Features of a GOOD EVALUATION:

# Criterion 4: EVALUATION

## Aspect 1: Conclusion

*The conclusion answers the research question.*

*The trends & patterns in the data are described accurately.*

*There is specific reference to the data that supports the conclusion.*

*The conclusion is accurately compared to accepted scientific theory.*

*Scientific information in justification is entirely relevant.*

1. In the conclusion, you should discuss the results you obtained in relation to your hypothesis. Write a conclusion based on an interpretation of the gathered results. Conclusions supported by data are acceptable even if they seem to contradict existing theory.
2. Specifically refer to your calculations and/or graphs (graphs are called "Figures") to support your conclusion.
3. Do not forget to interpret the meaning of the slope of the line, or the intercepts, or the area under the curve, in relation to your hypothesis.
4. Students need to discuss whether systematic error or further random errors were encountered and the direction of any systematic error if any should be included (where values higher or lower than they should have been due to that specific error).
5. Compare your results with literature values if possible. This should be discussed and not just stated. The literature (e.g. text book, website) should be fully referenced.

## Aspect 2: Evaluation of Procedure (Strengths and Weaknesses)

*Limitations of the data, for example range or number of repeats, and sources of error are discussed with **precise** reference to issues in the method. (materials, equipment, time)*

*The impact the limitations and errors have on the conclusion are fully discussed*

1. In the evaluation you should evaluate the method used. Write about the main weakness of the method used and the weakness in the method of manipulation of data. Explain what worked well (and why) and what did not work well (and why).
2. Write about the sources of error, but do not include personal mistakes. Comment about the level of precision and accuracy. If your data has outliers, explain possible causes for these outliers.

## Aspect 3: Improvement and Extension

*Discusses (gives opinions supported by evidence) improvements which are realistic and which address the errors or limitations raised. Address each limitation individually and suggest an improvement.*

*Discusses realistic and relevant extensions to the investigation*

3. Suggest realistic improvements (that can be carried out in the school lab) to the investigation. These suggestions should relate directly to fixing the limitations in the method. Do not complain about inaccurate equipment or a small budget.

4. Discuss further investigations that are of interest and can be carried out and new questions that could be posed that have some connection to your IA research.