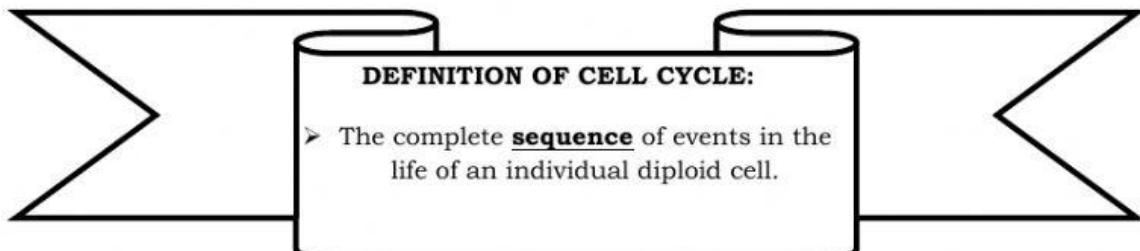


3.2 THE CELL CYCLE

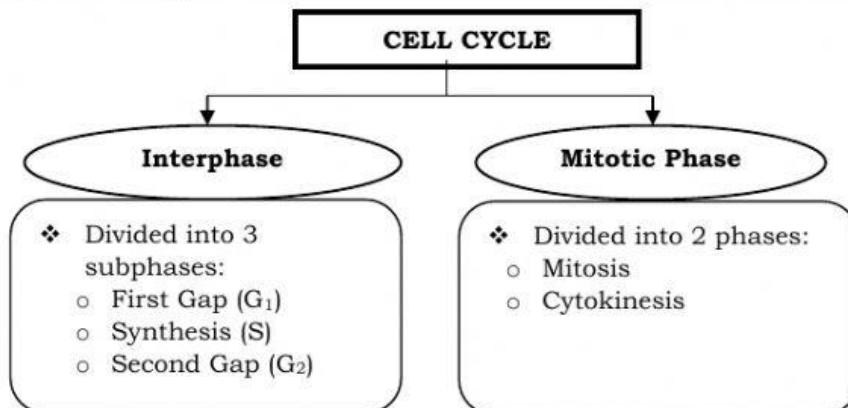
Learning Outcome

At the end of this topic, students should be able to :

a) Explain the stages in cell cycle: Interphase and Mitotic Phase.



1. Stages in Cell Cycle



Exercise 3.2 (a): Fill in the blanks with words that best explain the events during cell cycle.

No.	Phase	Explanation
1.	INTERPHASE <p>INTERPHASE</p> <p>Centrosomes (with centriole pairs) Aster Chromatin (duplicated)</p> <p>Nucleolus Nuclear envelope Plasma membrane</p>	<p>First Gap (G₁)</p> <p>Cell grows and increase in size</p> <ul style="list-style-type: none"> ✓ Increase the no. of _____ (e.g. mitochondria, ribosome) ✓ Volume of cytoplasm _____ ✓ Protein synthesis occur ✓ Synthesis of, lipid, carbohydrate and various enzymes that are required in S phase. ✓ Chromosome in _____ form. <p>Synthesis (S)</p> <p>DNA synthesis phase.</p> <ul style="list-style-type: none"> ✓ DNA _____ & chromosome _____ forming two identical _____ ✓ the amount of DNA _____ ✓ Chromosome in chromatin form <p>Second Gap (G₂)</p> <p>Cell grows more (continue increase in size & no. of organelles)</p> <ul style="list-style-type: none"> ✓ Energy stores are _____

			<ul style="list-style-type: none"> ✓ Centrosome duplicated ✓ Increase in size of _____ ✓ Completes preparation for cell division.
2.	MITOTIC PHASE (M Phase)	Mitosis ¹ and Cytokinesis ²	<p>1. Karyokinesis (Nuclear Division) Divides the nucleus & distributes the chromosomes to the daughter nuclei.</p> <p>✓ Divided into 4 stages in mitosis:</p> <ul style="list-style-type: none"> ➤ _____ ➤ _____ ➤ _____ ➤ _____ <p>2. Followed by cytokinesis (cytoplasmic division)</p> <ul style="list-style-type: none"> • Divide cell into two (2) daughter cells. 