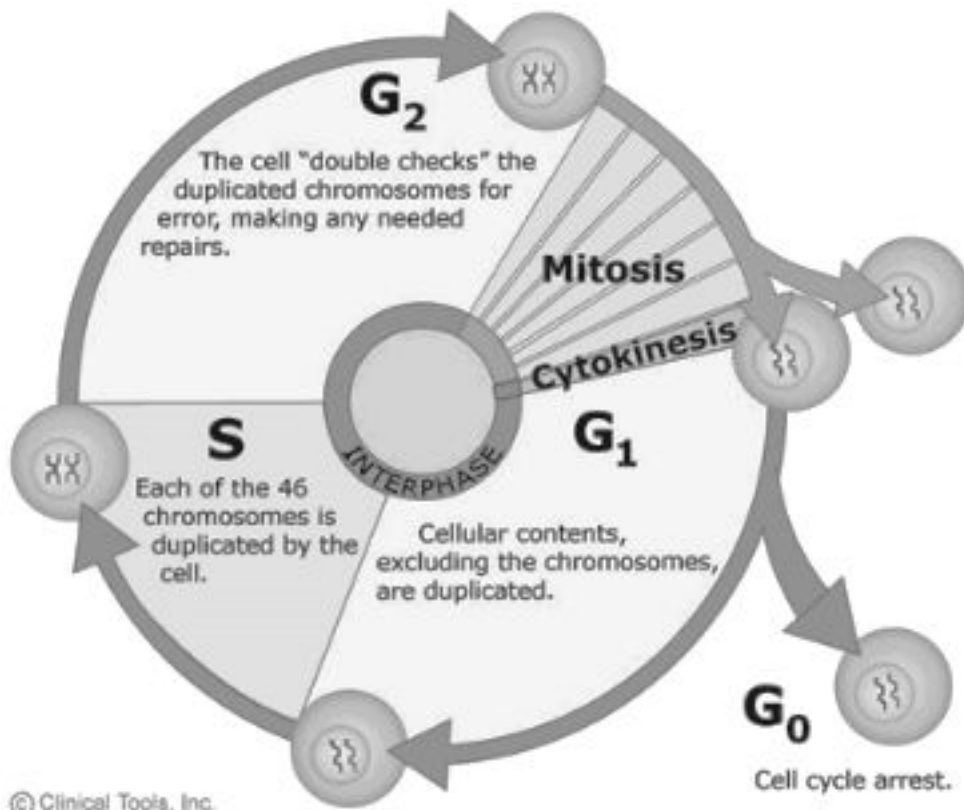


Cell Cycle & Mitosis (Honors)

The Cell Cycle:

1. A _____ of cell growth and division during an _____.
2. Interphase (G₁, S & G₂): collection of the first three phases where a cell spends 90% of its life
 - a. _____



When are the chromosomes duplicated?

Hypothesize what you think the purpose of the cell cycle is.

THE CELL CYCLE - Break Down

G₁ Phase - _____ duplicate (double so there are TWO sets)

S Phase - _____ duplicate

G₂ Phase - _____ by checking for errors in the chromosomes

THE CELL CYCLE - Specific Cell Types

An _____ cell cycle can lead to _____
_____ which leads to different types of _____

Internal regulation - cells need to be _____ to proceed within the cycle

Stomach cells are reproduced in 3 days, while brain cells never reproduce.

Why?

Mitosis (Asexual reproduction):

1. Process by which the cell's nucleus is divided into _____
2. Each nuclei will have the _____ of genetic material
3. Purpose: _____ & _____

