

CYTOKINESIS TYPES



CELL PLATE FORMATION
FURROWING

CYTOKINESIS
TYPES

CYTOKINESIS CELL PLATE FORMATION

**CYTOKINESIS
CELL PLATE
FORMATION**

CELL PLATE FORMATION



CYTOSOL DIVISION
PLANT CELLS

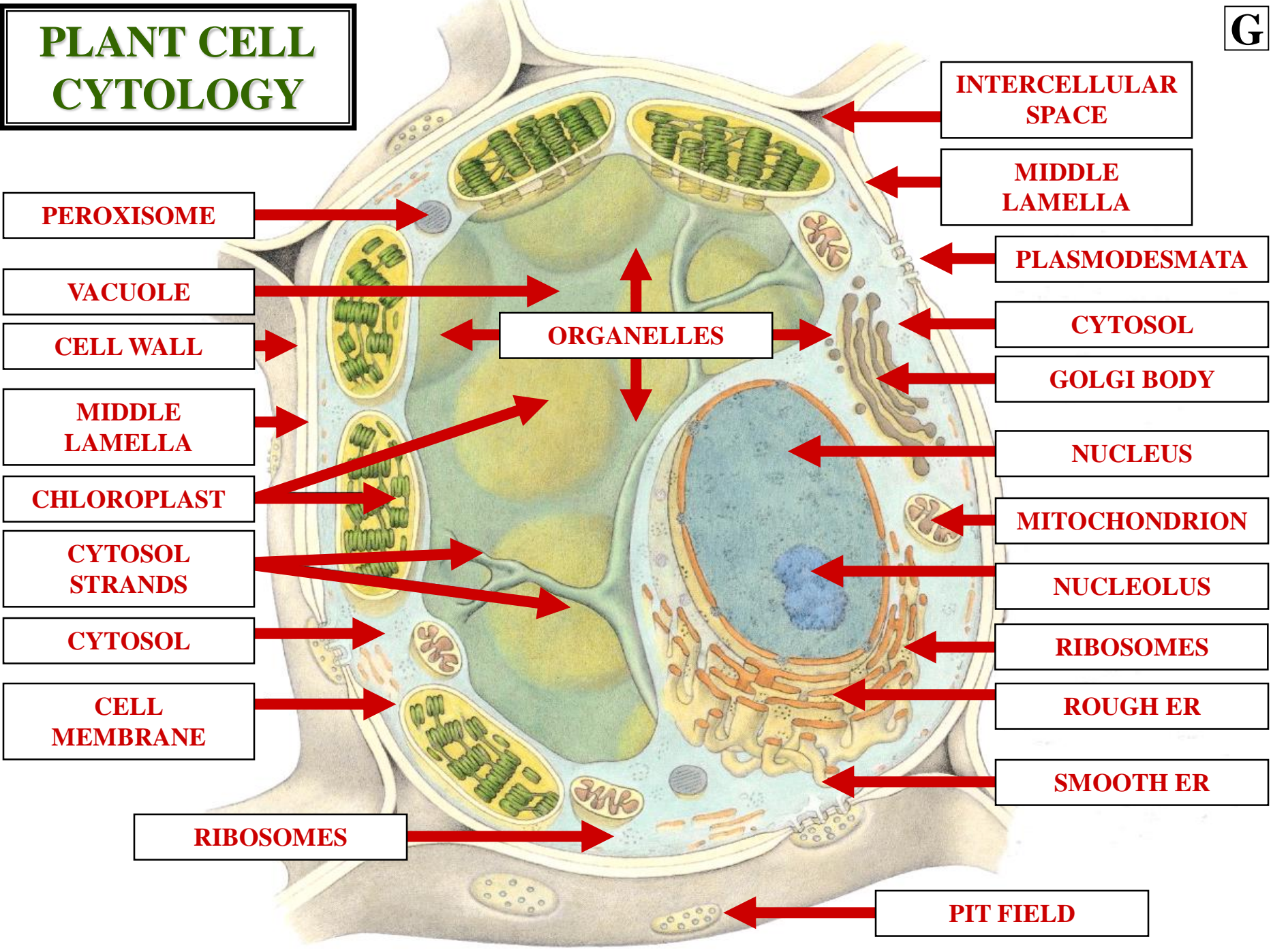
CELL PLATE
FORMATION



PLANT CYTOKINESIS



