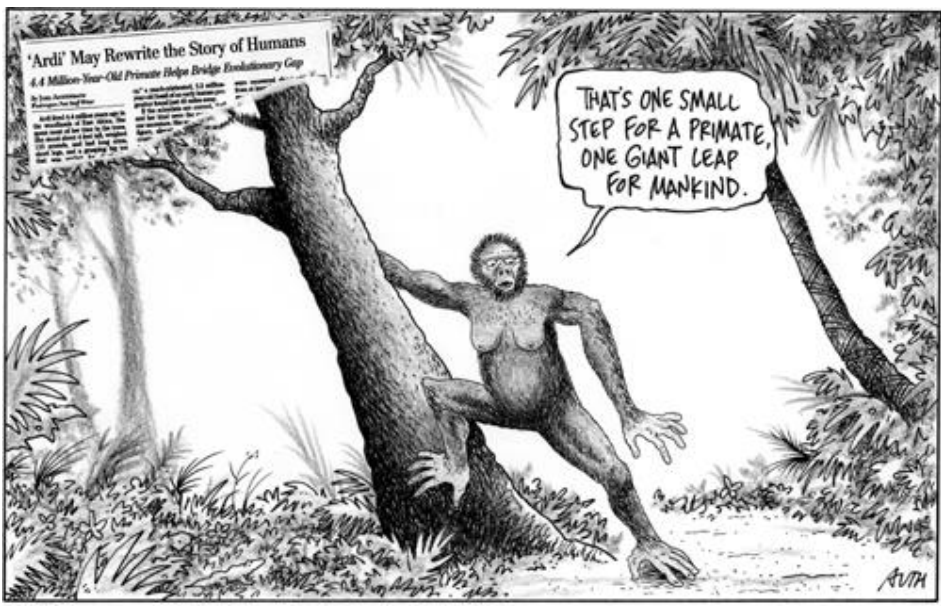


Dude, mitosis starts in five minutes... I can't believe you're not condensed yet.



