

SCIENTIFIC METEHD

Different Surfaces and Their Actual Friction Point

1. Purpose

- Write the purpose in the form of a question.

Are their different levels of friction for different types of surfaces?

2. Research

- Find three sources for research. Each source needs to be written about in your own words in the form of a paragraph and needs to be cited.

Funk and Wagnell (Encyclopedia)

Friction is the resistance of two objects coming in contact with each other that interferes with their movement. Friction can be found in sliding, rolling, or flowing motion of an object in relation to another object with which it is in contact.

<http://en.wikipedia.org/wiki/friction> (Website)

Friction must be overcome by an applied force before an object will move. When an object is sliding over another object, the friction remains the same. However, it takes more force for an object to start sliding over another surface than it does to keep the object sliding once it is started.

Sciencesaurus (Textbook)

There are two things that determine friction. One is what the two surfaces are made of. The second one is how hard they are pressing against each other.

3. Hypothesis

- A hypothesis needs to be written telling your prediction of what will happen. You also need to tell why which is supported by your research.

If I put different surfaces on my friction board, then the surfaces will show different levels of friction

- Reason for the hypothesis.

As the different surfaces are felt, they all feel different. To find out if they are different, gravity can be used as a force to see what the friction level of each surface is.

4. Experiment

- Make a list of materials
 - Pine board, 18 inches long, 8 inches wide, and one-half inch thick
 - Inch yardstick
 - Flat surface
 - Block of wood, 3 inches long, four inches wide, and 2 inches thick.
 - The surfaces

- Tin foil
- Wax paper
- Plastic wrap
- Fine sandpaper
- Medium sandpaper
- Coarse sandpaper
- Art paper
- Dish towel
- Bath towel
- Wood surface

- Write the Step by Step Directions

1. Put one of the surfaces on the board at the top. Be sure it isn't wrinkled.
2. Put the block of wood at the top of the board.
3. Put the ruler upright by the end of the board where the applied surface is so it can be read as to how high the board is when the block falls.
4. Lift the board slowly until the block begins to fall and has reached the end of the board.
5. Record how many inches high the board went for the block to overcome the friction.
6. Do this for each surface.
7. Record the number on the data sheet

- List all the Controlled Variables and the One Experimental Variable

Controlled Variables

- The 18-inch board
- The yardstick
- The lifting of the board
- The 6-foot table

Experimental Variable

- The different surfaces to be put on the board

- Do the experiment and record the results on the data sheet.
- Put your data in an organized table.

5. Analysis

- Make a graph on the graph paper.
 - Be complete with a title, proper axes and line labeling, and accurate drawing of the bars.
 - Make sure to draw the bar lines in the order of the height the board was lifted up.
- Write a paragraph explaining what the graph is showing that happened in the experiment. You don't need to explain why at this time.
