When you put your money in a bank, the bank pay you **interest**.

This means they pay you a small percentage of the amount you have put in to reward you for banking with them.

This is a real-life example of percentage increase – we are going to use some prior knowledge and skills about percentage increase in the lesson today.

You will have £1000 to invest in a bank of your choice. By the end of the lesson, you need to be able to decide which bank you will use and give a reason for your answer.

LO: Solve simple and compound interest problems.

NatWest	Nationwide	HSBC
• 4.2 % • Simple interest • Annually • 3 years	• 3.8% • Compound interest • Annually • 3 years	• 0.7% • Simple interest • Monthly • 3 years
BARCLAYS	Lloyds TSB	HALIFAX
• 3.9% • Simple interest • Annually • 4 years	• 3.6% • Compound interest • Annually • 4 years	• 0.5% • Compound interest • Monthly • 3 years
ING	Santander	RBS The Royal Bank of Scotland
• 2.2% • Simple interest • Quarterly • 3 years	• 2% • Compound interest • Quarterly • 3 years	• 0.6% • Simple interest • Monthly • 4 years
Yorkshire Bank	Britannia	The co-operative bank
• 1.9% • Simple interest • Quarterly • 4 years	• 1.7% • Compound interest • Quarterly • 4 years	• 0.4% • Compound interest • Monthly • 4 years

LO: Solve simple and compound interest problems.

NatWest

- 4.2 %
- Simple interest
- Annually
- 3 years

This is the interest rate. This is the amount they will increase your original amount by.
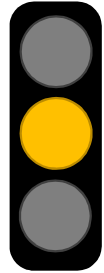
This tells you if they offer **simple** or **compound** interest.

This tells you how often they pay the interest.
- Annually = once per year
- Quarterly = 4 times per year
- Monthly = 12 times per year

This tells you how long you will leave your money in the account for.

LO: Solve simple and compound interest problems.

Task

Calculate the amount of money you will have in the Natwest account after 1 year.

NatWest

- 4.2 %
- Simple interest
- Annually
- 3 years

Challenge

Calculate the amount of money in each of the **RED** accounts after 1 year. You don't need to worry about simple or compound interest for the moment.

This is the interest rate. You need to work out 4.2% of 1000 and add it on to the original amount.
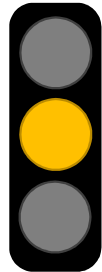
LO: Solve simple and compound interest problems.

NatWest

- 4.2 %
- Simple interest
- Annually
- 3 years

You leave the money in the account for 3 years.

$0.042 \times 1000 = £42$

Natwest pay you £42 every year.
$£42 \times 3 = £126$.

At the end of 3 years, you have £1126 in your account.

Task
Use a similar method to calculate the amount you will have after 4 years with Barclays.

Challenge
Do similar calculations for the other banks offering **simple** interest (ING and Yorkshire).

LO: Solve simple and compound interest problems.

BARCLAYS
- 3.9%
- Simple interest
- Annually
- 4 years

0.039 × 1000 = 39
Barclays pay £39 per year in interest.

£39 × 4 = £156

You will have **£1156** at the end of 4 years.

ING
- 2.2%
- Simple interest
- Quarterly
- 3 years

These banks pay interest quarterly! This means that they will pay you 4 times per year.

ING pay 2.2% - this is £22 per quarter.
Per year: £22 × 4 = £88
After 3 years: £88 × 3 = £264.   Total = **£1264**

Yorkshire Bank
- 1.9%
- Simple interest
- Quarterly
- 4 years

Yorkshire pay 1.9% - this is £19 per quarter.
Per year: £19 × 4 = £76
After 4 years: £76 × 4 = £304.   Total = **£1304**

LO: Solve simple and compound interest problems.

Nationwide
- 3.8%
- Compound interest
- Annually
- 3 years

Some banks pay **compound** interest.

100% + 3.8% = 103.8%
As a decimal, this is 1.038.

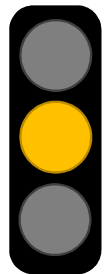## Method 1 – Work it out each year

Year 1: £1000 × 1.038 = £1038

Year 2: £1038 × 1.038 = £1077.44

Year 3: £1077.44 × 1.038 = £1118.38

Method 2 – In one step

$1000 \times 1.038^3 = £1118.38$

Task
Use whichever method you prefer to work out the amount you will get from Lloyds after 4 years.

Challenge
Do the same for the remaining ORANGE cards, then the GREEN cards.

LO: Solve simple and compound interest problems.

Using the calculations that you have done, work out which bank makes you the most money.

Write down which bank you will invest your £1000 with.

LO: Solve simple and compound interest problems.

NatWest	Nationwide	HSBC
• 4.2 % • Simple interest • Annually • 3 ye **£1126**	• 3.8% • Compound interest • Annually • 3 ye **£1139**	• 0.7% • Simple interest • Monthly • 3 ye **£1252**
BARCLAYS	Lloyds TSB	HALIFAX
• 3.9% • Simple interest • Annually • 4 ye **£1156**	• 3.6% • Compound interest • Annually • 4 ye **£1144**	• 0.5% • Compound interest • Monthly • 3 ye **£1180**
ING	Santander	RBS The Royal Bank of Scotland
• 2.2% • Simple interest • Quarterly • 3 ye **£1264**	• 2% • Compound interest • Quarterly • 3 ye **£1268**	• 0.6% • Simple interest • Monthly • 4 ye **£1288**
Yorkshire Bank	Britannia	The co-operative bank
• 1.9% • Simple interest • Quarterly • 4 ye **£1304**	• 1.7% • Compound interest • Quarterly • 4 ye **£1310**	• 0.4% • Compound interest • Monthly • 4 ye **£1211**

<u>LO</u>: Solve simple and compound interest problems.

Answer the questions below in your book.

A bank pays 5% **compound** interest per year. You have £500.

RED
Work out how much you will have after the first year.

AMBER
Work out how much you will have after 3 years.

GREEN
Explain why 5% **compound** interest is a better deal than 5% **simple** interest.