Introduction to Unit 2 Biology

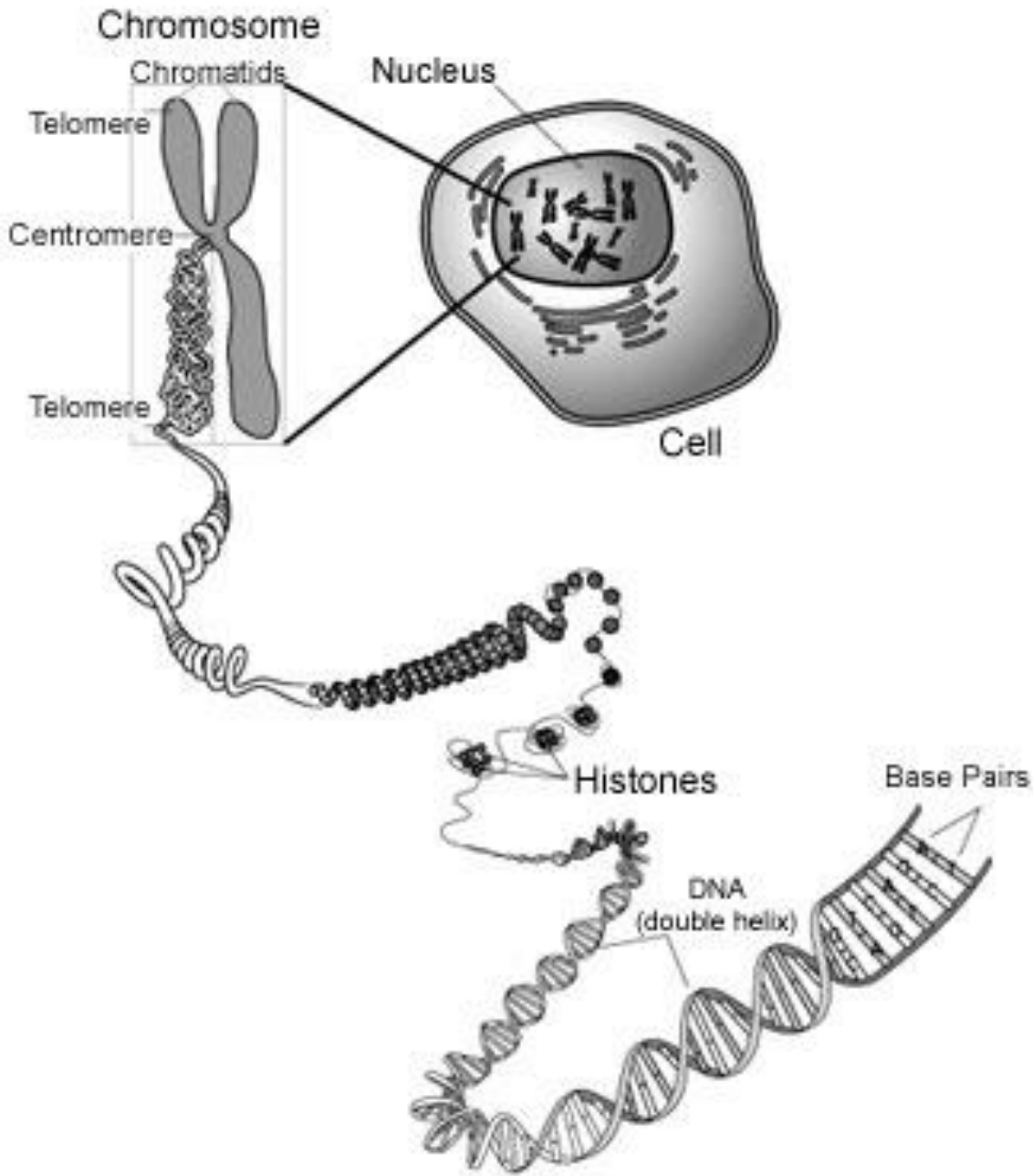
Glossary of Terms

- DNA
- Gene
- Allele
- Loci
- Chromosome
- Diploid
- Haploid
- Autosome
- Sex Chromosome
- Centromere
- Histone

DNA Overview

- Function(s) - cell division, protein synthesis
- Double helix
- Nucleotides
- Antiparallel
- Easy to manipulate