PLANT CELL CYTOLOGY



PEROXISOME

VACUOLE

CELL WALL

MIDDLE LAMELLA

CHLOROPLAST

CYTOSOL STRANDS

CYTOSOL

CELL MEMBRANE

RIBOSOMES

ORGANELLES

INTERCELLULAR SPACE

MIDDLE LAMELLA

PLASMODESMATA

CYTOSOL

GOLGI BODY

NUCLEUS

MITOCHONDRION

NUCLEOLUS

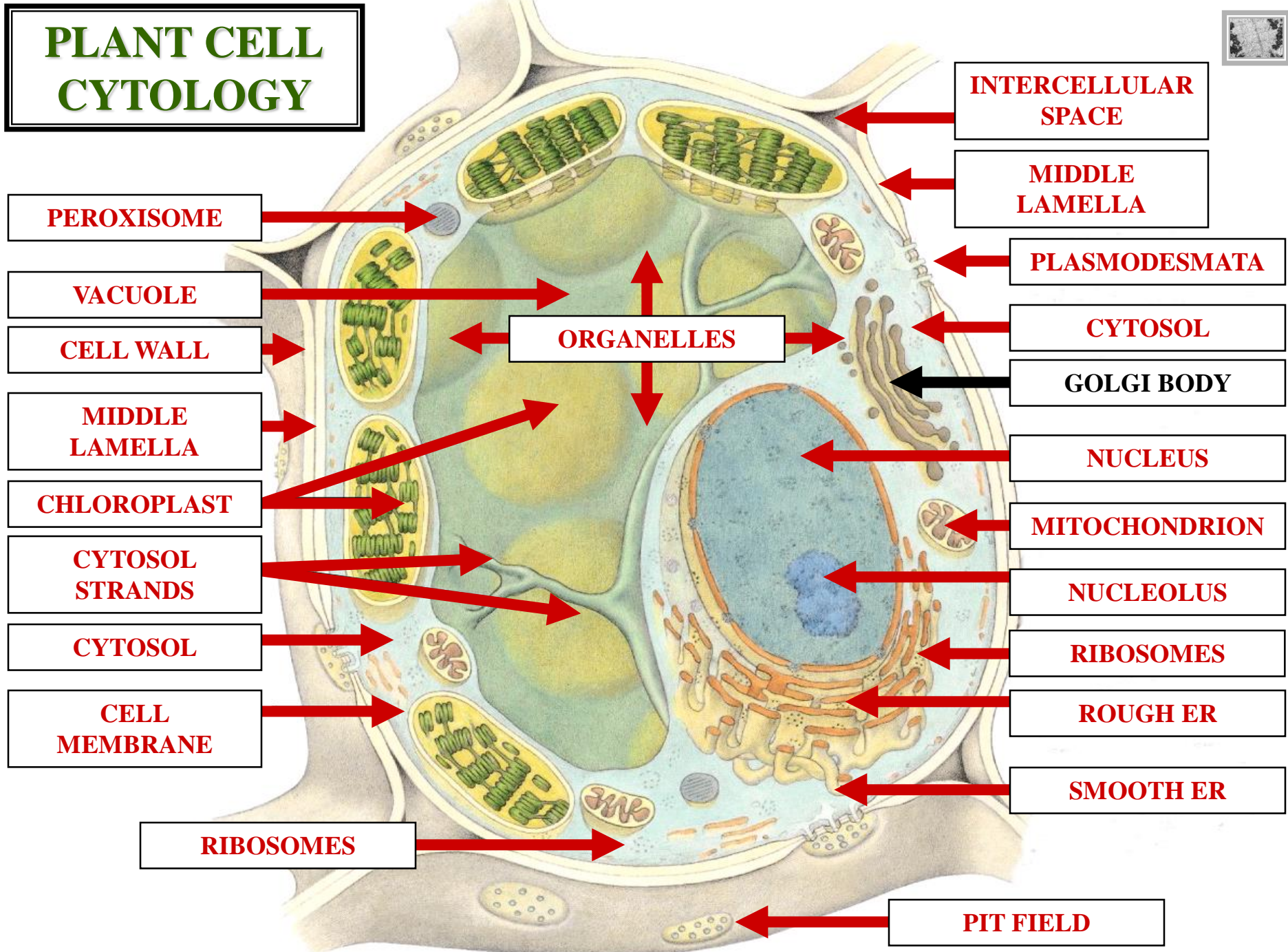
RIBOSOMES

ROUGH ER

SMOOTH ER

PIT FIELD

PLANT CELL CYTOLOGY



CHROMATIN

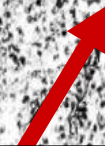


CHROMATIN



G

NUCLEUS



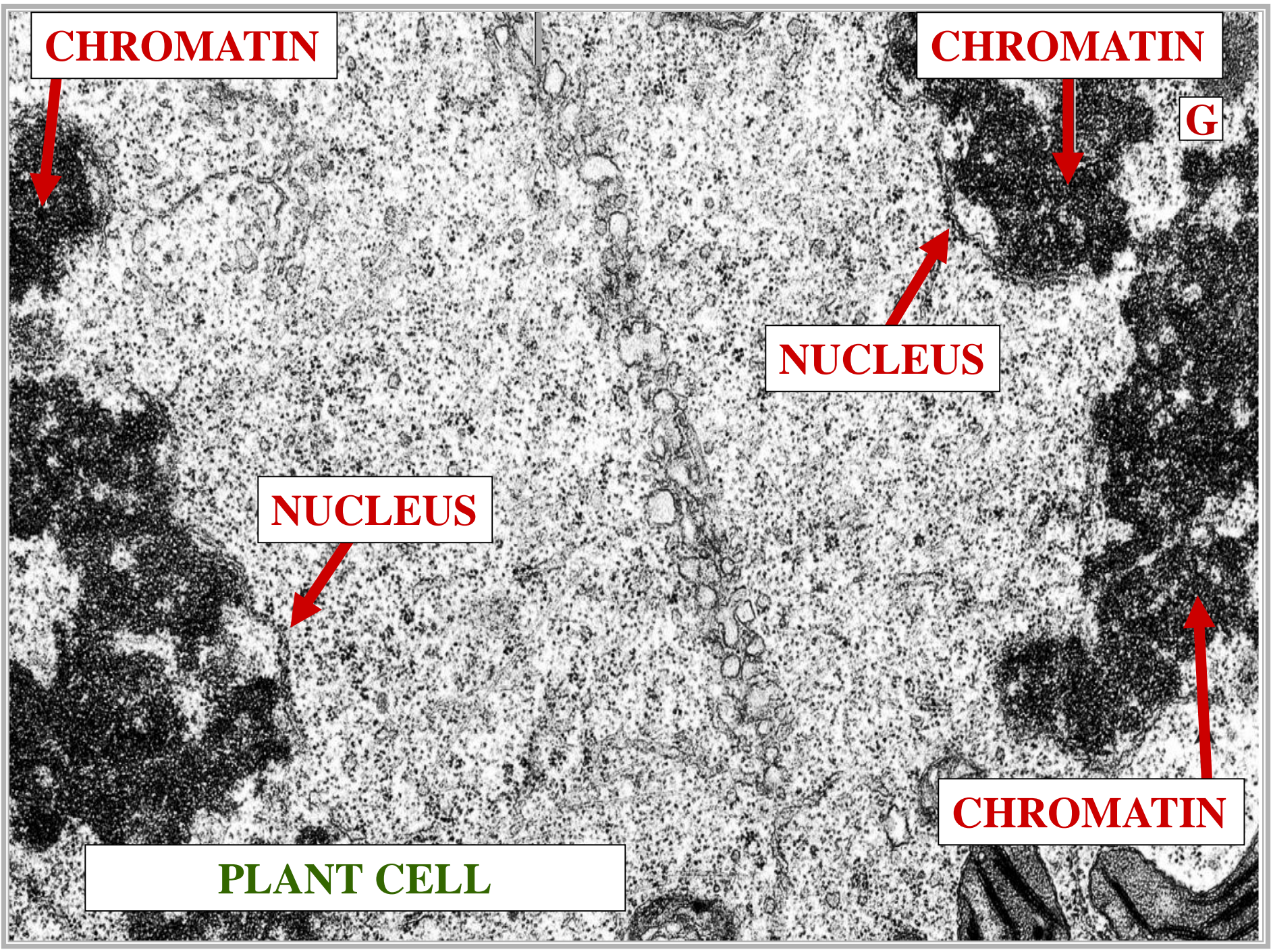
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CHROMATIN



