

Year 3 and 4 Home Learning

Science Week 4

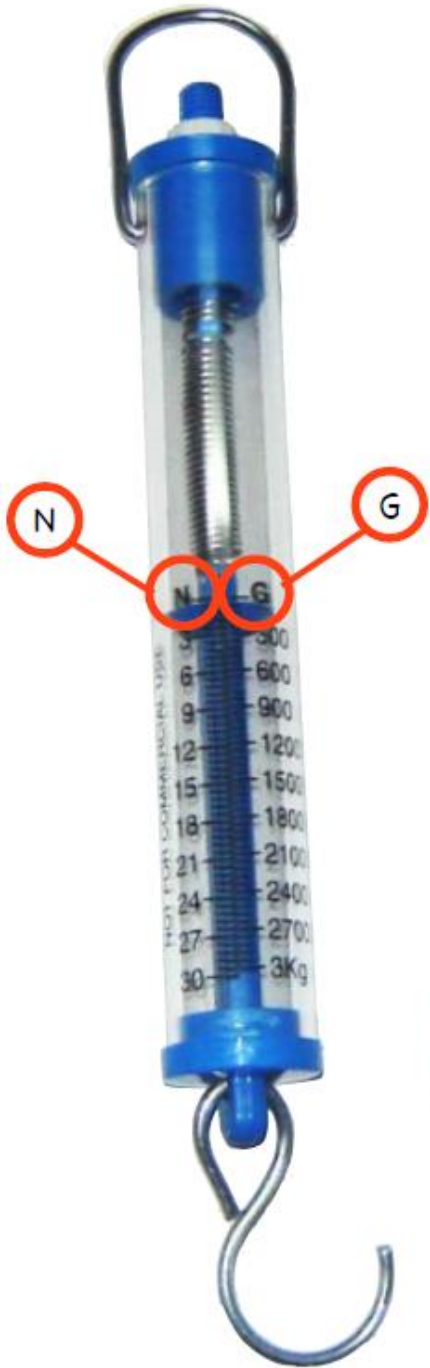
Thursday

# Forces and Magnets

Learning Objective:

To compare how things move on different surfaces.

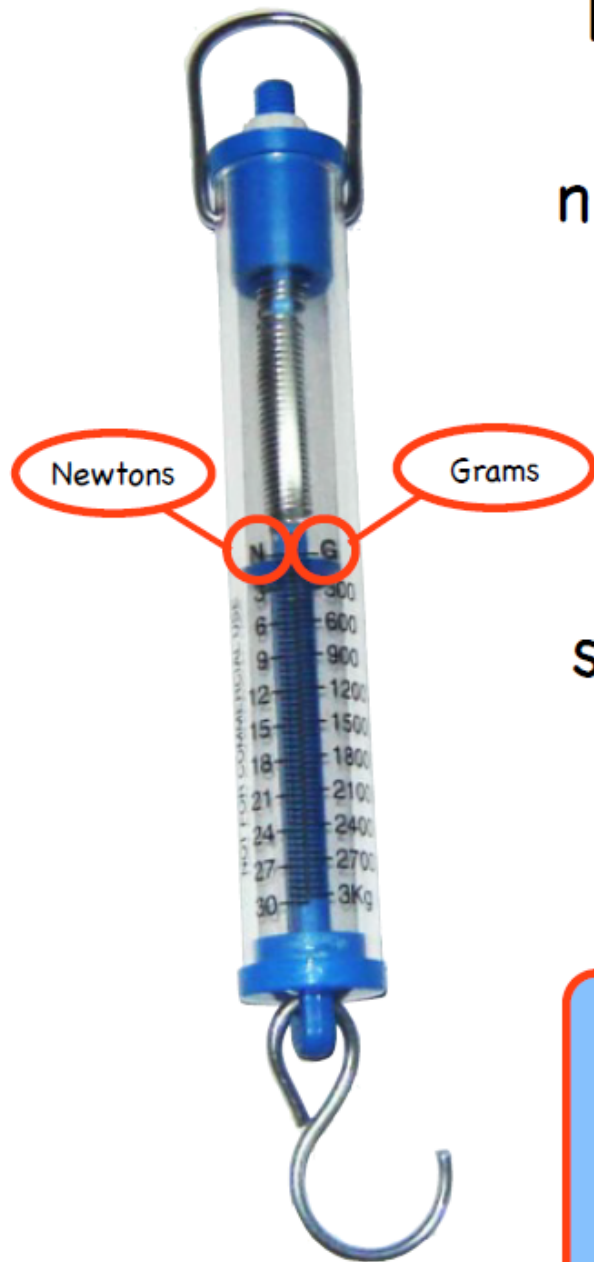
Do you know what this is?



