Percentages

Appreciation & Depreciation

If an item appreciates in value then its value increases.
If an item depreciates in value then its value decreases.

Example

A car bought for £12500 depreciates in value by 15% in the first year.
Calculate the value of the car after a year.

Method 1

15% of 12500 = 1875

12500 – 1875 = 10625

The value after 1 year is £10625

Method 2

85% of 12500 = 10625

The value after 1 year is £10625

Compound Interest

When money is invested in a bank or building society account it will earn interest.
Interest is added at the end of a set period of time, usually a year.

Example

Angus invests £500 in a bank account. Interest is added at a rate of 2% per annum.
Calculate how much Angus has in the account after 3 years.

Method 1

2% of 500 = 10
500 + 10 = 510
2% of 510 = 10.20
520 + 10.20 = 520.20
2% of 520.20 = 10.40
520.20 + 10.40 = 530.60

Angus has £530.60

Method 2

$1.02^3 \times 500 = 530.60$

Angus has £530.60

Reverse Percentages

A reverse percentages problem involves working backwards to find the original price when given the value with a percentage increase/decrease already added/subtracted.
These questions should be solved by using proportion.

Example

Karen receives an electricity bill for £88.20. This includes VAT at a rate of 5%.
Calculate the cost of the electricity bill before the VAT was added.

105% - 88.20
1% - 88.20 ÷ 105 = 0.84
100% - 0.84 x 100 = 84

The electricity bill was £84 before VAT.

Percentages Practice

http://www.bbc.co.uk/bitesize/standard/maths_ii/numbers/compound_interest/revision/1/

Revise compound interest, appreciation and depreciation. Try the testbite.

http://www.bbc.co.uk/bitesize/standard/maths_ii/numbers/reverse_percent/revision/1/

Revise reverse percentages. Try the testbite.

http://www.cimt.plymouth.ac.uk/projects/mepres/book9/bk9i4/bk9_4i5.html

Revise percentages increase/decrease problems.

http://www.supermathsworld.com/ Ask your teacher for the login details.

Select NUMBER from the menu. Select PERCENTAGES 1.Try on the HARD level.

Select NUMBER from the menu. Select PERCENTAGES 2.Try on EASY, MEDIUM and HARD level.