PLANT CELL



CHROMATIN

CHROMATIN

E

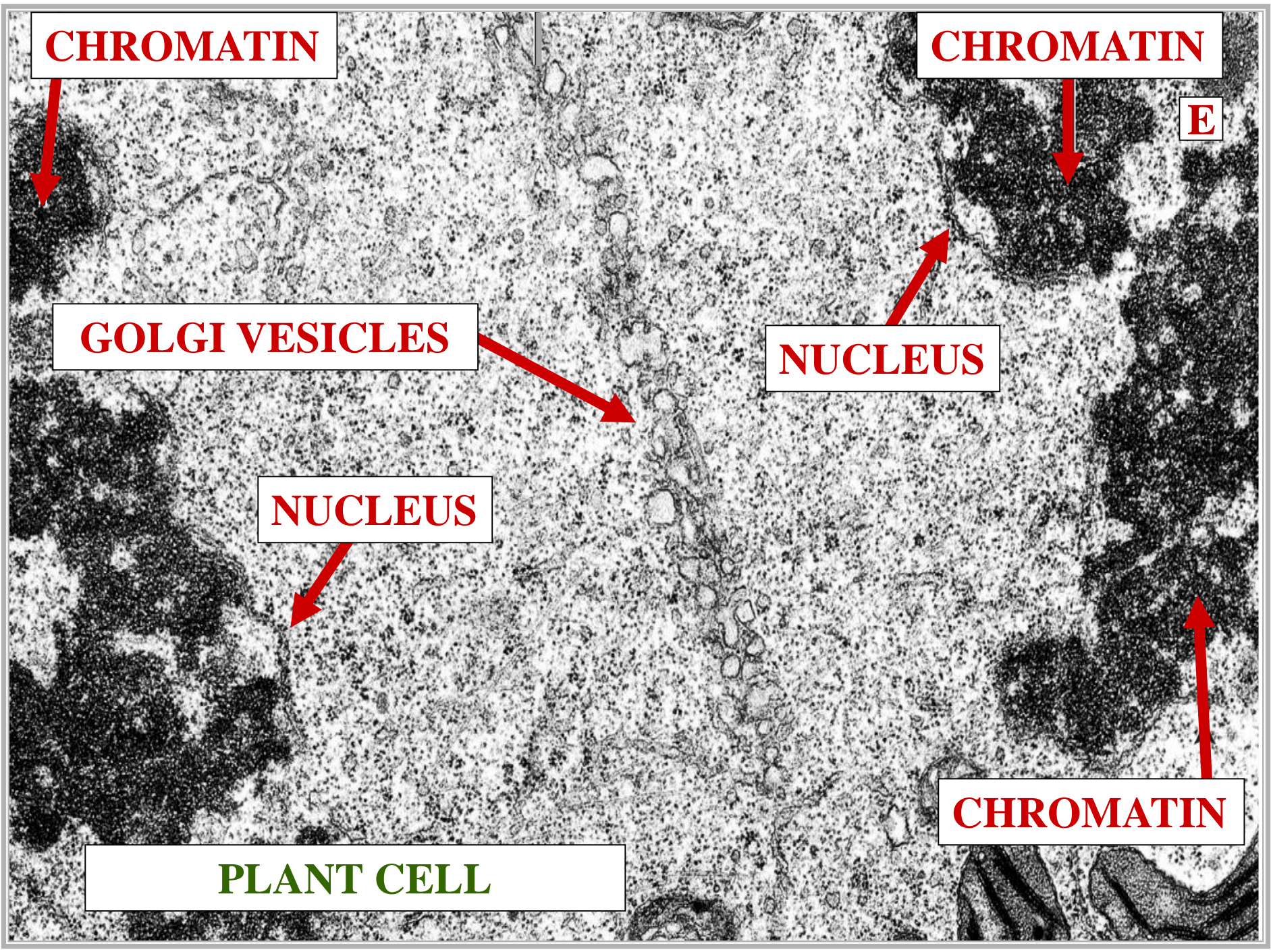
GOLGI VESICLES

NUCLEUS

NUCLEUS

CHROMATIN

PLANT CELL



CHROMATIN

