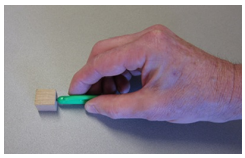
Sliding cubes

This task is about statistical investigations.



Mrs Judd gets a box of ball-point pens. She wonders if all the pens have equally strong flicks. To test this, she flicks a cube in the centre and measures how far it slides.

Part I - Getting started - whole group

a) List as many different things as you can that will affect how far a cube will slide when it is flicked by the pen.

Watch the teacher flick the cube several times.

b) Why does the cube sometimes travel different distances, even though it is flicked in the same way?

Watch the teacher show how to use the recording strip.
Write your name, and details of the pen and cube you used.

Part II - Collecting and looking at data – in pairs

My name: _____ My partner's name: _____

c) 1. Get one person to flick the cube exactly in the centre.
   2. The partner marks the distance travelled with a dot on the person's recording strip.
   3. Return the cube to the person.
   4. Repeat this 20 times.
   5. Swap roles and repeat steps 1 – 4 so both of you have flicked the cube 20 times each.

d) Compare the results of your recording strips to decide which person's cube usually goes further or if both cubes travel about the same distance.

   i) My cube usually travels: **further / about the same distance / not as far** *(circle one)*
   ii) Explain your answer (make reference to the data plotted on your two recording strips).

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Part III - Looking at all the data – whole group

Get into larger groups. Each group puts their recording strips on the wall or a large sheet of paper with blue-tack. Make sure each pairs' strips are one under the other.

e) Discuss what you notice about your groups' results. Make your own notes.

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f) i) Do you think that all the pens flick the cubes about the same distance? **Yes / No** *(circle one)*
   ii) Explain your answer (make reference to the data plotted on all the recording strips).

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