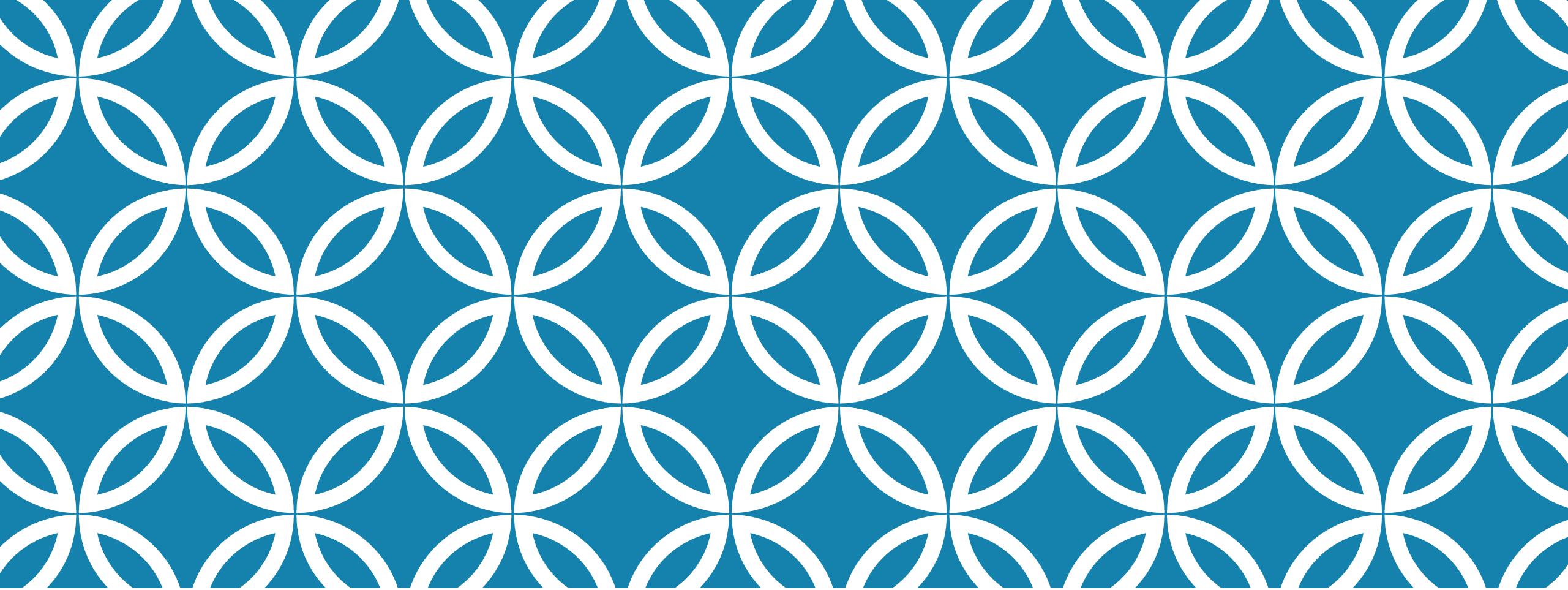
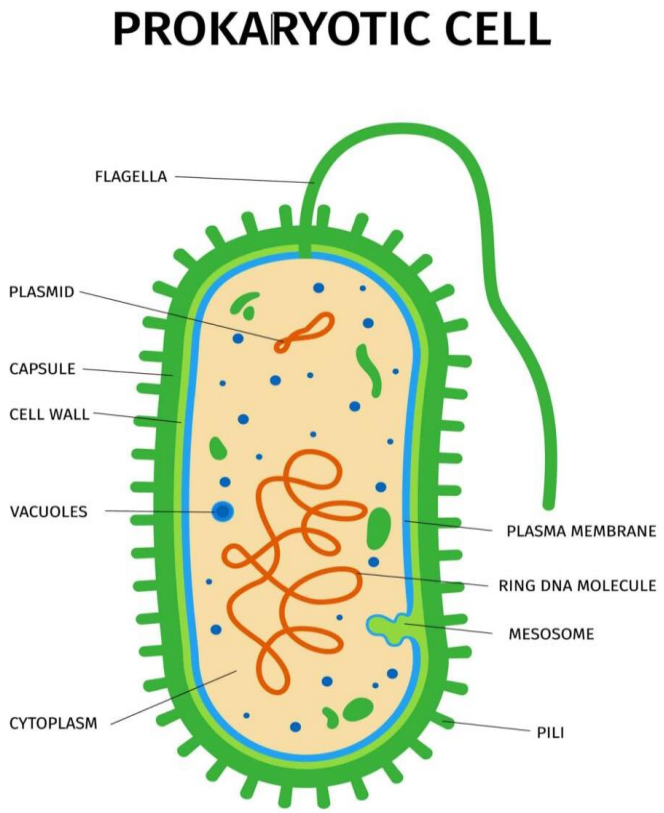
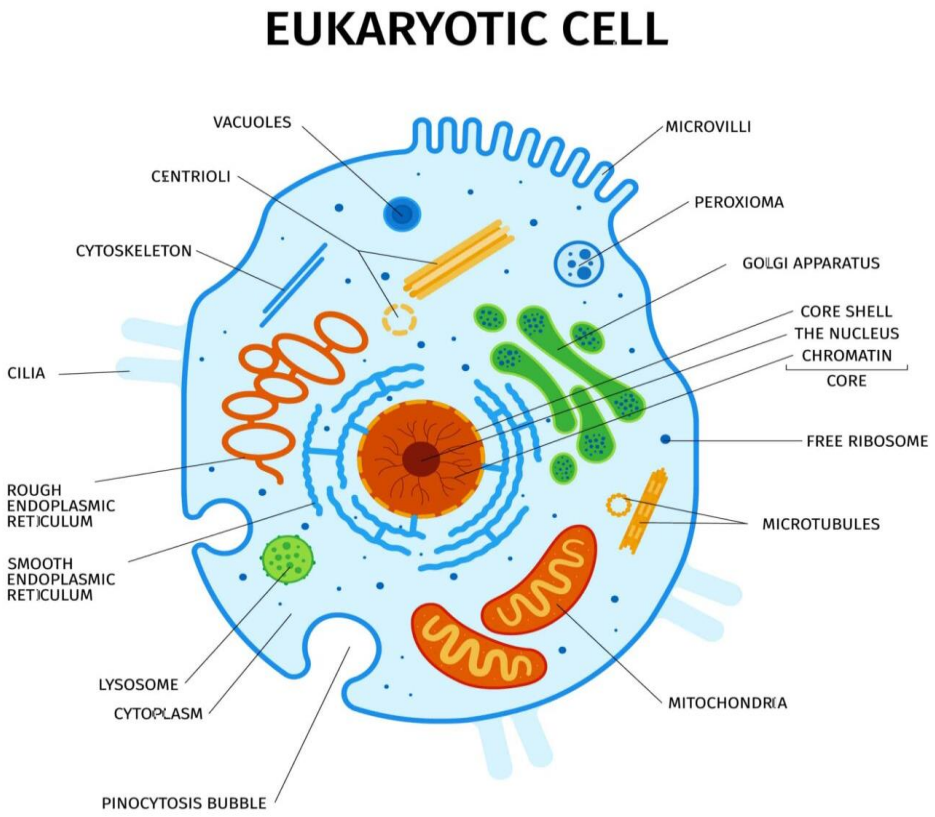


