

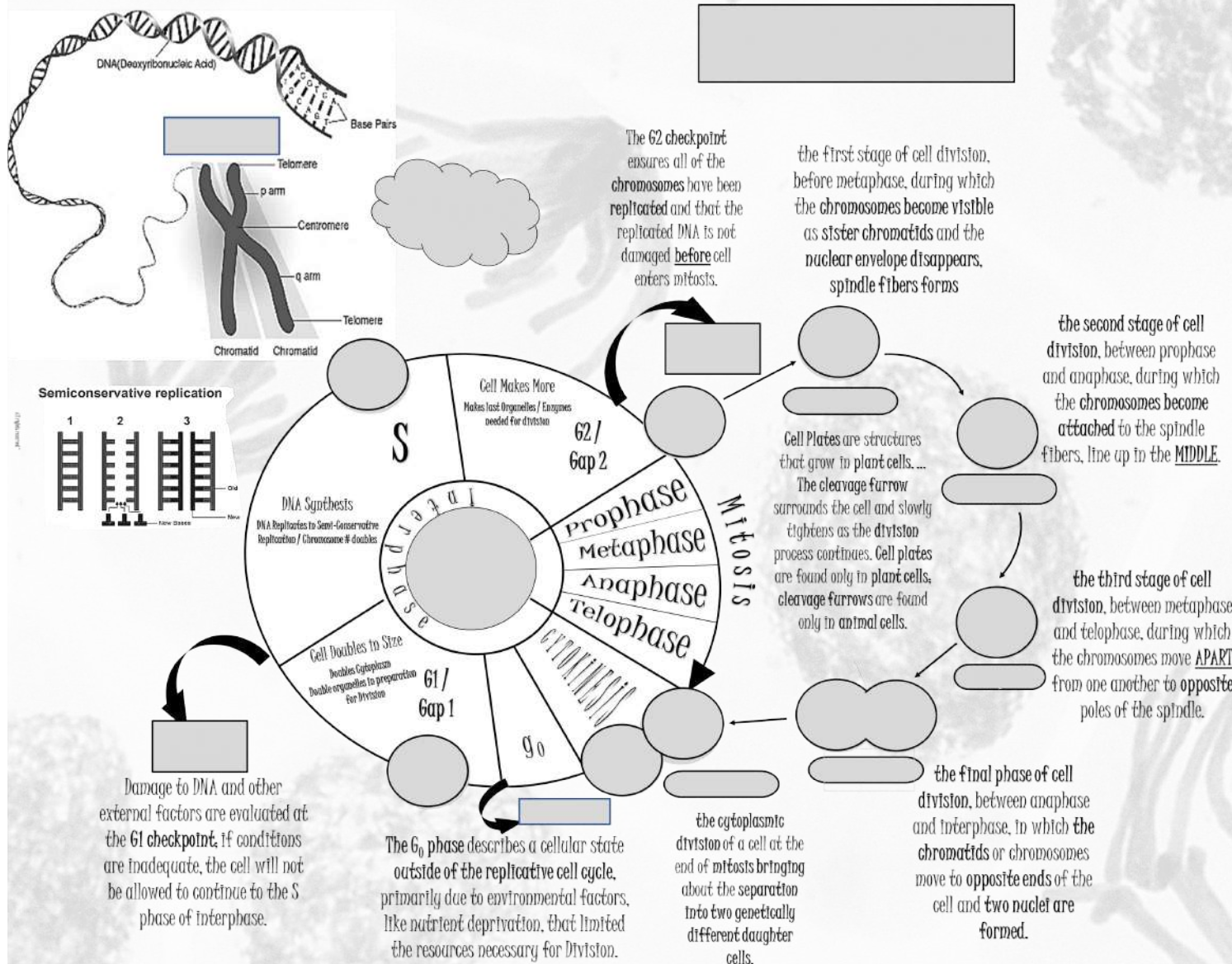
The Cell Cycle

- **What:** The cell cycle is a four-stage process in which the cell increases in size (gap 1, or G₁, stage), copies its DNA (synthesis, or S, stage), prepares to divide (gap 2, or G₂, stage), and divides (mitosis, or M, stage). The stages G₁, S, and G₂ make up interphase, which accounts for the span between cell divisions.

- **Why:** The most basic function of the cell cycle is to duplicate accurately the vast amount of DNA in the chromosomes and then segregate the copies precisely into two genetically identical daughter cells. For Growth &/or Repair

- **When:** Cells begin dividing via this method post fertilization / zygote formation

- **Type of Cells:** Every somatic cell in an organism's body undergoes mitosis, this includes skin cells, blood cells, bone cells, organ cells, the structural cells of plants and fungi, etc. Whereas sexual reproductive/gametic cells (sperm, eggs, spores) undergo meiosis.

