

# Suzy's World

## Balance - How do you make things balance?

### Fact

- Every object also has a centre of gravity or a balance point.
- This point is where the weight is evenly distributed – there is not more weight on one side or the other.
- It also means that gravity is pulling evenly all over the object.
- If the weight is not evenly distributed the object is not balanced and will fall towards the side that is heaviest.



### Do you know

- If a seesaw weren't properly balanced it wouldn't work. The pivot that it rocks on must be in the middle – the centre of gravity.
- Tightrope walkers need to know how to keep their centre of gravity constant so they don't overbalance and topple off the tightrope.
- You use your own centre of gravity to keep you upright when you are riding a bike, reaching for something on tip toe or spinning round when you are dancing.
- Your inner ear helps you to balance. Sometimes when you have an inner-ear infection you feel dizzy and off balance.

### Experiments you can do

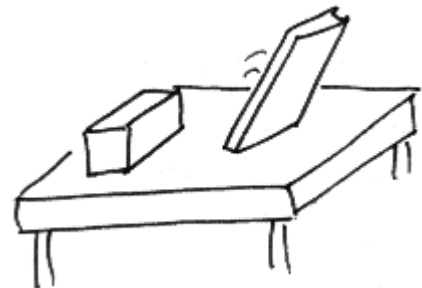
A balancing act.

Place a small box like a weetbix box on a table by placing it on its base. It balances perfectly doesn't it? That's because its weight is evenly distributed over the wide surface of its base.

Now balance a hardcover book on the table by standing it up as if it were in a row on a shelf. Does it balance as easy? You'll find that if the book is slightly open it will balance more easily because the weight of the book is spread over a greater area. Try it with a taller book and you'll find it even trickier.

What else can you find to balance? The smaller the area that touches the table the harder it will be because there is less surface area to distribute the

weight evenly over. Can you balance a flat-bottomed toy block, felt tip pen, pencil?



### Other Investigations

Try balancing your own body.

Try balancing a cushion or a book on your head. It will only balance and stay in place when you find the balance point of the object. Balance a ruler on one finger; it's harder than it sounds, because you need to find the balance point – the centre of gravity.