CHROMATIN

C

GOLGI VESICLES

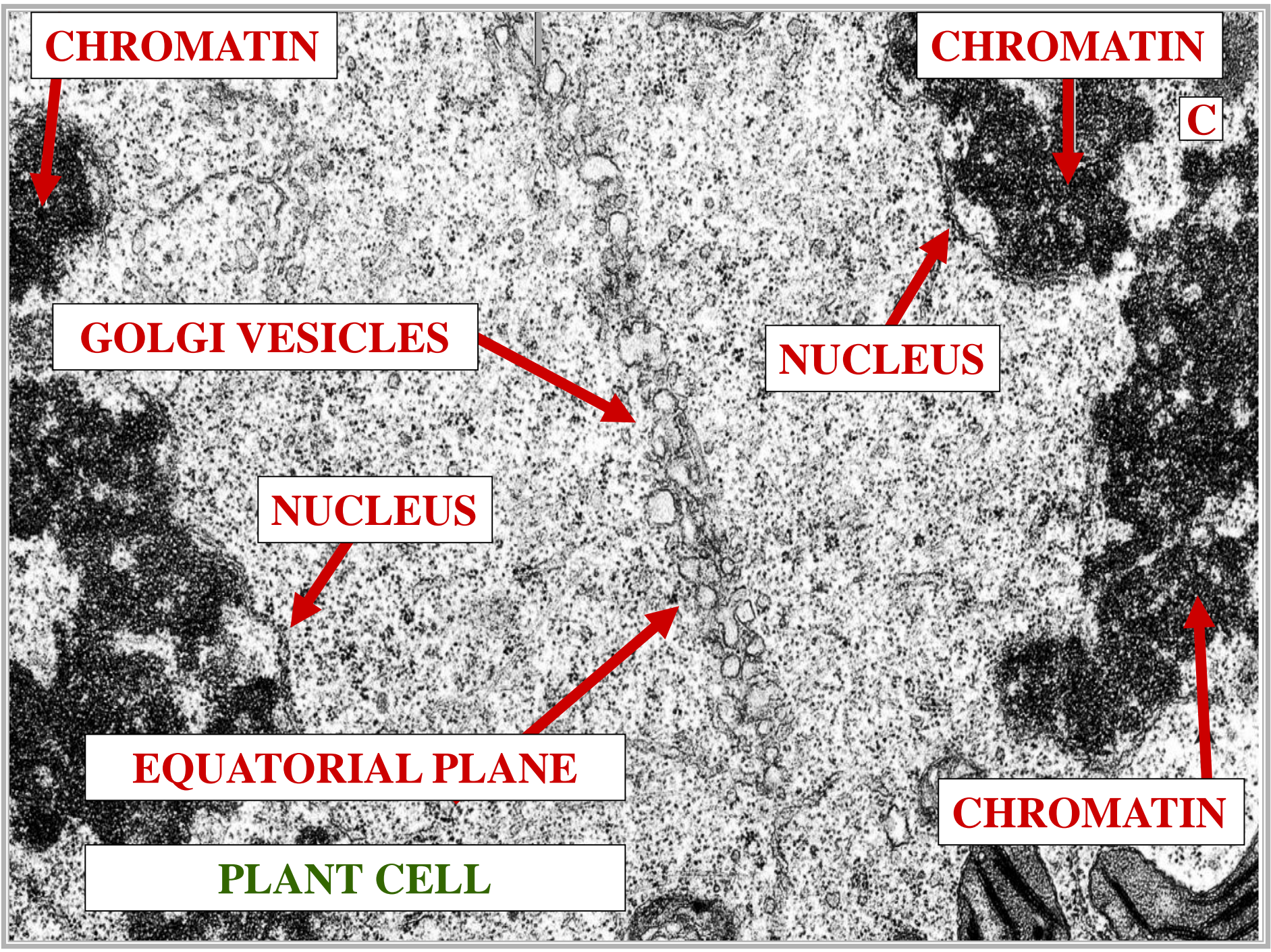
NUCLEUS

NUCLEUS

EQUATORIAL PLANE

CHROMATIN

PLANT CELL



CHROMATIN

