**Aim**

Write one sentence to describe the purpose of the experiment.

*Example:*

The aim of this experiment is to investigate how different surface textures affect the amount of friction acting on an object. If more friction is acting on the object, more force will be required to move the object.

**Hypothesis**

Make a prediction about what you think will happen. Write it as an "If... then..." statement.

*Example:*

If the surface texture is rougher, then the amount of friction acting on the object will increase.

**Materials**

List all the materials you used in the experiment. Be specific about the textures you tested

*Example:*

* Wooden block (or similar object)
* Spring scale (to measure force)
* Various surfaces (e.g., ,cork, foam, fine sandpaper, course sandpaper, carpet)

**Method**

Write the steps of how you carried out the investigation. Make sure each step is clear and easy to follow.

Rewrite the following in the past tense. ***What you did***, rather than instructions.

1. Place the wooden block on the first surface.
2. Attach the spring scale to the block.
3. Slowly pull the spring scale horizontally until the block starts moving, and note the force required to start the movement. This force indicates the amount of friction.
4. Record the force reading in a table.
5. Repeat steps 1-4 for each different surface texture.
6. Make sure to conduct each test multiple times to ensure reliable results.

**Diagram of your setup**

Remember scientific drawing is 2D and you need to use a ruler and sharp pencil.

**Variables**

Identify the variables in your investigation:

* **Independent Variable**:
* **Dependent Variable**:
* **Controlled Variables**:

**Results**

Create a table to record your results

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Surface Texture** | **Trial 1 (N)** | **Trial 2 (N)** | **Trial 3 (N)** | **Average Force (N)** |
| Carpet |  |  |  |  |
| Fine Sandpaper |  |  |  |  |
| Course sandpaper |  |  |  |  |
| foam |  |  |  |  |
| Cork |  |  |  |  |

**Graph**

Draw a graph of your results.

**Discussion**

Answer the following questions in complete sentences:

1. **Was your hypothesis supported?**Explain if the results matched your prediction.
2. **What do your results suggest about friction and surface texture?**Describe any patterns you noticed in the data, such as which surfaces created more friction and which created less.
3. **What might have affected the accuracy of your results?**Identify any potential sources of error, like inconsistencies in pulling force or in surface texture.
4. **How could you improve this investigation?**Suggest at least one way to make the investigation more reliable or accurate.

**Conclusion**

Write a short summary of what you discovered in this investigation.

*Example:*

This experiment showed that rougher surfaces tend to create more friction, as indicated by the higher force required to move the block on these surfaces. This suggests that surface texture significantly affects the amount of friction between two objects.