CELL, CELL DIVISION, HEREDITY

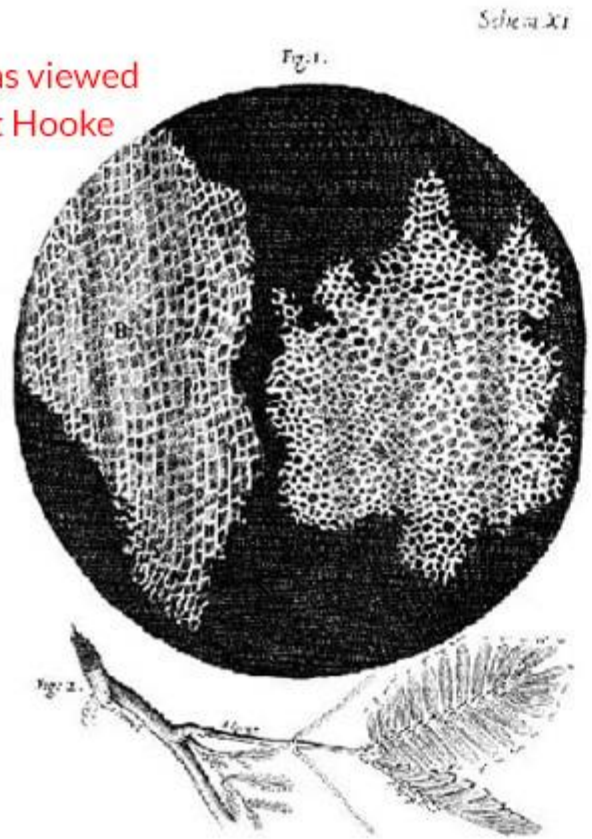
EKLAVYA 2024

CELL…

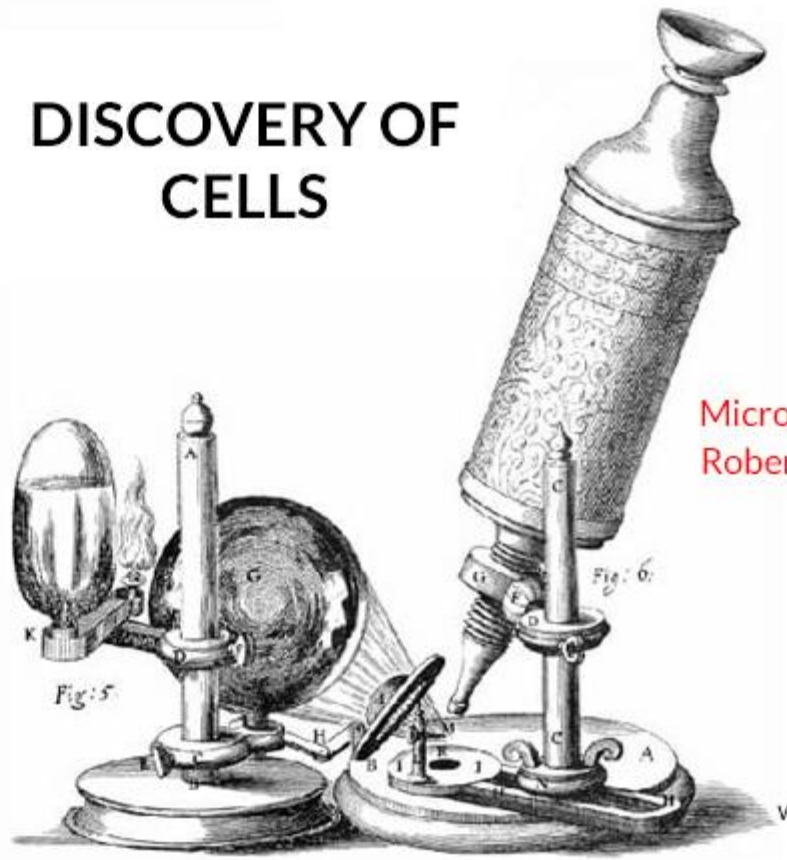

PROKARYOTIC CELL
FLAGELLA
PLASMID
CAPSULE
CELL WALL
VACUOLES
CYTOPLASM
PLASMA MEMBRANE
RING DNA MOLECULE
MESOSOME
PILI


EUKARYOTIC CELL
VACUOLES
CENTRIOLI
CYTOSKELETON
CILIA
ROUGH ENDOPLASMIC RETICULUM
SMOOTH ENDOPLASMIC RETICULUM
LYSOSOME
CYTOPLASM
PINOCYTOSIS BUBBLE
MICROVILLI
PEROXIOMA
GOLGI APPARATUS
CORE SHELL
THE NUCLEUS
CHROMATIN
CORE
FREE RIBOSOME
MICROTUBULES
MITOCHONDRIA