What does it do?

How does it work?



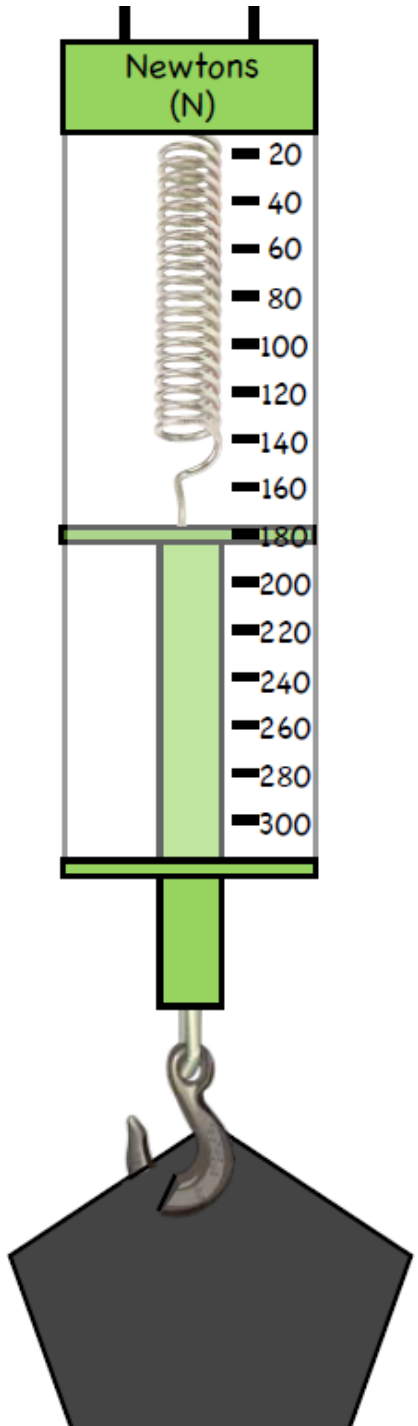
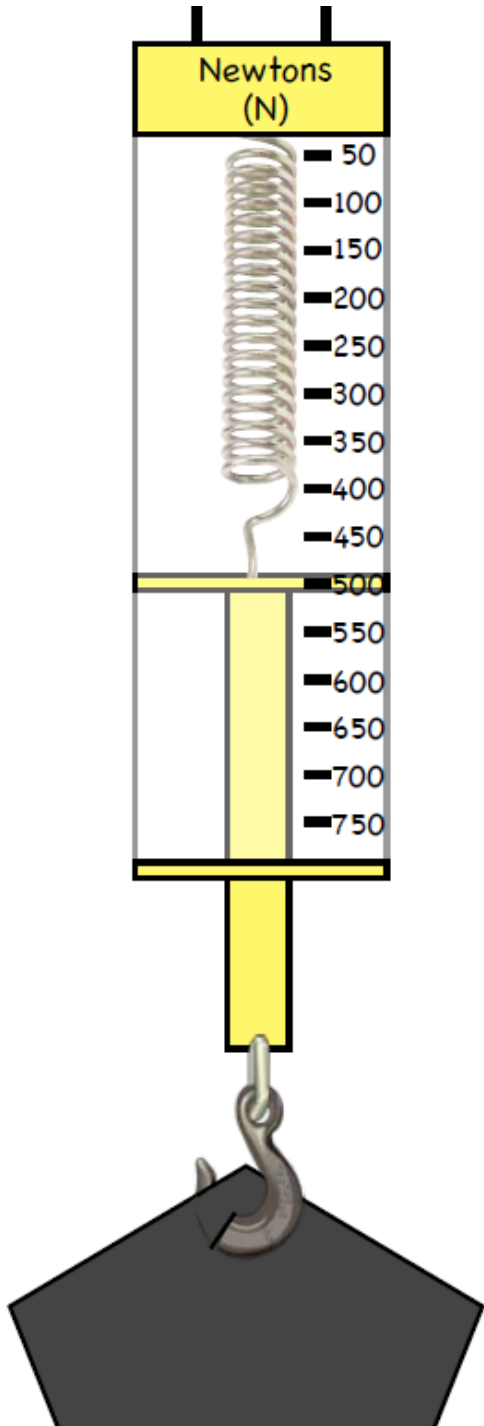
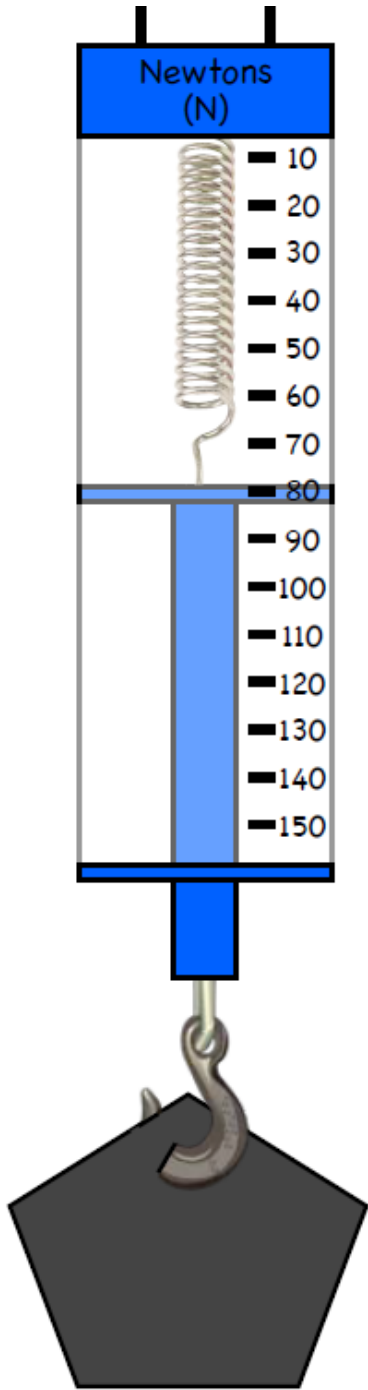


