Speed of Sound lab – additional questions

1. Calculate the % error of your result. Find the absolute value of the difference between your result and the accepted value, then divide by the accepted value and change to a percentage.
2. Find the average of the class results, not including those that are obviously far from the accepted value.

Speed of Sound lab – rubric

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| --- | --- | --- | --- | --- | --- |
| **Category** | **Excellent (3)** | **Good (2)** | **Needs Improvement (1)** | **Factor** | **Teacher** |
| **Appearance and Format** | Report is typed or neatly written. Blue or black pen is used and no white-out was used. Titles are underlined in red with a ruler. Name, partner’s name, block and date are included on the top right of the first page. | One of the required items is missing or incomplete. | Two or more the required items are missing or incomplete. | **0** |  |
| **Purpose and Hypothesis** | Purpose is clearly stated. Hypothesized relationship between the variables and the predicted slope/intercepts are derived (if applicable) clearly and correctly. | Purpose is stated, but may be unclear. Hypothesized relationship between the variables and the predicted slope/intercepts are derived (if applicable) correctly but somewhat unclearly. | Purpose can not be understood or is not related to the experiment. Hypothesized relationship between the variables and the predicted slope/intercepts (if applicable) have been stated, but not derived. | **0** |  |
| **Procedure** | Procedure is specific and well-organized. Steps are easy to follow and read. Brief and includes all necessary information. | Procedure is well-written but not organized. Most steps are easy to follow and read. Includes almost all necessary information. | Procedure is missing important steps or is hard to follow. | **0** |  |
| **Apparatus, Materials**  | All required Apparatus and Material are listed separately in each category.  | Most required Apparatus and Material are listed or not included in the correct category.  | Many required Apparatus and Material are missing. Apparatus and Materials may not be separated.  | **0** |  |
| **Data** | Data is recorded in a clear and organized table and to the correct number of significant digits. The table title includes all relevant information and is underlined. Original data is in pen and initialed.  | Data is not clear or well-organized in a table. or title is missing. Most of the data is recorded with the correct number of significant digits. Original data is in pen and initialed. | Data is not clear or well-organized in a table. Data is not recorded to the correct number of significant digits. Original data is in pencil, or white out was used and was not initialed. | **1** |  |
| **Observations** | Observations are clear and easy to understand. All observations are recorded. Original observations are in pen and are initialed. Writing in the third person narrative. | Observations are clear and easy to understand. Not all observations are recorded. Original observations are in pen and are initialed. | Observations are unclear or unrecorded. Original observations are not in pen or are not initialed. Writing in the first person. | **0** |  |
| **Graphs** | Graphs are clear and neat. The title includes all relevant information and is underlined. Y and X axes are labeled correctly. Line of best fit is accurate and drawn in pencil. The equation of the line is given and the slope is calculated.  | One of the required items is missing or incomplete. | Two or more the required items are missing or incomplete. | **0** |  |
| **Calculations**  | Calculations are clear and complete. All required steps are included.  | Calculations are missing some steps.  | Calculations are incomplete.  | **1** |  |
| **Error** |  Error is relevant to the experiment. | Error is not fully clear. | Error is not related to the lab or is human error. | **0** |  |
| **Discussion (Questions)** | Data and observations are interpreted, but not repeated. Data, observations and results are explained using correct physical knowledge. The meanings of relationship, slope and intercepts are given and show understanding. Complete sentences are used. Writing in the third person narrative.  | Most data and observation are interpreted, but not repeated. Most of the data, observations and results are explained using correct physical knowledge. The meanings of relationship, slope and intercepts are partly incomplete. Writing is often unclear and usually in the third person. | Data and observations are repeated, but not explained. Data, observation and results are explained using incorrect physical knowledge. The meanings of relationship, slope and intercepts are incomplete. Writing is in point form or is unclear. Writing is in the first person. | **1** |  |
| **Conclusion** | Brief, clear and directly responding to the Purpose. Results are included. | Long or not directly responding to the Purpose. Results are included. | Long or not directly responding to the Purpose. Results are not included. | **0.5** |  |
| **Results** | Very close to the correct results. | Close to the correct results. | Far from the correct results. | **0** |  |
|  |  |  | **Total Mark:** | **10.5** |  |