

Forces: Feeling Friction Force

What to do in advance: Interleave two books together about 20-30 times. It should feel impossible to pull them apart from the spines of the books.



What to do with pupils: Choose one (if doing it with you) or two (if doing it with each other) volunteers to pull in opposite directions on the spines of the books to separate them.

Questions to stimulate pupils' thinking:

- Why is it so hard to pull the books apart?
- What forces are acting on the books when we try to pull them apart?
- Can you think of any other examples where the existence of friction is not helpful?
- Can you think of any examples where the existence of friction is helpful?

The science behind it

The books are hard to pull apart because the interleaving of the two books has increased the amount of paper to paper contact, and therefore friction, between the two books. This increased friction force then opposes the motion when you try to pull the books apart.