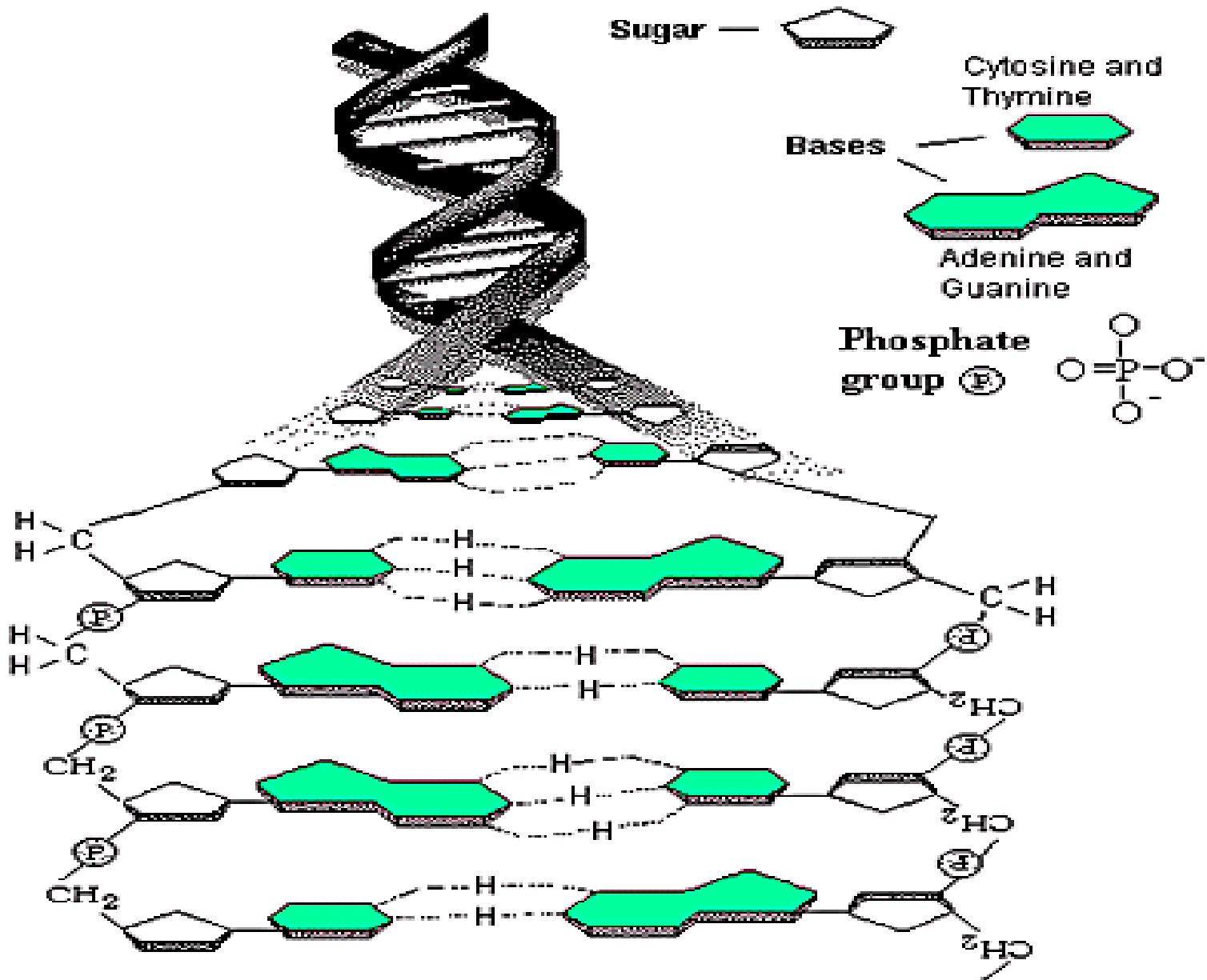




Human

- 2m DNA per cell
- 3 billion nucleotides
- 2% genes