This is a FORCEMETER. Forcemeters are used to measure forces. Forces are measured in newtons. Some forcemeters also have readings in grams as they convert the force to a weight. Forcemeters have a hook at the bottom to attach to the object being measured and a spring inside. The spring stretches as the force is applied to the hook. The reading can then be taken where the spring stops to see what the force measurement is.

Forcemeters are sometimes known as newton meters. Forces, including gravitational forces, are measured in newtons because Isaac Newton was the first man to explain gravity.

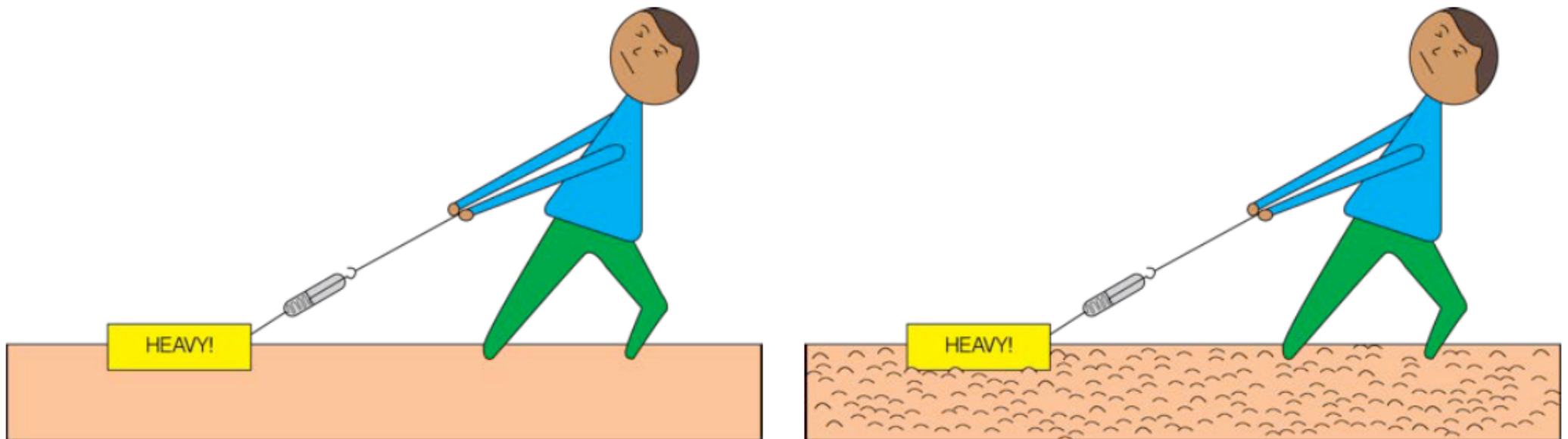
Can you read the scales on these forcemeters?

How much do each of these weights weigh in newtons?



These diagrams show someone pulling a heavy object over two different surfaces, with a forcemeter to measure the force needed to make each object move. One surface is very smooth and one is very rough.

Do you think the reading on the forcemeter will be the same for each test or do you think that one will be harder to pull than the other, making the reading on the forcemeter higher?



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**I think it will require more force to pull an object across a smooth surface than across a bumpy surface.**



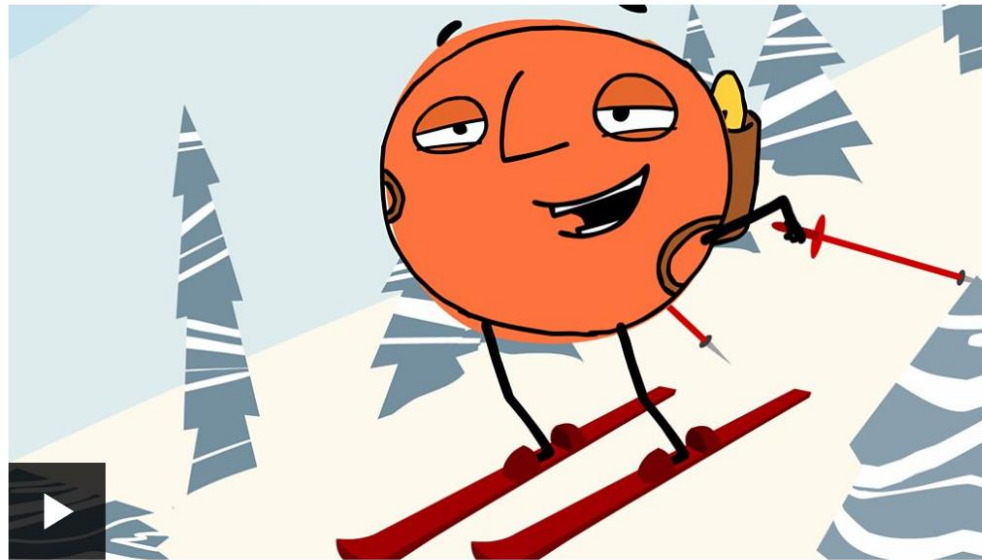
Do you think this statement is true?

How could we test it?