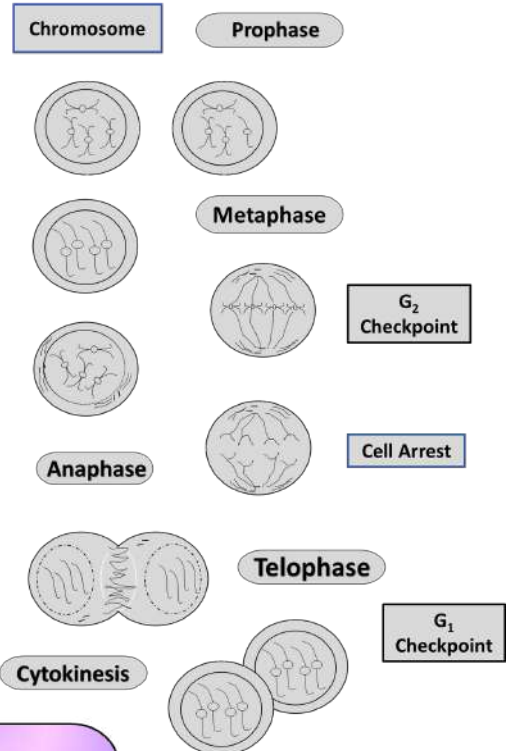
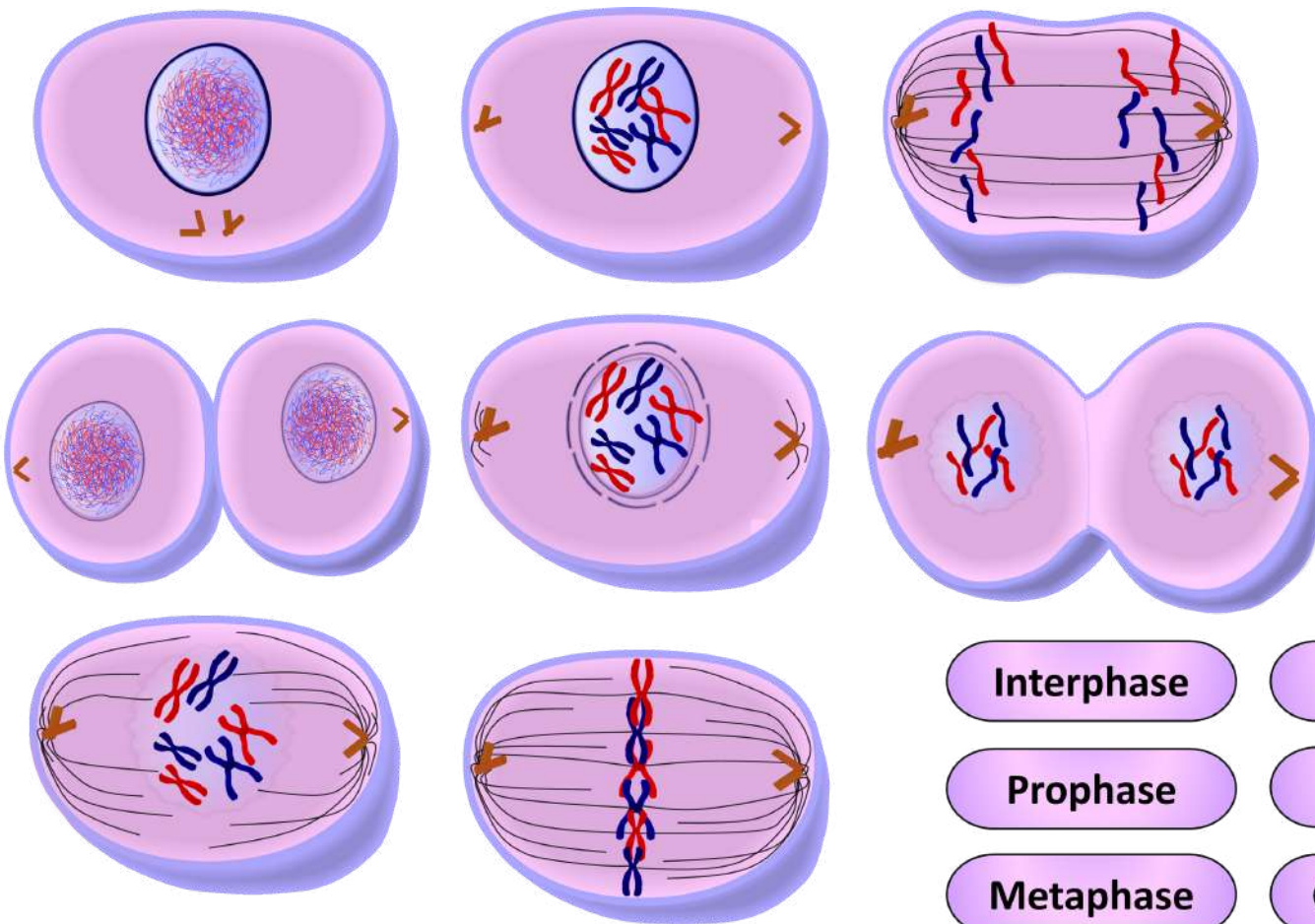


Cancer: Uncontrolled, unregulated cell division. The cell cycle or the proteins (cyclins) that control cell division have broken down. Causes defects in genes that help regulate the cycle. Cells Keep Dividing = **TUMOR**

There are two main classifications of **tumors**. One is known as **benign** and the other as **malignant**. A **benign tumor** is a tumor that does not invade its surrounding tissue or spread around the body. A **malignant tumor** is a tumor that may invade its surrounding tissue or spread around the body - **metastasis**

Cell Division

IPMAT - C



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|------------|-------------|
| Interphase | Anaphase |
| Prophase | Telophase |
| Metaphase | Cytokinesis |

The Cell Cycle

