Activity 1: Planning a topic - Lenses

Lesson	Spec point	Aim	Activity	Maths	5c	CPAC
1	75, 79, 80	Introduction to lenses, vocabulary and thin lens formula	With converging lens focus image of distant window onto wall and measure focal length. Project image onto screen and measure *u* and *v* Verify that values satisfy thin lens formula, graphical method possible	C0.3, C1.1, C1.2, C1.5, C2.3 (C3.1-4)	1 + 3	4a,
2	80, 76, 81	Lens diagrams and magnification	Using values for *u* and *v* from practical construct ray diagrams to scale. Measure magnification *m* and check against value for *u*/*v*.	C0.3, C1.1, C2.3	1 + 3	2b, 2d
3	76, 77, 78	Calculate powers and use formula for combination	Measure focal length of combination Further ray diagrams	C0.3, C1.1, C1.5, C2.3	1 + 3	2b, 4b
4	75, 79, 80	Concept of a virtual image and 'real is positive' with examples	Magnifying glass and 2 lenses as telescope and microscope. Simple observations	C0.3, C1.1, C1.5, C2.3	1	
5		Revision and CPAC practical	Use of 'conjugate' focal points – see practical guide	C0.3, C1.1, C1.2, C2.3	1 + 3	2a, 2b, 2c, 3a, 4b

Notes:

1. Start with converging lenses and come back later to see how diverging lenses compare, useful revision/consolidation of converging and good differentiation since converging easier to understand
2. CPAC coverage depends on the nature of the practical work carried out ie how much is carried out following written instructions and how much on student's own initiative – CPAC 2.