CELL PLATE

CHROMATIN

GOLGI VESICLES

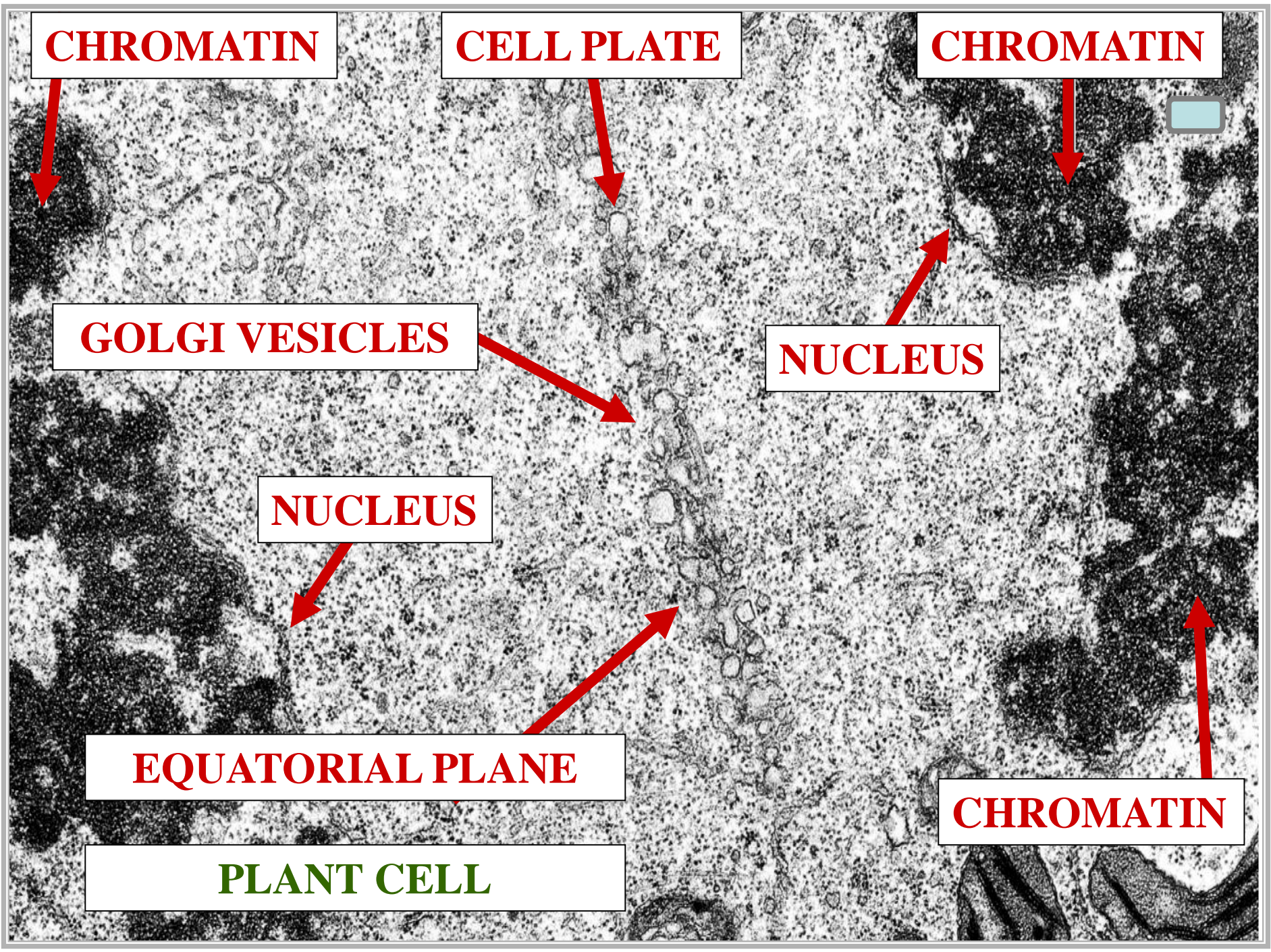
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NUCLEUS