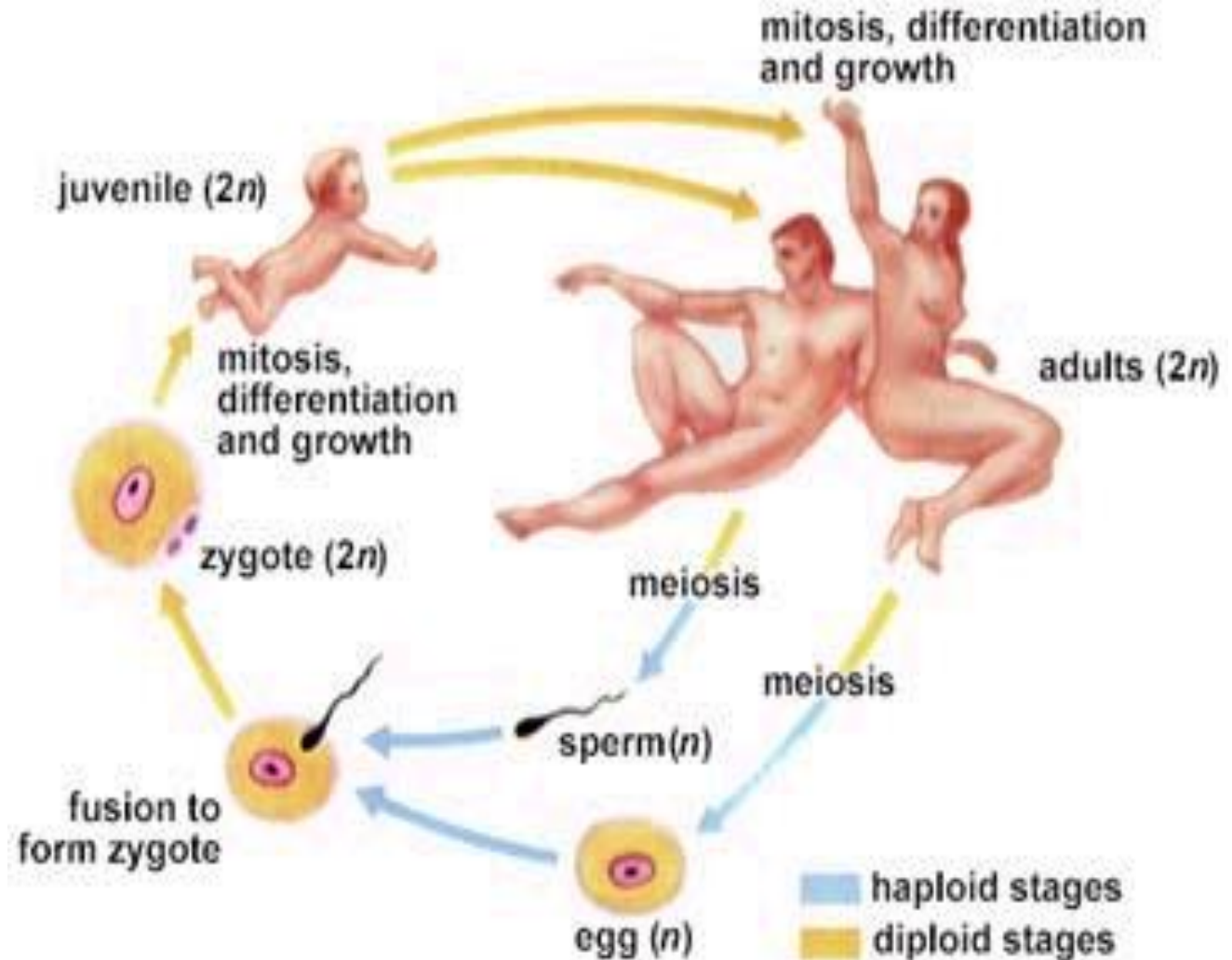
Bacteria Reproduction

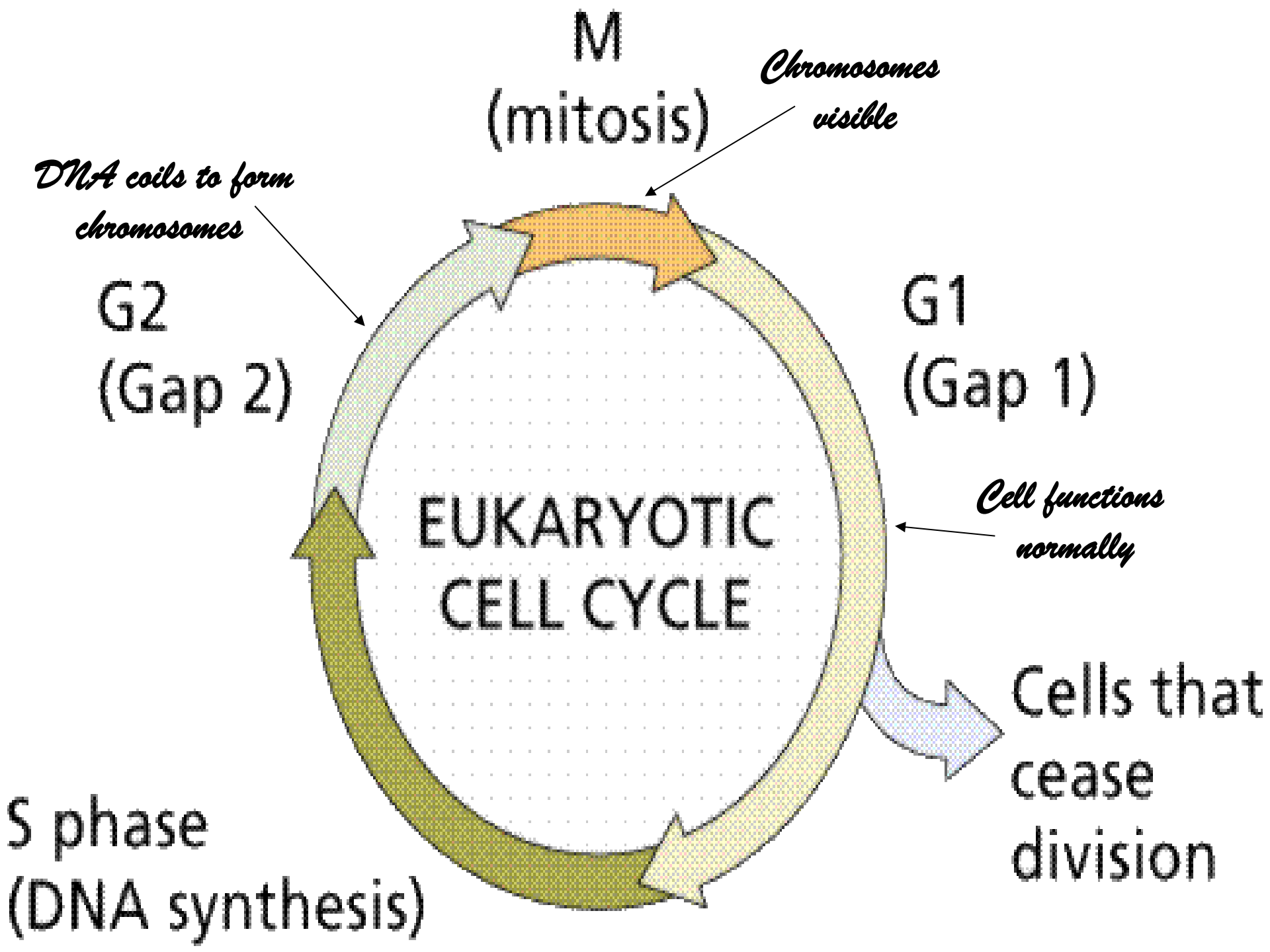
- Binary fission
- Every 20min
- Identical copies
- Plasmids useful in biotechnology
- Mutations only way variants form