Cork cells as viewed by Robert Hooke

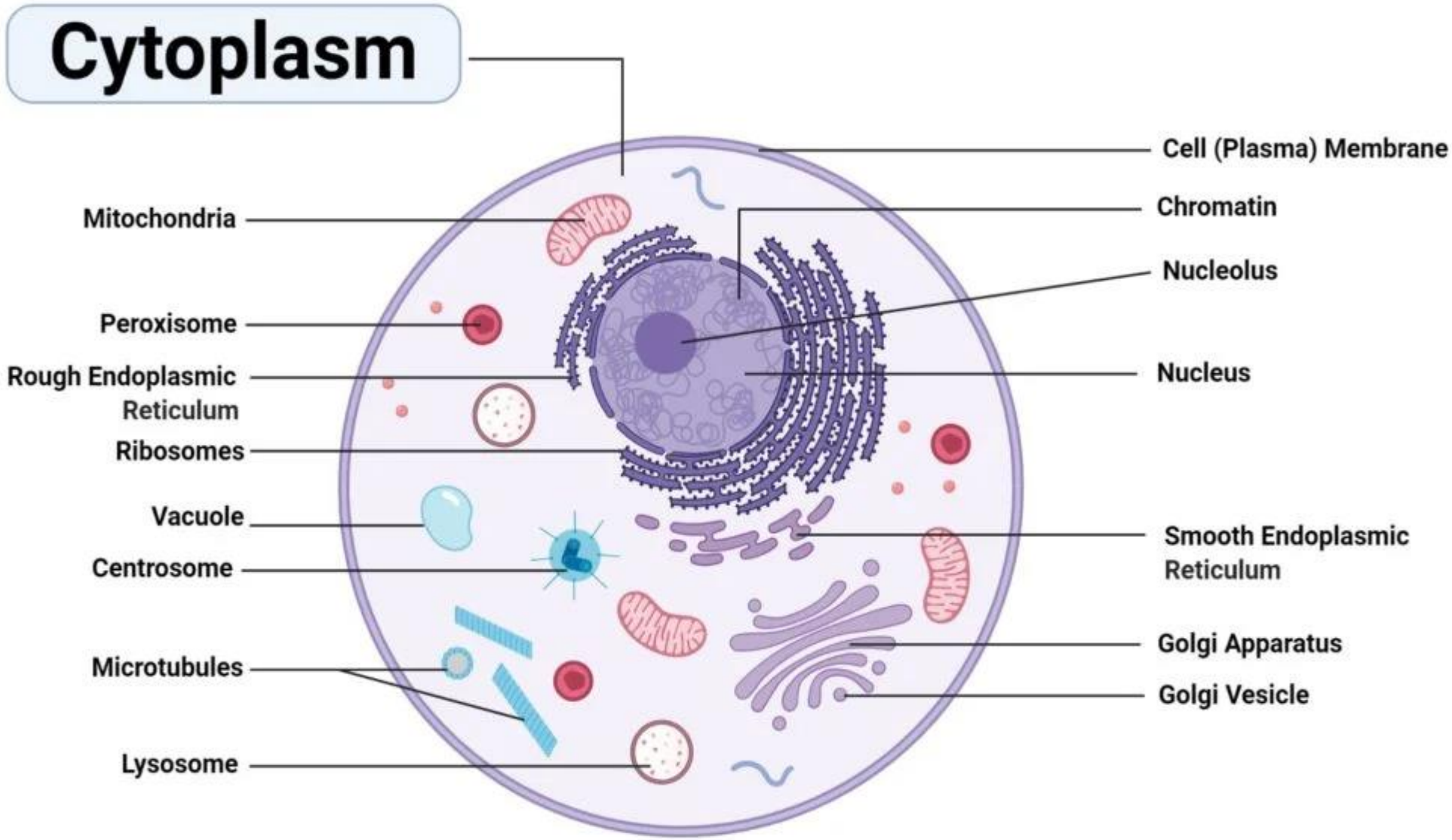


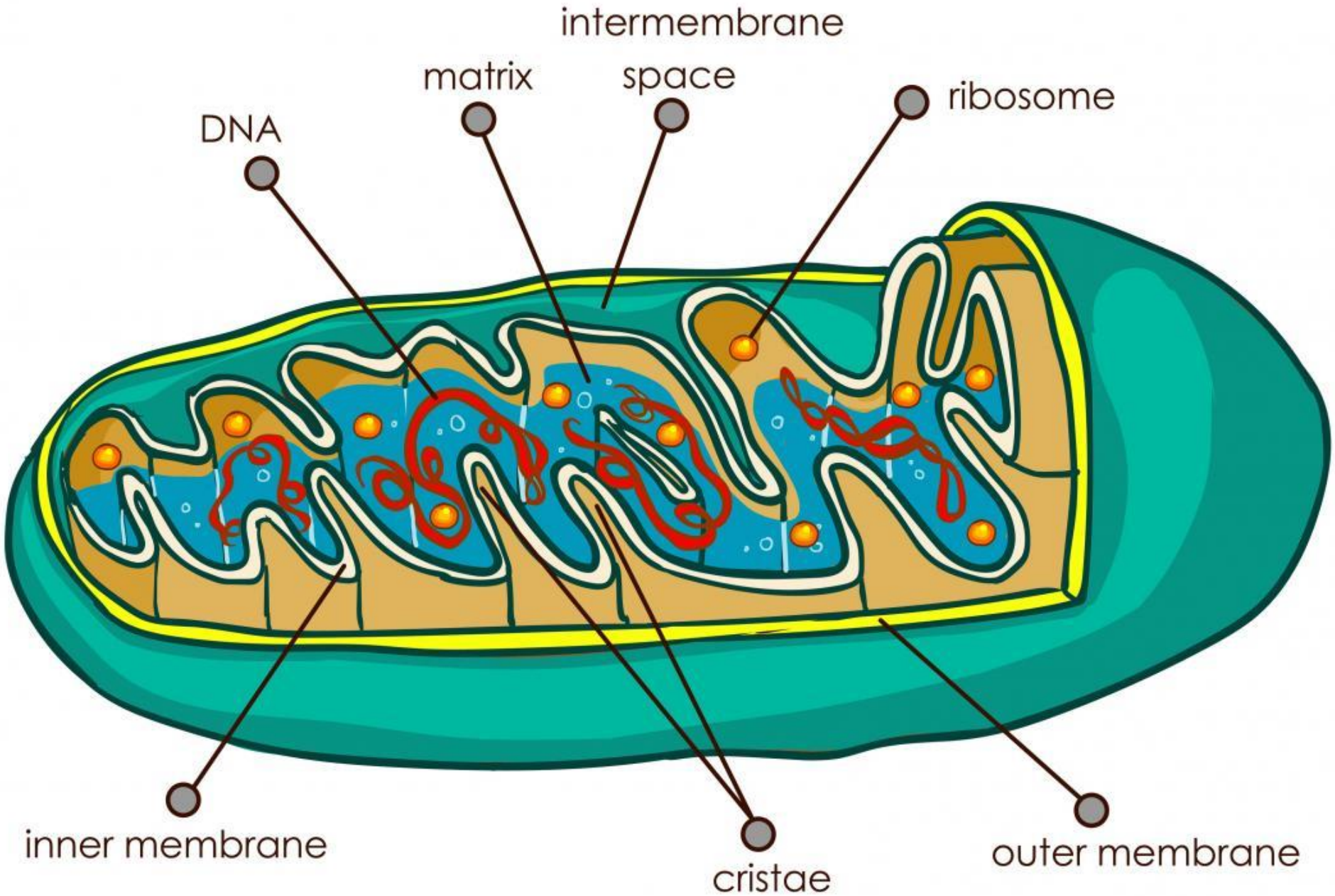
DISCOVERY OF CELLS

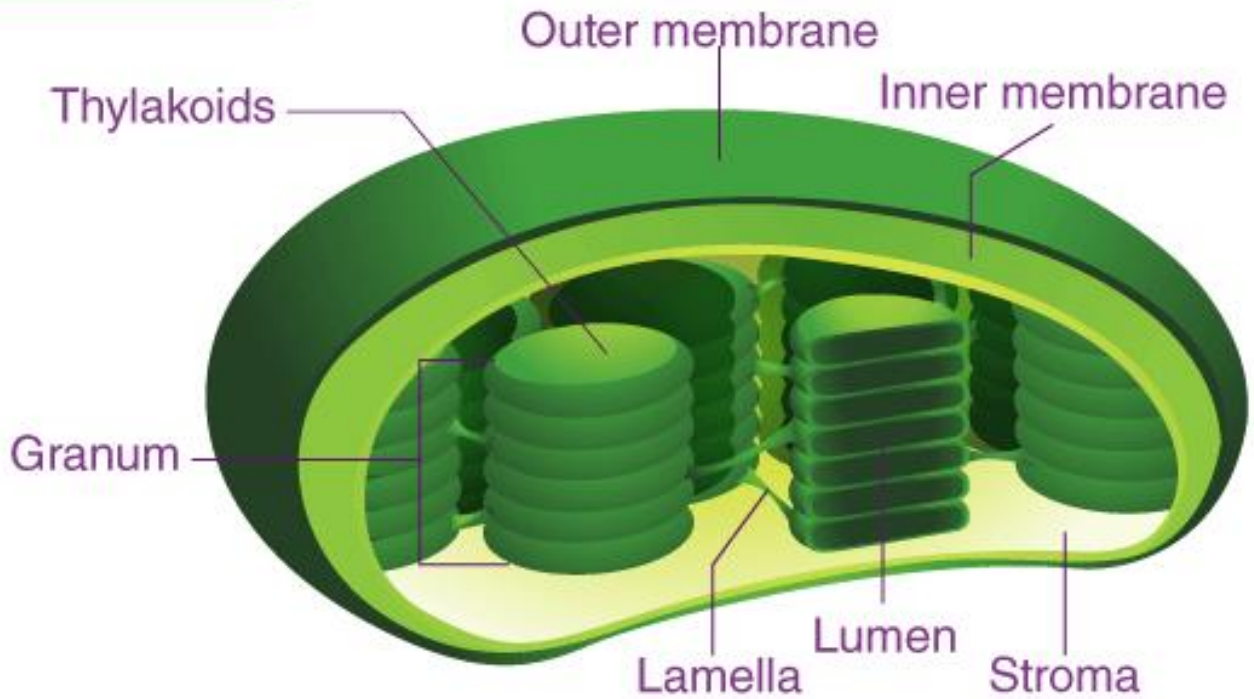


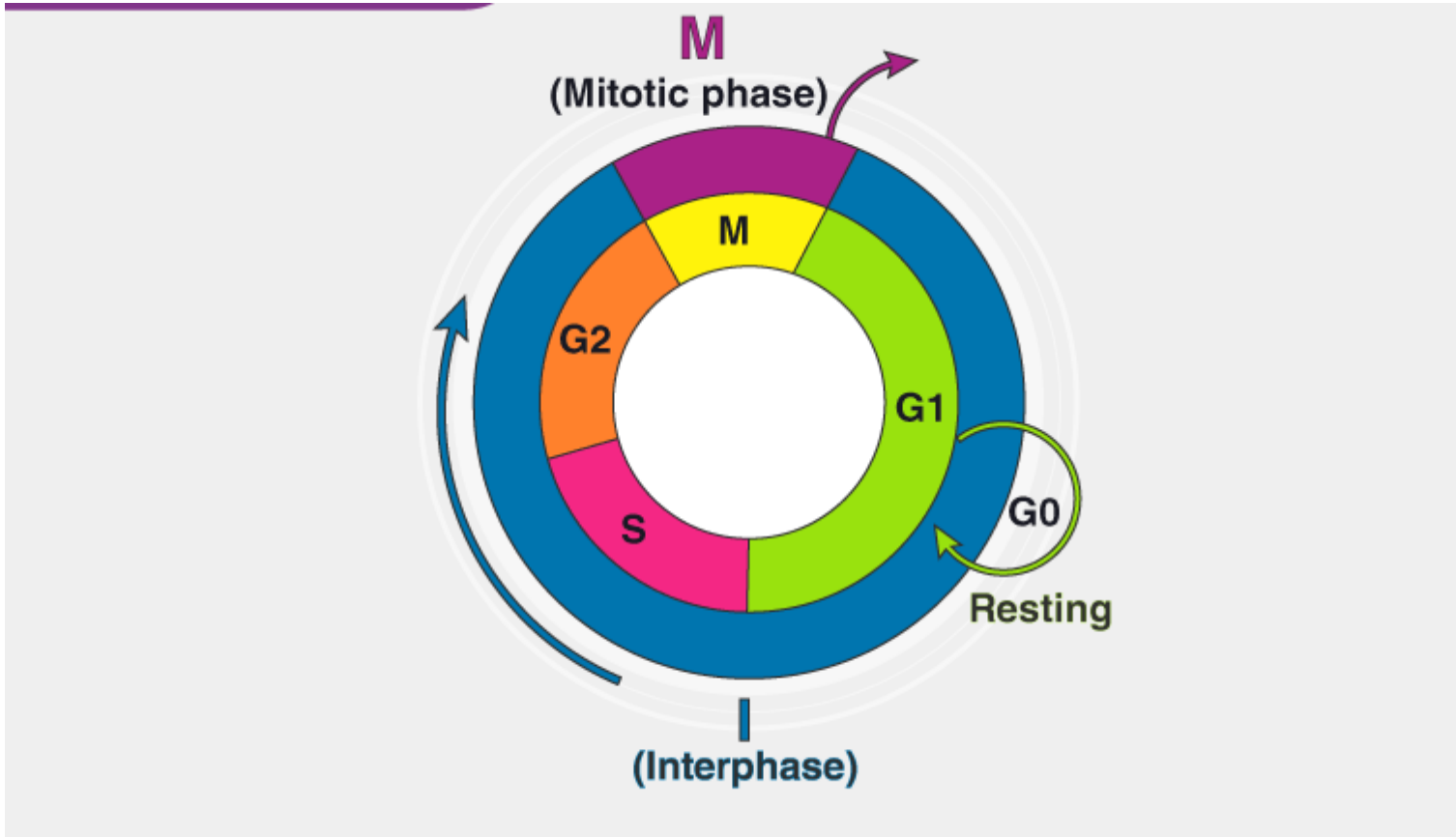
Microscope of Robert Hooke

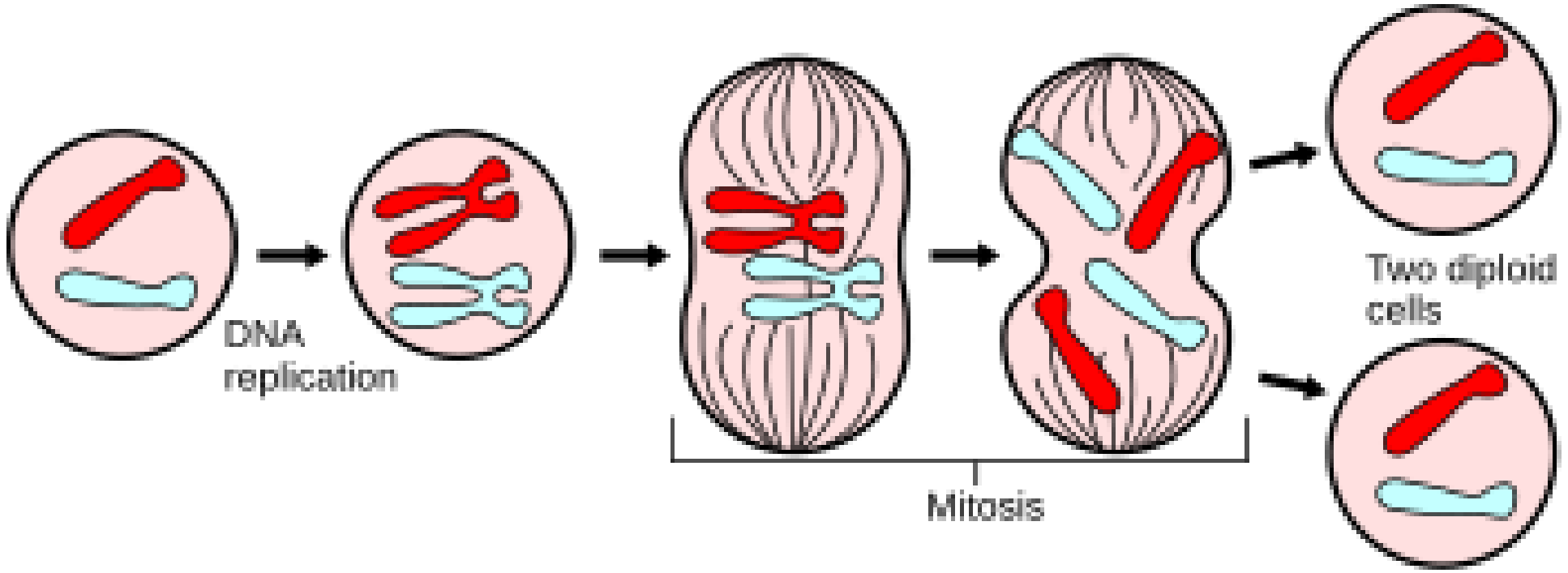
DASHAMLAV
www.dashamlav.com