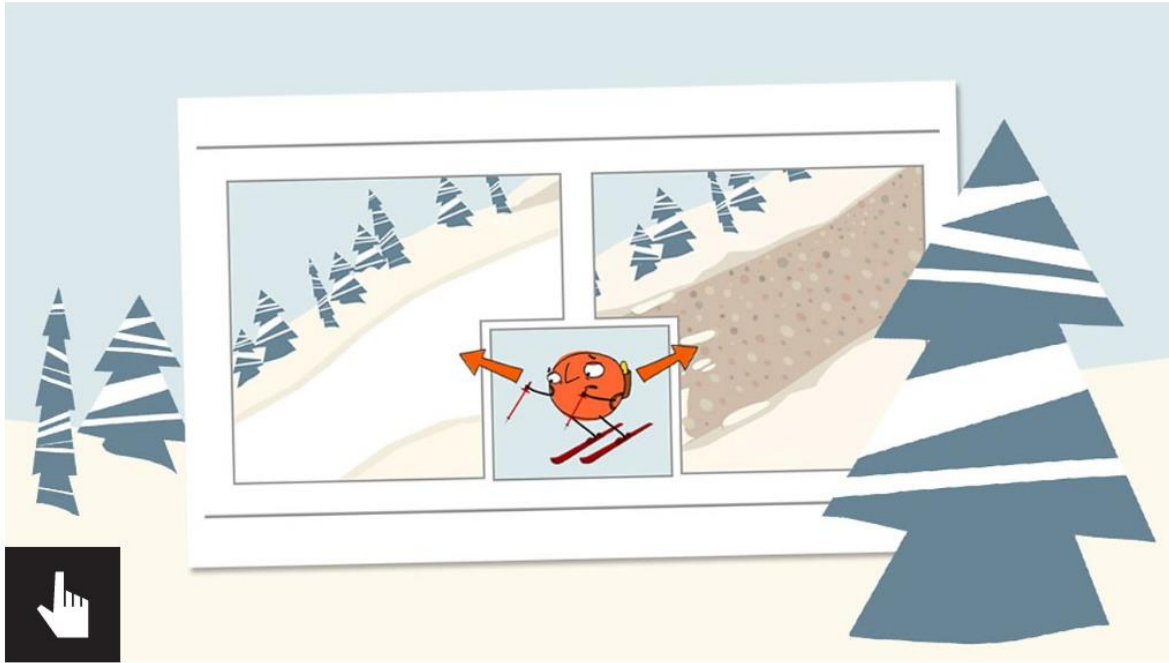
This lesson should have you carrying out an investigation but since you are at home you can research about friction instead...

Please click on...

