6.1.1 Cellular control

(a)	types of gene mutations and their possible effects on protein production and function	To include substitution, insertion or deletion of one or more nucleotides **AND** the possible effects of these gene mutations (i.e. beneficial, neutral or harmful).
(b)	the regulatory mechanisms that control gene expression at the transcriptional level, post-transcriptional level and post-translational level	To include control at the, • transcriptional level: lac operon, and transcription factors in eukaryotes. • post-transcriptional level: the editing of primary mRNA and the removal of introns to produce mature mRNA. • post-translational level: the activation of proteins by cyclic AMP. HSW2
(c)	the genetic control of the development of body plans in different organisms	Homeobox gene sequences in plants, animals and fungi are similar and highly conserved AND the role of Hox genes in controlling body plan development. HSW7
(d)	the importance of mitosis and apoptosis as mechanisms controlling the development of body form.	To include an appreciation that the genes which regulate the cell cycle and apoptosis are able to respond to internal and external cell stimuli e.g. stress.