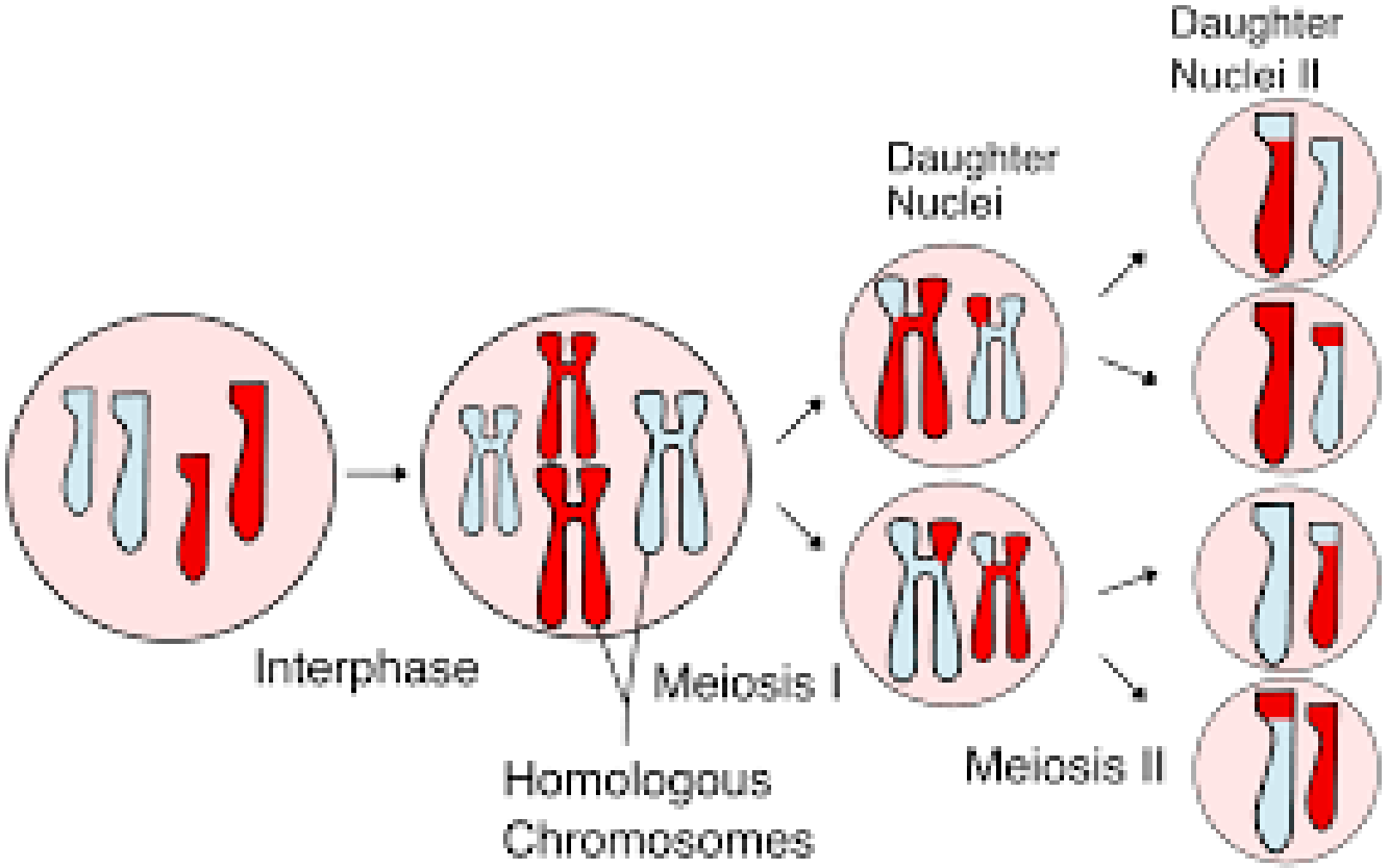

Cytoplasm
Cell (Plasma) Membrane
Mitochondria
Chromatin
Nucleolus
Peroxisome
Rough Endoplasmic Reticulum
Nucleus
Ribosomes
Vacuole
Smooth Endoplasmic Reticulum
Centrosome
Golgi Apparatus
Microtubules
Golgi Vesicle
Lysosome


intermembrane
space
matrix
ribosome
DNA
inner membrane
