INTEREST ON SAVINGS

If you save with a bank or building society then interest is paid to you for lending them the money.

SIMPLE INTEREST

With simple interest the amount of interest to be paid each year is calculated on the amount invested and therefore the interest remains the same each year. This situation will only happen if the interest is taken out of the bank or building society each year.

As the interest remains the same every year, for 2 years the interest will be doubled, for 3 years it will be multiplied by 3, for 6 months it will be multiplied by 1/2 and so on.

Example

Find the simple interest on £1500 for a) one year b) 3 years c) 6 months at 2.5% p.a.

Answer

a) Simple interest for 1 year = £1500 × 2.5 ÷ 100 = £37.50
b) Simple interest for 3 years = £1500 × 2.5 ÷ 100 × 3 = £112.50
c) Simple interest for 6 months = £1500 × 2.5 ÷ 100 × 6 ÷ 12 = £18.75

Exercise 1

Find the simple interest for one year on

1) £500 at 3% p.a.
2) £600 at 4% p.a.
3) £1000 at 9% p.a.
4) £750 at 8% p.a.

Find the simple interest on

5) £400 for 2 years at 7% p.a.
6) £550 for 4 years at 6.5% p.a.
7) £290 for 6 months at 8.4% p.a.
8) £360 for 3 months at 8.4% p.a.
9) £3000 tor 5 years at 4% p.a.
10) £720 for 2 years 6 months at 5% p.a.

COMPOUND INTEREST

If the interest earned is not withdrawn each year, instead it is added onto the amount invested. The following year there will be more interest, this is known as compound interest. Building societies usually add compound interest to their accounts every year or every six months. Some banks calculate the interest daily and add it to the account each month.

Example
Find the compound interest on £2700 at 4% for 3 years.

Answer

Year	Amount (£)	Interest (£)	Balance (£)
0	2700	$2700 \times 4 \div 100 = 108$	$2700 + 108 = 2808$
1	2808	$2808 \times 4 \div 100 = 112.32$	$2808 + 112.32 = 2920.32$
2	2920.32	$2920.32 \times 4 \div 100 = 116.81$	$2920.32 + 116.81 = 3037.13$
3	3037.13		

Compound Interest = Final Amount - Original Amount = £3037.13 - £2700 = £337.13

Exercise
Find the compound interest on
1) £500 at 8% for 2 years
2) £1200 at 15% for 3 years
3) £850 at 10% for 4 years
4) £2000 at 20% for 3 years
5) £725 at 12.5% for 4 years
6) £1500 at 7.5% for 5 years

The calculations can be made simpler by multiplying by $1 + (\%\ \text{rate} \div 100)$ for each year.

Answer Using the above worked example:-

$1 + (\%\ \text{rate} \div 100) = 1 + (4 \div 100) = 1.04$
Amount at end of first year = £2700 x 1.04 = £2808
Amount at end of second year = £2808 x 1.04 = £2920.32
Amount at end of third year = £2920.32 x 1.04 = £3037.13
Compound Interest = Final Amount - Original Amount = £ 3037.13 - £2700 = £337.13

Now rework the **Exercise** using this new method.

The calculation can be further simplified by using the x^y button on the calculator.

Answer Using the above worked example.

Note in the second method you multiplied by 1.04 three times, once for each year.
Using the x^y button on the calculator, one line of working is sufficient.

Amount at end of third year = £2700 x 1.04^3 = £3037.13
(To key this in on your calculator 2700 x 1.04 x^y 3 =)

Compound Interest = Final Amount - Original Amount = £ 3037.13 - £2700 = £337.13

Now rework the **Exercise** using this new method.

If you use two different methods when presenting your portfolio work this is checking your work and helps gain higher marks.

SAVINGS £2000 for 3 years

If you had £2000 to invest for three years you could invest in a term deposit or savings bond. You must be prepared to commit the money for the three years. The rates of interest are fixed for the three years.
Moneynet on the Internet will tell you up to date information about interest rates.
Suppose a building society has a term account with 5% interest per annum. Interest is paid annually and no withdrawals are allowed.

