Axon- Section 1

1. Finding the phenomenon

The phenomenon - how are memories related to listening to melodies. We have found many times that some long-lost memory is triggered whenever we listen to familiar music.
Uses → it can help optimize the learning process if we can find any frequency-amplitude relation for which things get embed along with the notes.

2. Understanding the state of art

No state of the art found for this with vague research.

3. Determining the basic ingredients

We need brain responses (EEG or whatever[I dont know the methods]) based on different frequencies, amplitudes, etc to see if we can find any case of long-term potentiation relating to learning a new thing [for example, turning head instinctively on the sound of something breaking]

4. Formulating mathematical hypotheses

If we find out long-term potentiation is happening faster in any exercise due to a specific set of amplitude, frequency, we can say that learning is increased due to this.

5. Selecting the toolkit

Toolkit to be used - MATLAB, python (matplotlib, numpy) to process the data and gain some insight into this.
Python (pytorch or tensorflow) - to create a model that could predict the best possible prediction of the amplitude and frequency. (we are only considering these two things as possible factors.

6. Planning model

Two approaches - 1> getting the predictions through brain eeg scans, 2> getting responses from user preferences.

7. Implementing Model

The outputs from both the models will be used to create one single model that will output the predicted tune for the day to learn.

8. Completing the Model

Model may be completed and later be infused with a music player app to test the result on a global scale.

9. Testing/Evaluating the Model

Using the model to get responses from test users whether they were helped with the predicted combination of amplitude and frequency. The model will be evaluated based on the responses.

10. Publishing the Model

Followup Question -

Experimental setup -

Subjects of treatment: both mice and human
Technique best suited - EEG as we need both the specimen alive and functioning to see the register of different kind of pain

Both humans and mice will be used for the experiment as mice will be better suited for interoreceptory pain as we can give certain chemicals to mice through food that can be used to give them mild and thus be noticed through an eeg.
Humans will be better suited for exteroceptory pain as they will be able to pinpoint the source of pain and give correct evaluation of the level of discomfort they are feeling.

Pain tolerance will be controlled by having different people take similar tests and taking the average of the level of pain noted by them.
Using these results, we can map external and internal pain and how the level of pain affects the spikes.