cristae
outer membrane


Outer membrane
Thylakoids
Inner membrane
Granum
Lamella
Lumen
Stroma


M
(Mitotic phase)
M
G2
G1
S
G0
Resting
(Interphase)


DNA
replication
Two diploid
cells
Mitosis


Daughter
Nuclei II
Daughter
Nuclei
Interphase
Meiosis I
Homologous
Chromosomes
Meiosis II

Mitosis vs Meiosis

Prophase

Duplicated chromosomes are two sister chromatids

Chromosome duplication 2n=4

Prophase I

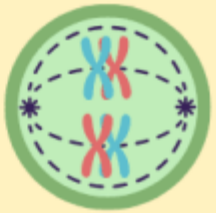
Meiosis I

Tetrads are two pairs of sister chromatids

Metaphase

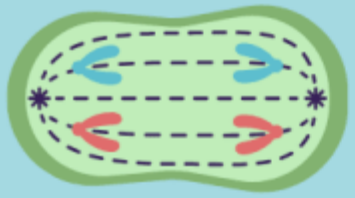
Duplicated chromosomes align

Metaphase I



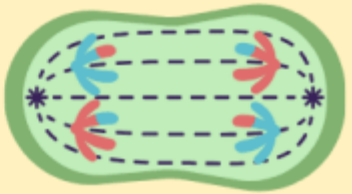
Tetrads align