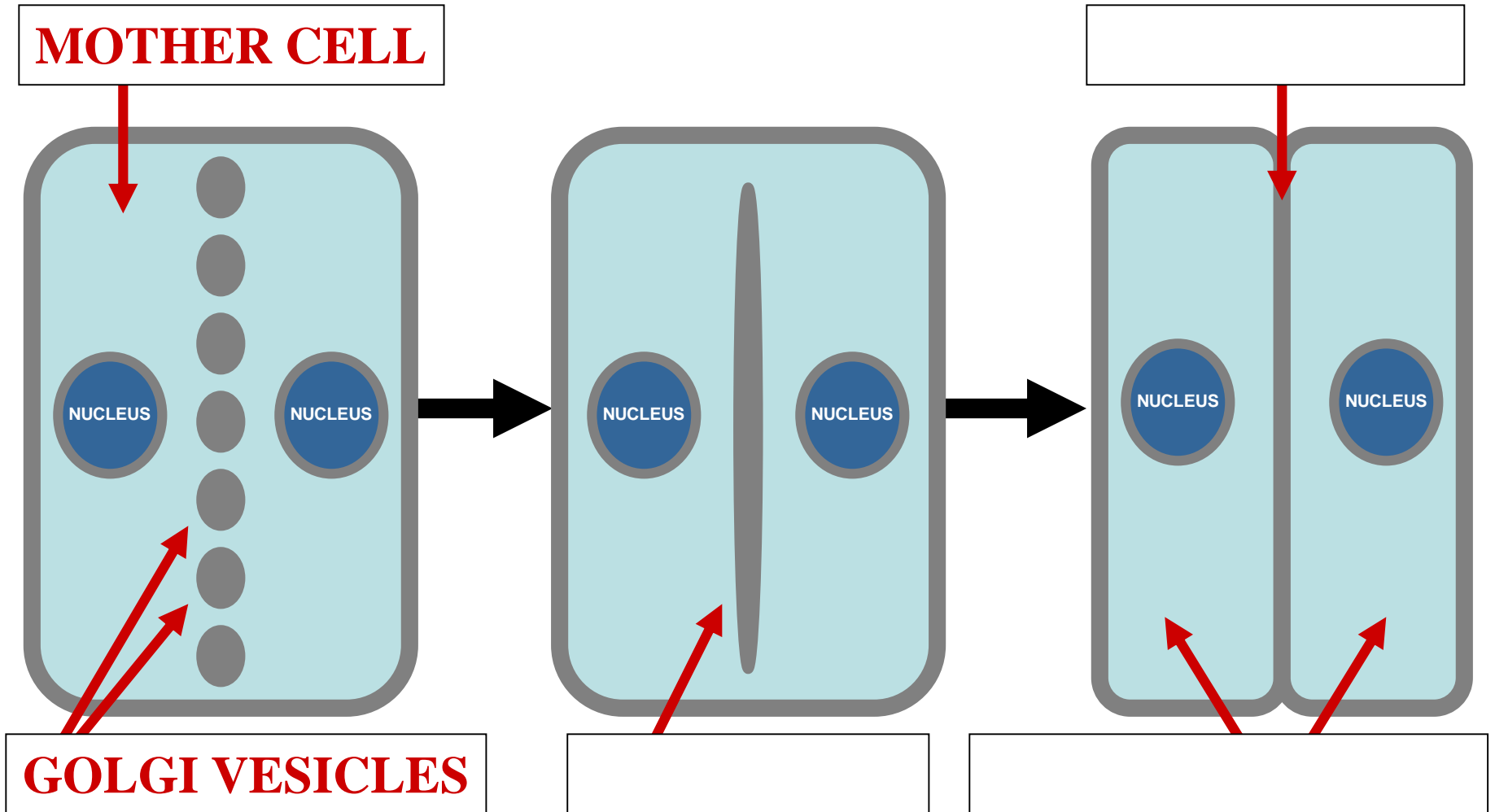
EQUATORIAL PLANE

CHROMATIN

