Small-scale Investigation page 105

~Seismograph Record~

Date and Period: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Names:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

QUESTIONS

1. **Controlled variables** are things that maintain constancy in the test groups during an experiment. What were two controlled variables in this investigation? (In other words: From box to box, what stayed constant? 2 things.)

2. The **control group** is the portion of the investigation that undergoes testing, but is not expected to respond like the test materials when the prescribed test is performed on it. The control group is useful to use as a comparison to the test group. Which shoebox do you think is the control group? Pick one shoebox.

2a. Why is this shoebox the control group?

3. The **test group** is the portion of the investigation that undergoes testing and is expected to produce a measurable and analyzable result. Each part of the test group is compared to the control group, as well as to each other. What 6 shoeboxes belong to the test group?

3a. Why are these 6 shoeboxes part of the test group?

4. Does the drumming on the container represent energy release of an earthquake or energy absorption by the material through which the energy passes? State which one it is.

5. Do the different materials in the containers represent energy release of an earthquake or energy absorption by the material through which the energy passes? State which one it is.

6. What does the felt tip pen and piece of paper represent?

7. Rank the materials for energy absorption from the best at absorbing the earthquake energy to worst at absorbing the earthquake energy.

|  |  |
| --- | --- |
| Best Material |  |
|  |  |
|  |
|  |
|  |
| Worst Material |  |

7a. What feature made the top 3 materials the BEST at absorbing the earthquake energy?

7b. What feature made the bottom 3 materials the WORST at absorbing earthquake energy?

8. Did the “air” shoebox serve as a good, average, or poor control group and why?

9. If you lived in an earthquake-prone area, what suggestions do you have for what type of ground is best suited to build community buildings on?

9a. In your opinion do you think it is okay to put parks (where there are little or no buildings) on ground that is less suited for building community buildings (in earthquake-prone areas)?