Crossing-over

Anaphase
Telophase

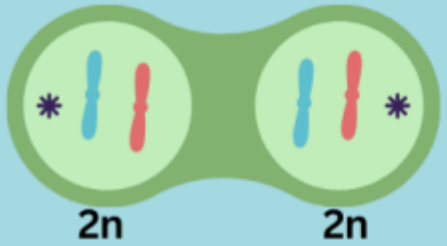


Sister chromatids separate

Anaphase I
Telophase I



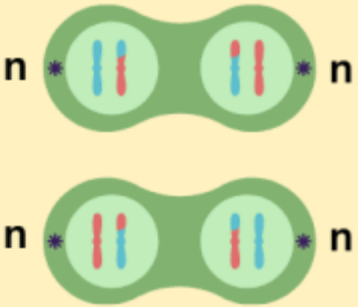
Homologous chromosomes separate



2 diploid daughter cells

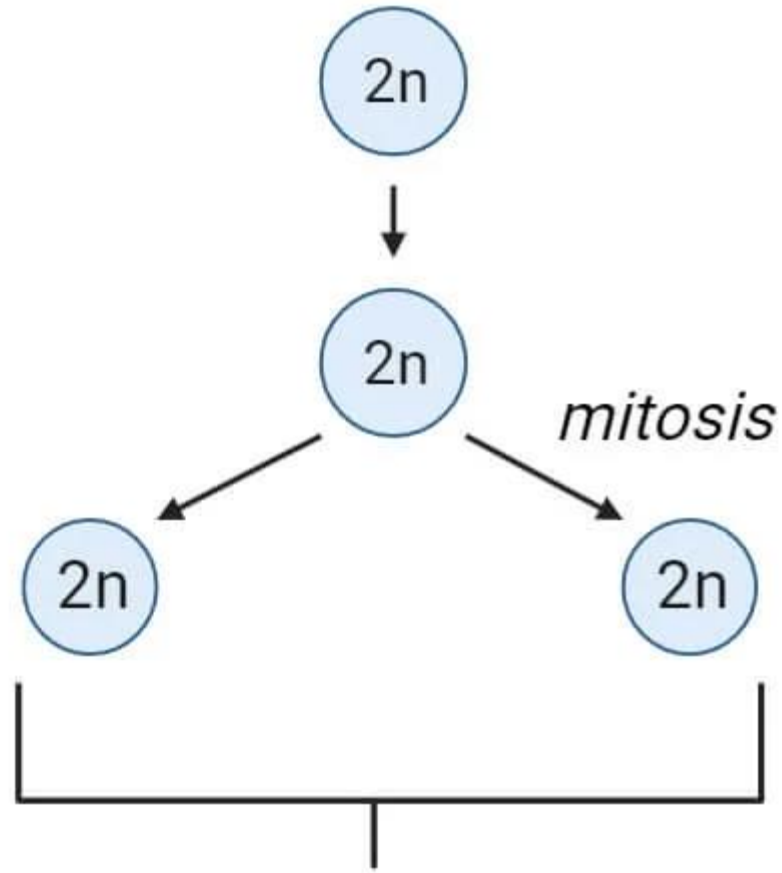
Sister chromatids separate in anaphase II

