Subject	Year	Term
Biology	13	2

Topic

Gene Technologies

Content (Intent)

Prior Learning (Topic) Year 11 – B6. Year 12 – Nucleic acids, DNA & protein synthesis. Year 13 – Inheritance.

- Sequencing projects have read the genomes of many species.
- Sequencing methods are continuously updated and are now automated.
- Use of sequencing in determining the sequences of proteins that derive from the genetic code, and uses of this info.
- Problems presented by presence of non-coding DNA and regulatory genes in more complex organisms.
- Recombinant DNA technology and processes involved
- Different methods for production of DNA fragments
- In vivo and in vitro methods of amplifying these fragments, including details of PCR and culture of transformed host cells.
- Evaluation of ethical, financial, social and environmental issues in use of recombinant DNA technology in agriculture, industry and medicine.

Future Learning (Topic) University study

How will knowledge and skills be taught? (Implementation)	How will your understanding be assessed & recorded (Impact)
Demos Gel electrophoresis *Practical work* Possible practical running gel electrophoresis gels *Written* Class notes Past paper questions in class Past paper questions in homeworks	- 4 x assessed homeworks (Grade given. Written & verbal feedback. Response expected.) -1 x end of topic test (Grade given. Verbal feedback to class and individuals.)

How can parents help at home?

Look at the topic specific resources on the VLE
Use appropriate youtube channels: cognito, freesciencelessons, Crash Course Biology.
Encourage students to use the textbook issued.
Take an interest! Ask your children what they have learnt and be curious about their learning.

Helpful further reading/discussion

Reading	**Vocabulary Lists**	**Careers Links**
New Scientist Biological Science Review Magazine The Biologist Magazine – Royal Society of Biology Royal Society of Biology blog A Life Decoded – Craig Venter The Immortal Life of Henrietta Lacks – Rebecca Skloot Genome – Matt Ridley	*DNA, introns, exons, PCR, gel electrophoresis, primers, probes, recombinant DNA, plasmid, marker gene.*	Biochemistry Biomedical science Biological sciences Medicine Veterinary medicine Bioveterinary science Healthcare science Radiology Geneticist Oncologist Cancer research Genetic counsellor