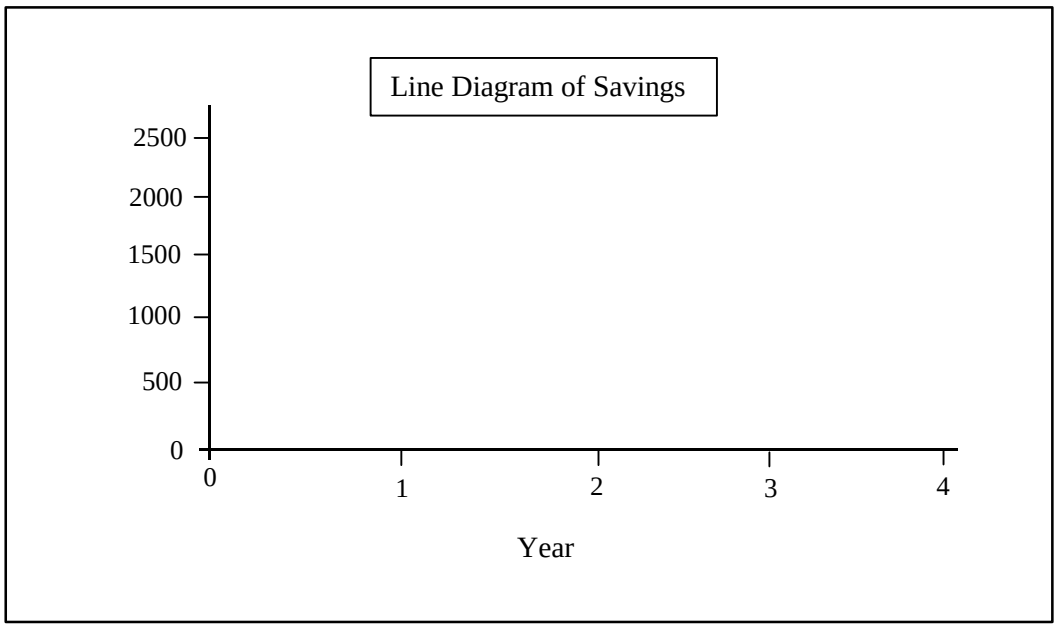
Total in account after three years = £2000 x 1.05^3 = £2315.25
Interest = £2315.25 - £2000 = £315.25
This could also be worked on a spreadsheet and a suitable line graph drawn.

	A	B	C	D
1	Year	Amount	Interest	Balance
2	0	£2000.00	£100.00	£2100.00
3	1	£2100.00	£105.00	£2205.00
4	2	£2205.00	£110.25	£2315.25
5	3	£2315.25		

Spreadsheet

	A	B	C	D
1	Year	Amount	Interest	Balance
2	0	£2000.00	=B2*5%	=B2+C2
3	1	=D2	=B3*5%	=B3+C3
4	2	=D3	=B4*5%	=B4+C4
5	3	=D4		

Now displaying formulae



Using Moneynet find three suitable accounts to invest £2000 for three years and find the interest gained on each account and compare the conditions, then state which one you would invest in and why.

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SAVINGS COMPARISON

Instant Savings Accounts
Instant access. Variable rate of interest calculated annually or in some cases monthly.
Minimum investments vary from £1 to about £250.
Interest rates vary from under 1% upwards.

30 days savings accounts
30 days needed for withdrawals without loss of interest. Minimum investment often £1000.
Interest rates below the instant access accounts at the moment so these are poor investment at the moment.

60 days savings account
60 days needed for withdrawals without loss of interest.
Minimum investment often £1000 or £500.
Interest rates below the instant access accounts at the moment so these are poor investment at the moment.

Fixed Rates
Need to be prepared to tie money up for longer periods eg 1,2,3,4,5 year terms.
Minimum investment £500 or £1000.
Interest rates are fixed for the full term. At present this could be a good option as rates are falling and seem to be set to fall further.

Guaranteed Reserve
Fixed interest for 6 months, 1 year, 2 years, 3 years (you choose)
Minimum deposit eg £2000.
No additional deposits / withdrawals once account opened.
Can close after 6 months but would lose interest - certainly not desirable.

Bonds
Higher interest rates for longer term savings.
Limited issues each with own withdrawal restrictions.
Linked to stock market and although you are guaranteed same amount you invested, if stock market performs poorly then you receive little or no interest. If the stock market performs well then you can receive high interest returns.

Growth Savings Bond
The longer you invest for the higher the interest.
Invest at least £2000 for 1 year, 2 years or 3 years.
Cannot touch the money for the term of the bond. Good investment if you can afford to leave the money for the maximum period.

Monthly saver
Variable interest rate. Opportunity to gain a variable annual bonus.
Minimum deposit to open account £5, then regular monthly payments required. Under some schemes you need to set up standing orders from other accounts held at the same bank. Some schemes allow you to miss one monthly payment each year without loss of interest or bonus and to make one withdrawal each year without loss of interest or bonus.