Meiosis 2

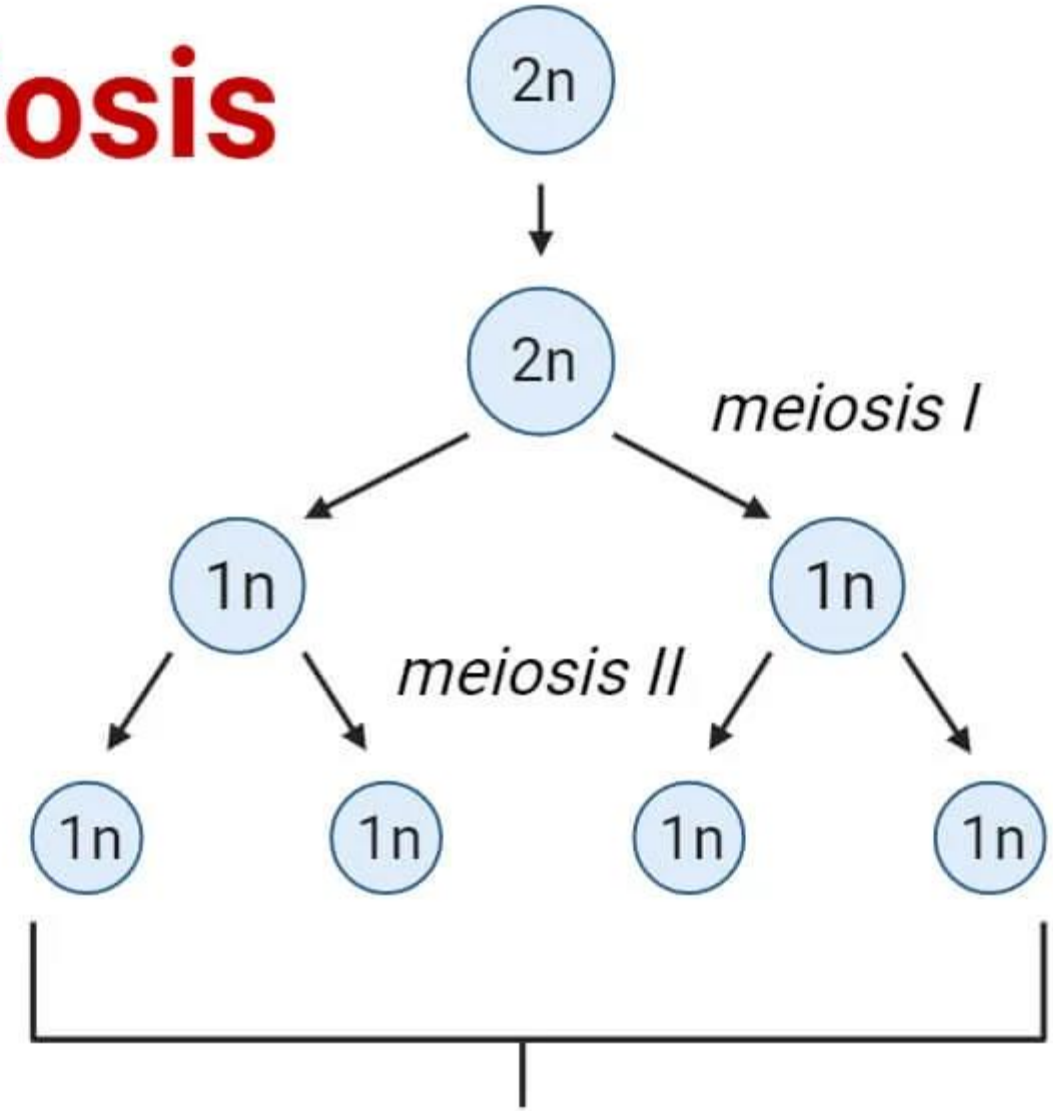


4 haploid daughter cells

Mitosis vs. Meiosis



Two diploid daughter cells



Four haploid daughter cells

Tall × Dwarf — Parent generation

(TT) (tt)

(T) (t) — Gametes

Tall

Tt — F_1 generation

F_1 generation selfing T t × T t

(T) (t) (T) (t) — gametes

— F_2 generation

♀ \ ♂	T	t
T	TT Tall	Tt Tall
t	tT Tall	tt Dwarf