<https://www.bbc.co.uk/bitesize/topics/zsxxsbk/articles/zxqrdxs>



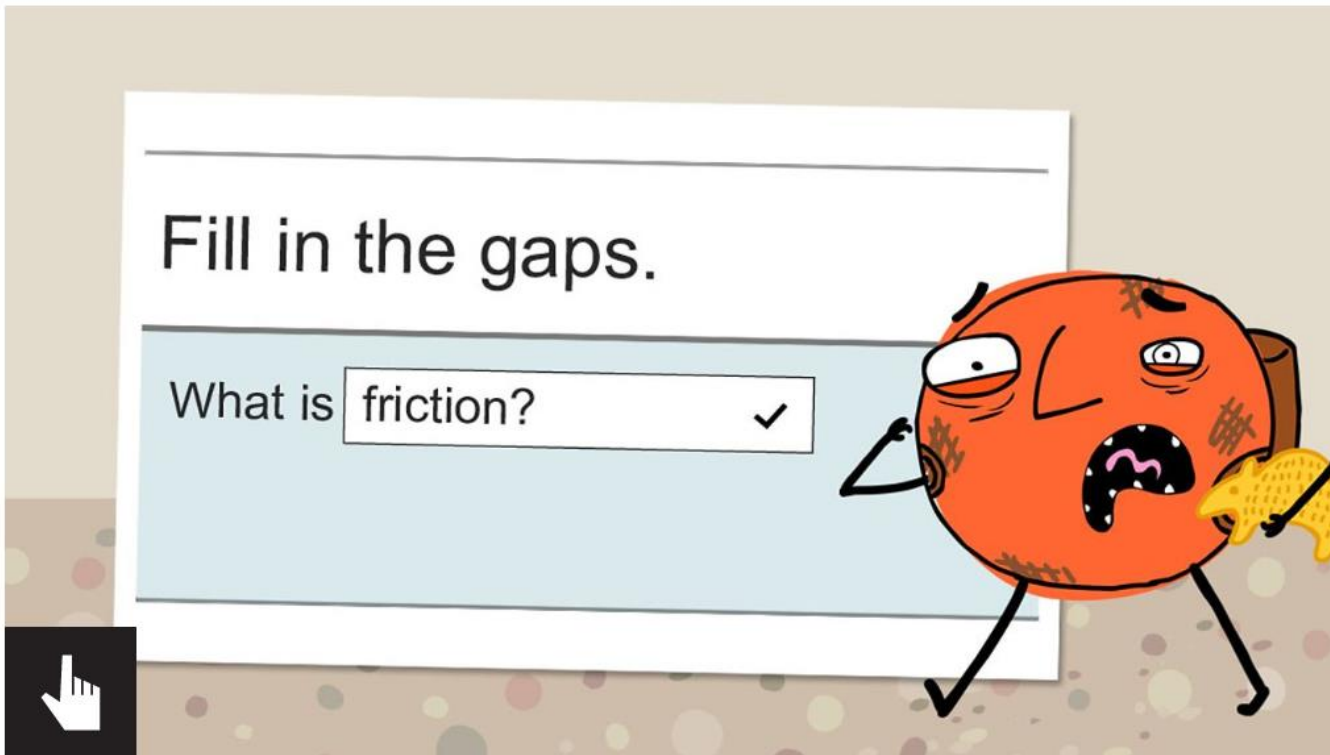
and press the play button on



Press the hand button on this screen



And play the game



Press the hand button on this screen



And play the game



<https://www.bbc.co.uk/bitesize/topics/zsxxsbk/resources/1>

Try these out... Click on play



### **An investigation into friction (signed) >**

An investigation into friction, told through the animated story of Rapunzel.



### **An investigation of friction >**

An investigation into friction, told through the animated story of Rapunzel.

On the same webpage you will find these...

Click on play.



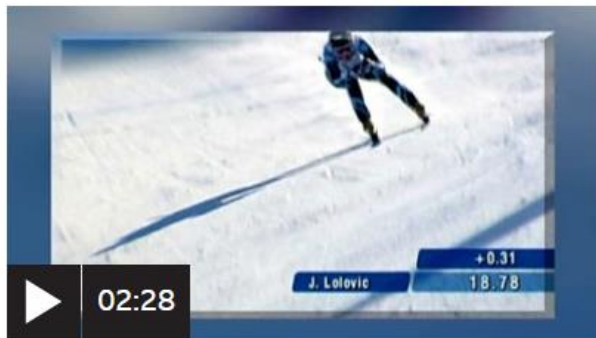
