Investigating friction 2

Your teacher may watch to see if you can:
- carry out a careful and safe investigation.

Introduction

There are several different variables that could affect the amount of friction between two surfaces.

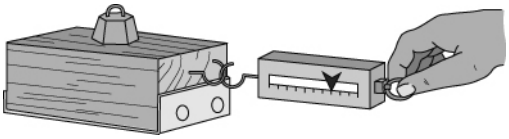
Plan an investigation to find out what effect one of these variables has:

- the material being dragged
- the force pushing the two surfaces together
- the area of the block being dragged
- the speed you pull the block.

Apparatus

Choose your apparatus from this list:
- squares of different types of materials
- force meter
- wooden blocks of different sizes, each with a hook
- 100 g masses
- 4 drawing pins

⚠ Take care the block does not fall off the edge of the bench.



Planning

1 Decide which variable you will investigate. Describe how you will carry out an experiment to find out how this variable affects the friction between a block of wood and the bench.

2 Explain how you will make sure your investigation is fair.

3 Explain how you will make sure your results are as accurate as possible.

Recording your results

4 To get more accurate results, you should carry out each test *three* times and find the mean force. Your table of results will look like this if you have tested different materials.

Material	Force needed to pull block (N)			Mean force (N)
	1st pull	2nd pull	3rd pull	

5 Carry out your tests and work out the mean force needed to pull the block each time.

6 Present your results in a bar chart or scatter graph. (Hint: the variable you changed should go on the horizontal axis.)

Considering your results/conclusions

7 Write a conclusion for your experiment. Say how the factor you investigated affected friction.

Evaluation

8 Is there any way that you could have improved your investigation? Explain your ideas.

I can…
- plan and carry out a safe investigation
- present my data as a bar chart or scatter graph
- draw a conclusion
- evaluate my method.