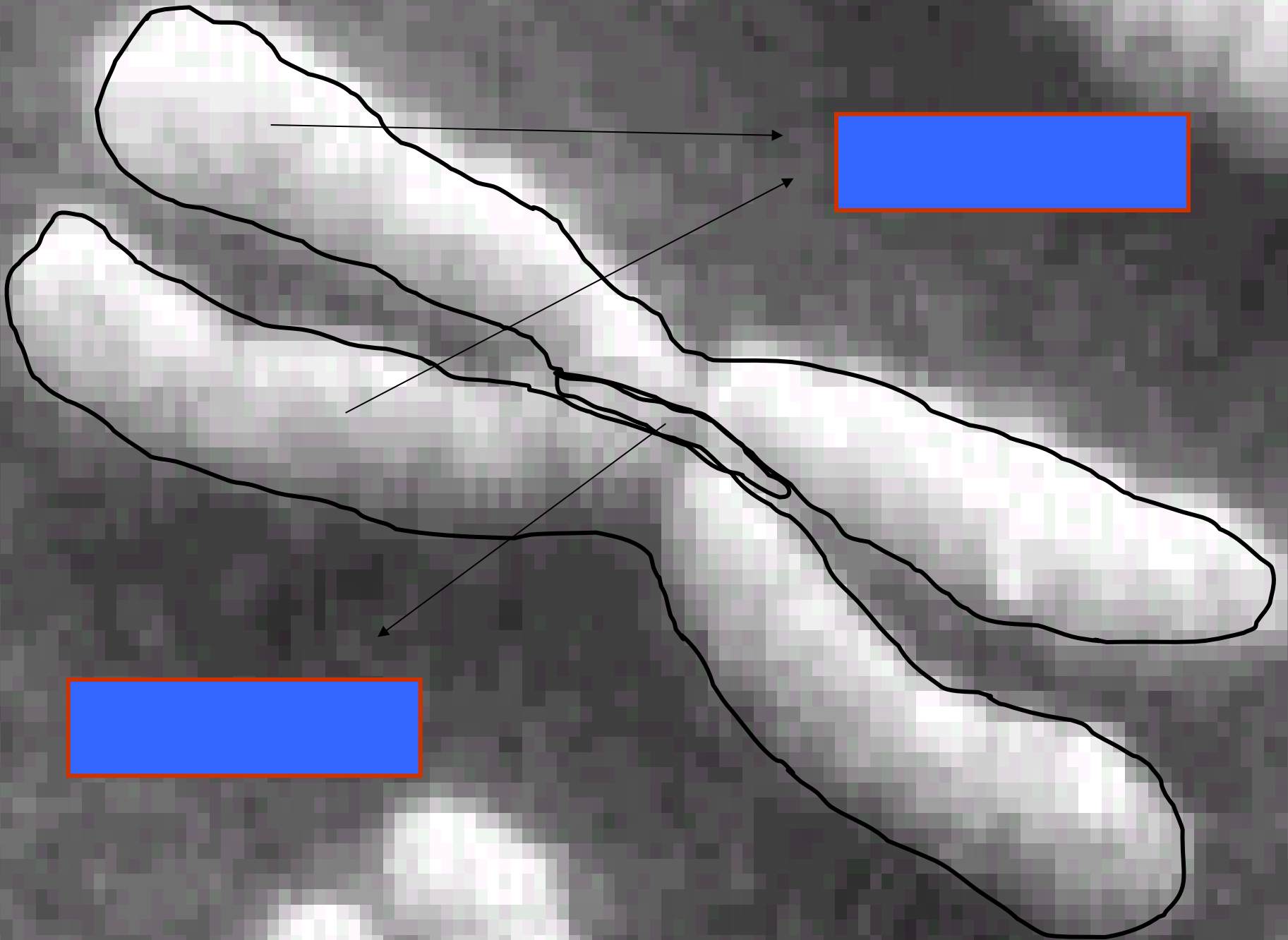


Cell Division

- Mitosis
- Meiosis

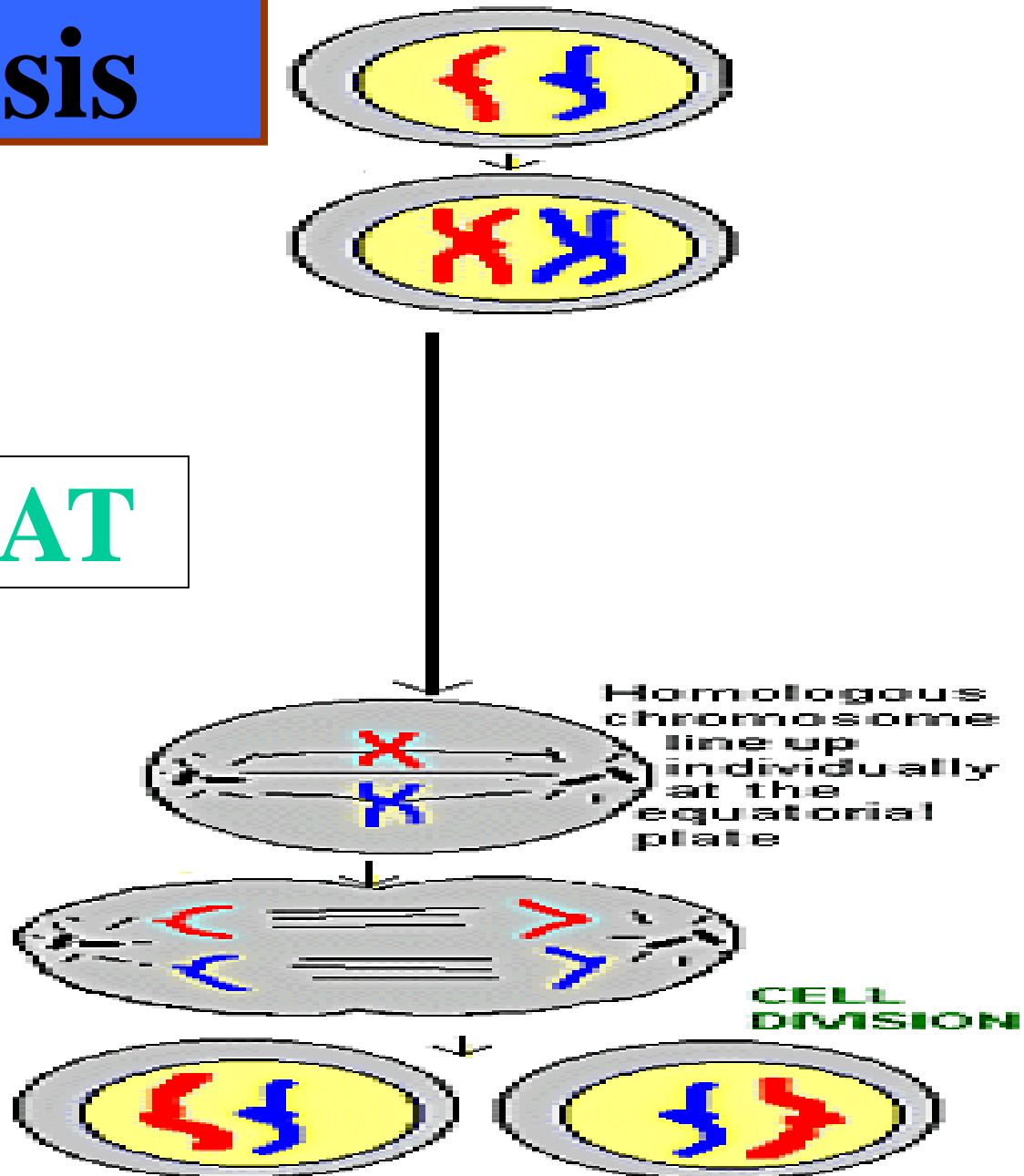


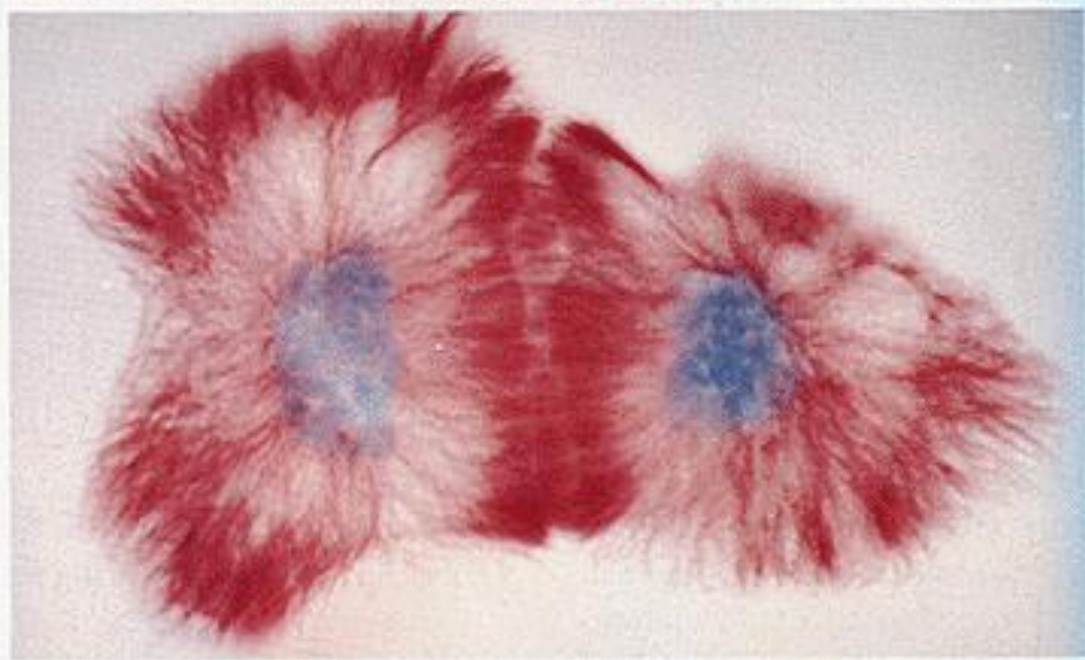
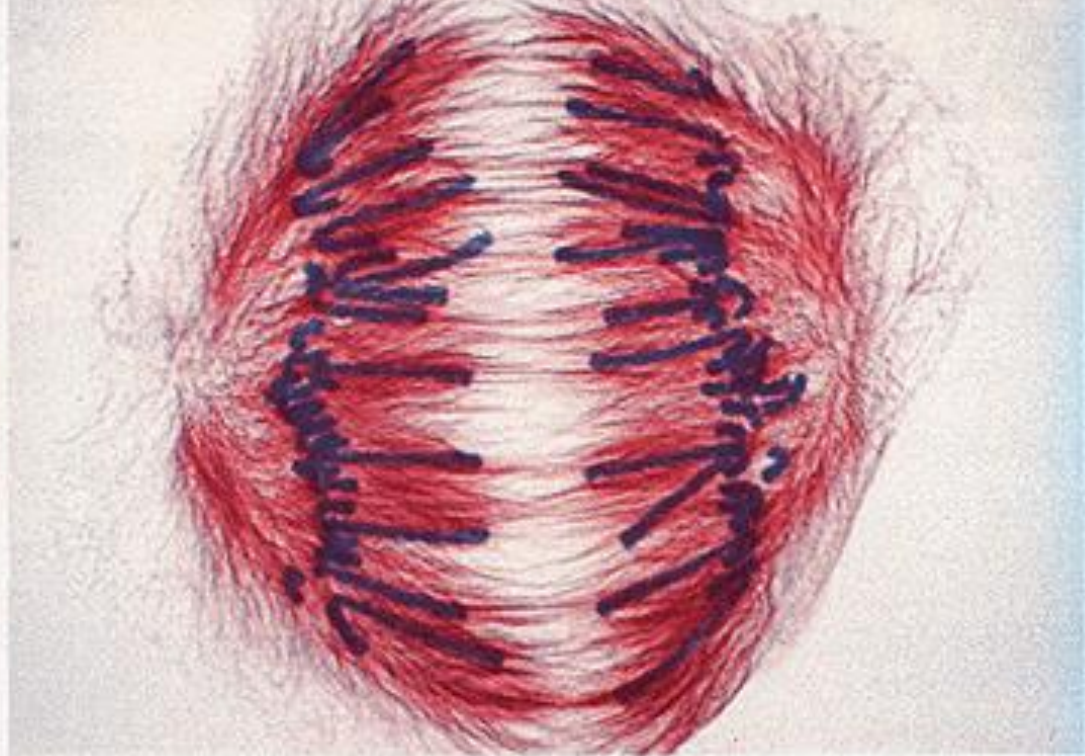
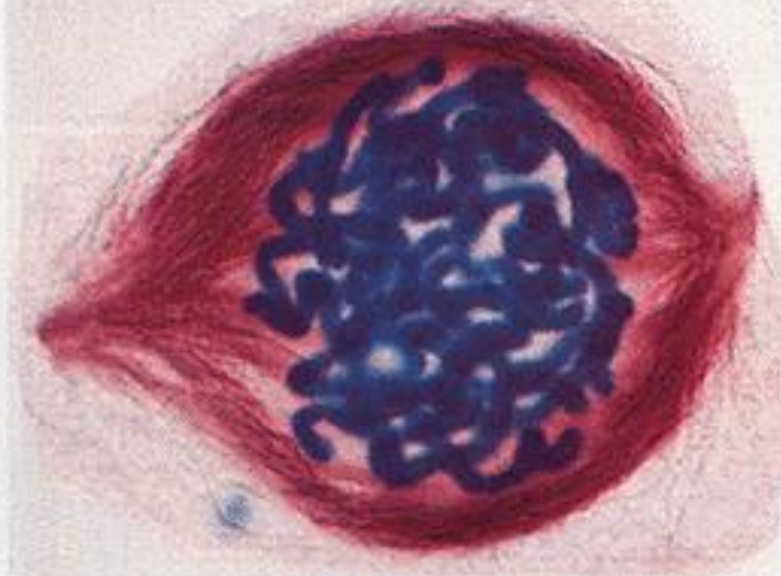




Mitosis

IPMAT





Apoptosis



- Programmed cell death
- Elimination of malignant cells (sickness)
- Eliminate dysfunctional cells (degraded)
- Eliminate unwanted cells (sculpting)
- Triggered by a series of steps
- External ligands or mitochondrial stress

Cell division out of control

- Production of malignant cells greater than the rate of elimination of them (apoptosis)
- Cancer
- Often cells in G₀ (not actively dividing)
- Carcinogens (UV, DDT, X-Rays)
- Genetic predisposition
- Treatment (chemotherapy, radiotherapy)