

## Scheme of work for Chapter 10, *Genetics II*

Syllabus section	Content	Time required	Outline of lessons	Coursebook resources	Worksheets	Teacher's resources / Teaching ideas
10.1	Meiosis	2 lessons	<ul style="list-style-type: none"> <li>Review the description of the behaviour of chromosomes in the phases of meiosis and outline the formation of chiasmata in crossing over</li> <li>Explain how meiosis results in genetic variety through crossing over in prophase I and random orientation in metaphase I; explain the relationship between Mendel's law of independent assortment and meiosis</li> </ul>	p236–240 Short-answer Qs p239 End-of-chapter Qs p251–252: Q5	Support: Q1 Extension: Q2	Practical activity: modelling meiosis using modelling clay or similar  Link to TOK: Mendel's work in a historical context  Link to ICT: check Mendel's statistics
10.2	Dihybrid crosses and gene linkage	3 lessons	<ul style="list-style-type: none"> <li>Calculate and predict genotypes and phenotypes of offspring in dihybrid crosses involving unlinked autosomal genes, and distinguish between autosomes and sex chromosomes</li> <li>Explain how crossing over between non-sister chromatids at prophase I can result in exchange of alleles</li> <li>Explain linkage and an example of a cross between two linked genes; identify offspring that are recombinants in a dihybrid cross involving linked genes</li> </ul>	p240–248 Worked examples p241–248 Short-answer Qs p241, p248 End-of-chapter Qs p251–252: Q1, Q2, Q3, Q4, Q6, Q7	Support: Q3, Q4 Extension: Q1, Q3, Q4	Practice theoretical questions in Coursebook and Worksheets  Exemplar exam question
10.3	Polygenic inheritance	1 lesson	<ul style="list-style-type: none"> <li>Explain how polygenic inheritance contributes to continuous variation using the example of human skin colour and one other example</li> </ul>	p248–250 TOK p250	Support: Q2	Link to ICT: examples of polygenes

**Note:** 1 lesson = approximately 40 minutes