When you leave money in a bank account, the bank pays you interest on it at a percentage. The interest might be compound or simple — and you have to calculate both types...

**Compound Interest — Interest is Added on Each Year**

The amount you invest in an account is called the principal. Compound interest is added on to the principal each year — so you get more and more interest each year.

For example: "Ali invests £800 in a high interest account. The account pays 2% compound interest each year. Find the amount in Ali’s account after 3 years."

<table>
<thead>
<tr>
<th>Value after 1 year is:</th>
<th>£800 × 0.02 = £16</th>
<th>+ 800 = £816</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value after 2 years is:</td>
<td>£816 × 0.02 = £16.32</td>
<td>+ 800 = £832.32</td>
</tr>
<tr>
<td>Value after 3 years is:</td>
<td>£832.32 × 0.02 = £16.65</td>
<td>+ 800 = £848.97</td>
</tr>
</tbody>
</table>

An increase of 2% means the amount in the account at the end of the first year is 102% of the principal.

So you're basically just multiplying by 1.02 for each year.

A quicker way of setting this out would be: £800 × 1.02 × 1.02 × 1.02 = £848.97.

**Simple Interest is Different — It’s a Bit Simpler...**

In simple interest the value increases by the same amount of money each year.

E.g. "A man invests £1000 in a savings account which pays 8% SIMPLE interest per year. How much will there be after 6 years?"

**Answer:** First of all work out the amount of money paid in interest each year:

\[ £1000 \times 8\% = £1000 \times 0.08 = £80 \]

Then multiply this amount by the number of years to get the total interest:

\[ £80 \times 6 = £480. \]

Finally, add the interest and the initial amount together: £1000 + £480 = £1480

**You Might Have to Work Out the Amount Invested**

In an Exam, you might be told how much is in an account at the end of the year, and the rate of interest, and asked to work out the principal. These are Type 3 percentage questions — see p22.

E.g. "Glenn invested some money in an account that pays 4% interest per year. After the interest is added at the end of the year, there was £374.40. How much did Glenn invest?"

Interest of 4% means that £374.40 represents 104% of the principal. You need to find the principal, which is 100% — so divide, then multiply.