

Name: _____

Class: _____

ACTIVITY SHEET

Chapter 1 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
The features of a gene, including what it is made of and its function		
Chargaff's ratio		
The structure of DNA		
How DNA is replicated		
The study of genomics		
Sexual vs asexual reproduction		
The structure of a eukaryotic chromosome		
What a karyotype is and what it is used for		
The normal number of chromosomes in human cells		
The structure of a prokaryotic chromosome		
The cell cycle		
Cell division in eukaryotic cells: mitosis and cytokinesis		
Cell reproduction in prokaryotes: binary fission		
Meiosis, the process that produces gametes		
Cell death by apoptosis		

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

	Revise	Complete
Define the term 'gene'; give examples of types of genes		
List the four nucleotide bases; include which bases form complementary pairs and the types of bonds between these pairs		
Describe the components of a nucleotide, including a drawing		
Describe the structure of DNA		
Compare and contrast DNA and RNA (overlaps with Chapter 2)		
Explain why DNA replication is considered to be 'semi-conservative'		
Describe DNA replication, including the roles of the three enzymes that are involved		
Compare the study of genomics and proteomics		
Investigate the Human Genome Project		
Define the terms 'asexual reproduction', 'sexual reproduction' and 'gamete'		
Describe the structure of a eukaryotic chromosome; use a diagram; include the terms histone and centromere		

	Revise	Complete
Identify the types of chromosomes as autosomes or sex chromosomes		
Explain the term 'heterosome' by using an example related to humans		
Identify a karyotype, including normal vs abnormal karyotypes		
Explain the term 'homologous' by drawing a homologous pair of chromosomes; label a locus on your drawing		
Demonstrate your understanding of haploid and diploid by listing the haploid and diploid number for human cells (gametes and somatic cells)		
Define the term 'allele'; include an example of the alleles for a human trait		
Describe the structure of a prokaryotic chromosome		
Explain what a plasmid is and the unique features of a plasmid		
Contrast the DNA of a eukaryote with the DNA of a prokaryote		
Describe each phase of the cell cycle; use a diagram		
Recall the phases of cell division: mitosis and cytokinesis		
Compare mitosis in eukaryotes with binary fission in prokaryotes		
Summarise the inputs and outputs of meiosis		
Describe the stages of meiosis		
Compare mitosis and meiosis		
Describe how fertilisation produces a zygote		
Describe the process of apoptosis		