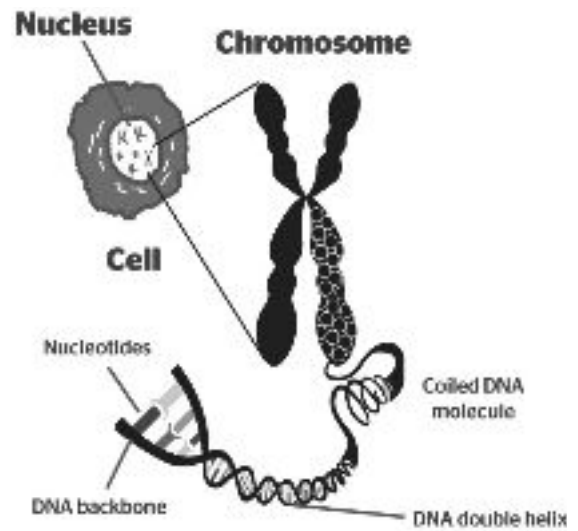
DNA & AKA's:

Chromosome – one piece of DNA; has 1000's of genes. Humans have 46 chromosomes.

Eukaryotes: shape of "X" Prokaryotes: shape of "O"

Chromatid – one half of a eukaryotic chromosome. This term is used in mitosis, when the chromosomes split in half and move to opposite sides of a cell

Centromere – holds the **two chromatids** of one chromosome together



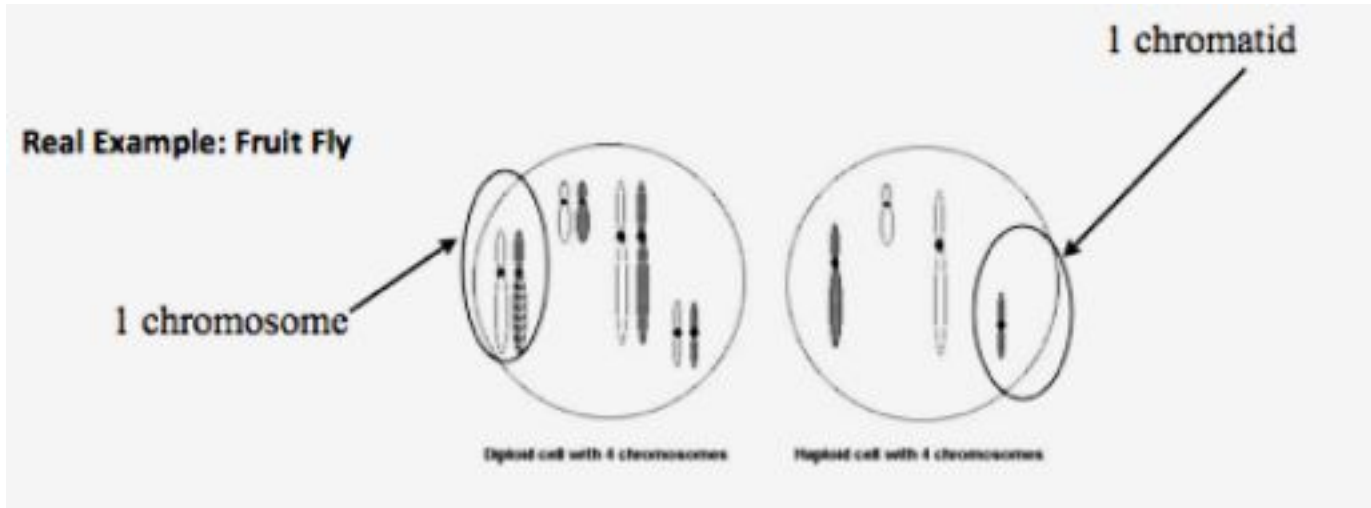
Stages of Mitosis:

<u>Prophase</u>	Chromosomes _____, nuclear envelope dissolves and spindle fibers form
<u>Metaphase</u>	Chromosomes are lined up in the _____ and the spindle fibers attach to each side of the chromatids
<u>Anaphase</u>	Chromatids are separated to _____. Spindle fibers now shorten.
<u>Telophase</u>	At _____ the chromatids are surrounded by a nuclear envelope
<u>Cytokinesis</u>	The cells are _____ and genetically identical

Different Types of Cells:

Diploid (2n): cell that has _____ sets of chromosomes ---Called body or somatic cells

Haploid (n): cell that has _____ set of chromosomes ----Called gametes



Explain the difference between the two cells.

Label each of the stages of Mitosis below and label chromatids:

