

Name: _____

Class: _____

ACTIVITY SHEET

Chapter 5 Revision

Use this revision sheet to check your understanding and guide your revision. Identify any concepts, models or other content that require more study, and then plan your study approach.

By the end of this chapter **you should know:**

	Revise	Complete
Techniques: cutting and recombining DNA		
Techniques: PCR, gel electrophoresis		
Techniques: gene probes, microarray technology		
Techniques: DNA sequencing, gene cloning		
Techniques: transferring genes		
Techniques: DNA profiling		
Applications: genetic testing, production of pharmaceuticals, gene therapy		
Applications: plant modification, pest resistance, herbicide resistance, animal modification		
Applications: biodiversity conservation		
Emerging technologies: cloning and stem cell therapy		
Ethical issues associated with gene technologies		

By the end of this chapter **you should be able to:**

	Revise	Complete
Define the term 'genetically modified organism'		
Summarise the use of restriction enzymes to cut DNA; include an explanation of blunt and sticky ends		
Summarise the process of recombining DNA using DNA ligase		
Describe DNA amplification using PCR		
Describe the process of separating DNA fragments using gel electrophoresis		
Explain how and when a gene probe is used		
Describe the use of microarray technology		
Describe the process of DNA sequencing		
Describe the use of plasmids to copy a DNA sequence, including antibiotic selection		
Summarise the types of vectors that can be used to deliver a gene into a host		
Explain how DNA profiling can be used to identify an individual; include the role of short tandem repeats		
Summarise the applications of genetic modification for humans: genetic testing, production of pharmaceuticals, gene therapy		
Summarise the applications of genetic modification in agriculture: plant and animal modification, pest and herbicide resistance in plants		

	Revise	Complete
Explain how genetic modification can be used to preserve biodiversity and maintain vulnerable populations		
Compare the different types of cloning		
Describe how stem cells can be used for cell-based therapies		
Compare the sources of stem cells: embryonic and adult		
Summarise the arguments for and against the use of GMOs		
List other ethical issues related to gene technologies		