Name

I can set up a fair test to compare the force needed to move a toy vehicle on different surfaces

Comparing how vehicles move on different surfaces

Our theory We think that …
Our method To test our theory we will … To make it fair we will …
We will compare these different surfaces:
Our prediction This is what we think will happen …

Our Results

Surface	Amount of force (push or pull) needed to move a toy vehicle – e.g. measured by elastic band stretch
	cm
	cm
	cm
	cm

Our Findings

Our group found that …
We think this is because…
Our prediction was right/ wrong

Amazing Magnets - Session 1 Teachers' Notes

Motivational scenario

The session begins with the teacher showing the children a letter they have received from Mr Andrew Newton of the British Scientific Society. The letter seeks to recruit the children's help to develop some exciting activities to engage visitors at their upcoming science fair on the theme of forces and in particular on magnetic forces. The task will give the children a purpose for their learning which will give an added motivational incentive. The letter from Mr Newton is included in the session resources and can be printed and used just as it is, however it will have more motivational appeal if you personalise it with your school name, class name, teacher's name etc. Alternatively, if you have a friend who is unknown to the children and prepared to come into school to role play Mr (or Ms) Newton they could recruit the class to the task in person which would be even more motivating.

Resources

In the Investigational PowerPoint Presentation (provided in the session resources) it is suggested that the children measure push and pull using balloons and rubber bands alongside a ruler rather than with a Newton Meter. This makes the concept of comparing force more understandable for young children. In order to produce a varied, measurable effect on each different surface, it is best to use a chain of thin rubber bands for measuring pull and a flabby, flat balloon for push. The balloon works best if it is one that has been blown up large and then allowed to go flat (see image below). If you do not have time to pre-prepare balloons like this, try stretching them by repeatedly blowing them up or leaving them blown up for as long as possible and then letting most of the air out.

For the investigation activity, the children will need to have access to a variety of different surfaces. You could use real surfaces like lino, carpet, tarmac, grass, sand, gravel, etc. if your children are able to have free access to them during the session. If this is not possible you can easily create your own surfaces within the classroom, e.g. cover trays or lids of boxes with a layer of sand, gravel, soil or woodchips. small samples of matting or carpets are also great and even pieces of fabric like fur, towelling and fleece can make great simulated surfaces for comparison.