcription>. |
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