### Friction (clip compilation) >

A montage of different examples of friction in everyday activities.



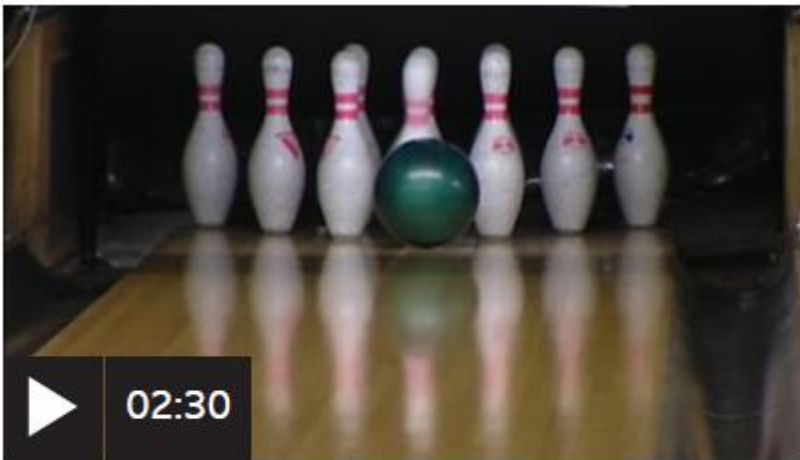
### Friction between the tyre and the road >

An explanation of how friction occurs between a car tyre and the road and the effects.



### Friction on the ski slopes >

An investigation into friction on the ski slopes. Different types of skis are tested.



## How does friction work as a force? >

Children test how different surfaces affect how moving objects stop.



## How is friction created? >

An explanation of friction using a bobsled as an example.

What have you learnt about friction?

Tell someone in your house 5 facts about friction..