UNIT 19 *Similarity* Teaching Notes

Historical Background and Introduction

In this unit we build on earlier work with polygons, scale drawings and transformations by considering enlargements and their application in similar shapes, both 2- and 3-dimensional.
The key concept here is that when enlarging, to give similar shapes, the angles *do not change*, whereas the side lengths are multiplied by the scale factor (which can be greater or less than 1). The increase (or decrease) in area is found by multiplying the original area by the (scale factor)^2.

Routes	**Standard**	**Academic**	**Express**
19.1 Enlargement	✓	✓	✓
19.2 Similar Shapes	✓	✓	✓
19.3 Line, Area and Volume Ratios	(✓)	✓	✓
19.4 Map and Scale Models	×	(✓)	✓

Language	**Standard**	**Academic**	**Express**
Enlargement	✓	✓	✓
Scale factor	✓	✓	✓
Similar shapes	✓	✓	✓

Misconceptions

- not appreciating that enlargements can have scale factors of less than 1, which means a reduction in size
- a scale factor of k does not give rise to an area scale factor of k but, in fact, of k^2; similarly for volumes, a scale factor of k gives rise to a volume scale factor of k^3.

Challenging Questions

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

	Section	*Question No.*	*Page*
Practice Book Y8B	19.2	9, 10	141
" "	19.4	9	151