# Simple & Compound Interest

The difference, and how far apart they end up.

Money

**Simple interest is paid on the principal only.**
**Compound interest is paid on the accumulated total.**

**simple: $P(1 + rt)$ · compound: $P(1 + r)^t$**

| | |
|---|---|
| **£1,000 at 5% for 10 years, simple**<br>£50 each year. | **£1,500** |
| **The same, compound**<br>Interest earns interest. | **£1,629** |
| **Over 30 years, compound**<br>The gap widens with time. | **£4,322** |

**THE COMMON MISTAKE**

**× Assuming the difference is small**

**✓ It grows exponentially with time**

Over one year the difference is nil. Over thirty it is the majority of the total.

**Most savings and debt compound. Simple interest is now unusual outside some fixed-term loans.**