UNIT 17 *Arithmetic: Decimals,* Teaching Notes
Fractions and Percentages

Historical Background and Introduction

An historical introduction to decimals and fractions has already been given. The background to percentages is rather more obscure, however, but they are thought to have originated in Italy in about 1425, when a symbol was used for 'per cent', i.e. per 100. Over time, this was modified, and eventually the % symbol was established. The symbol ‰ meaning 'per mille' (per 1000) was also used, but never extensively.

The % symbol to represent percentages, and what it means, has become important in today's society, and regularly expresses changes in things such as wages, inflation, interest rates and VAT, in addition to its normal usage. So it is vitally important that all our pupils both understand the concept, and competently put it into practice.

Routes

	Standard	Academic	Express
17.1 Conversion: Decimals into Fractions	✓	✓	✓
17.2 Conversion: Fractions into Decimals	✓	✓	✓
17.3 Introduction to Percentages	(✓)	✓	✓
17.4 Decimals, Fractions and Percentages	✗	(✓)	✓

Language
Percentage	✓	✓	✓

(✓) *denotes extension work for these pupils*

Misconceptions

• that 5% is 0.5 (not, as is correct, 0.05)

• that 5% as a fraction is $\dfrac{1}{5}$ (not, as is correct, $\dfrac{1}{20}$)

• pupils often have difficulty understanding that the fraction $\dfrac{1}{8}$ as a decimal, is 0.125, and as a percentage is 12.5%

• pupils must understand that if the price of a product is decreased by 10% and then increased by 10%, the final price will *not* be the same as the original price.

Challenging Questions
The following questions are more challenging than others in the same section:

	Section	Question No.	Page
Practice Book Y7B	17.1	9, 10	70
" "	17.2	10	73