**Year 9 Geology**

**Base Isolation Investigation**

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Due: \_\_\_\_\_\_\_\_\_\_\_\_

*Based on Activity3 Pg 342 Pearson Science 9*

Your task is to generate an earthquake and study its effect on a model building.

Your group can choose either:

*To test various methods of base isolation to see which is most effective at preserving your building.*

***OR***

*To test the effectiveness of one method of base isolation on different building shapes.*

You will have a variety of materials to choose from in class to use as base isolators and to construct your building with. You may also choose to bring in materials from home.

Read your marking key carefully as it gives you lots of hints about what you should include.

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| --- | --- | --- | --- |
|  | **Details** | **Available**  **mark** | **Your**  **mark** |
| **Title** | ⬩Explains what the investigation is about: NOT ‘Base Isolation Investigation’. | 1 |  |
| **Introduction** | ⬩Where are methods of base isolation used and why: **do some research.** | 2 |  |
| **Aim** | ⬩Why are you doing this experiment? What do you want to find out?  Hint: This should NOT be copied from the front page. | 1 |  |
| **Hypothesis** | ⬩Correctly worded: does not use personal language (‘I’, ‘we’, ‘our’, ‘my’).  ⬩Includes dependent and independent variables. | 1  1 |  |
| **Independent variable** | ⬩The variable I change (‘I’ for independent).  Hint: when you change the independent variable the variable you are measuring (the dependent variable) will probably change too. | 1 |  |
| **Dependent variable** | ⬩The variable you are measuring.  Hint: any change in this variable depends on what you do to the independent variable. | 1 |  |
| **Controlled variables** | ⬩All the things you keep the same to make it a fair test. You should usually list at least three. | 2 |  |
| **Materials** | ⬩Listed all materials used.  Has specific amounts or numbers: e.g. 25g of salt or 3 x 250ml beakers. | 1  1 |  |
| **Method** | ⬩Is written in past tense.  ⬩Is written in numbered step-by-step.  ⬩Includes all steps completed in experiment.  ⬩Labelled diagrams or photos – referred to in text.  ⬩Explain how reliable results are achieved: trials/replicates, how variables are controlled.  Hint: look at your controlled variables. | 1  1  1  2  3 |  |
| **Results**  **table** | ⬩Drawn neatly in pencil and using a ruler.  ⬩Includes the headings and units of measurements.  ⬩Includes all the data collected during the experiment. | 1  1  1 |  |
| **Graph** | ⬩Includes: title, labels on each axis, correct units of measurement, regular spaced, legend for each graph.  ⬩Use a ruler, do it in lead pencil and make it neat.  ⬩Usually only the averages are graphed. | 5 |  |
| **Discussion** | ⬩Describe at least one mistake/error that occurred.  ⬩Explain how this mistake/error affected the results.  ⬩Explain how this mistake/error could be avoided. | 1  1  1 |  |
| **Conclusion** | ⬩Statement of general results of the experiment.  ⬩Includes figures from your results.  ⬩Whether the hypothesis was proven or disproven.  ⬩Scientific reasons: **you must do some research for this part.** | 1  1  1  3 |  |
| **References** | ⬩Minimum of two references.  ⬩Correctly formatted (as shown in diary). | 1  1 |  |
| **Presentation** | ⬩Correct use of subtitles.  ⬩In correct order.  ⬩Written or typed neatly (if typed, 12 font 1.5 spacing).  ⬩All diagrams referred to in text.  ⬩Uses scientific language.  ⬩Correct spelling, grammar, full sentences. | 3 |  |
| **Total mark** | | **42** |  |