PLANT CELL

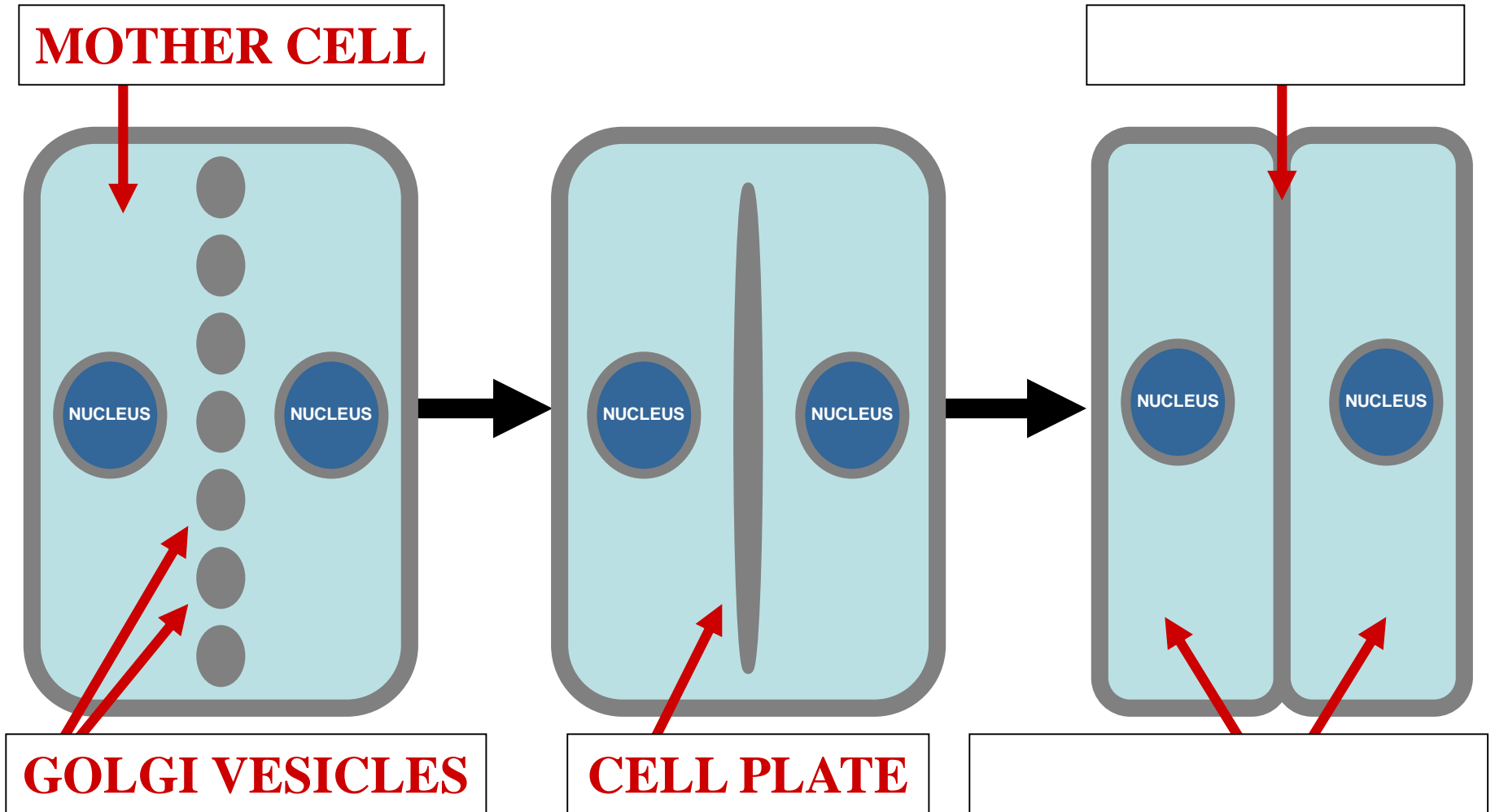


CYTOKINESIS CELL PLATE



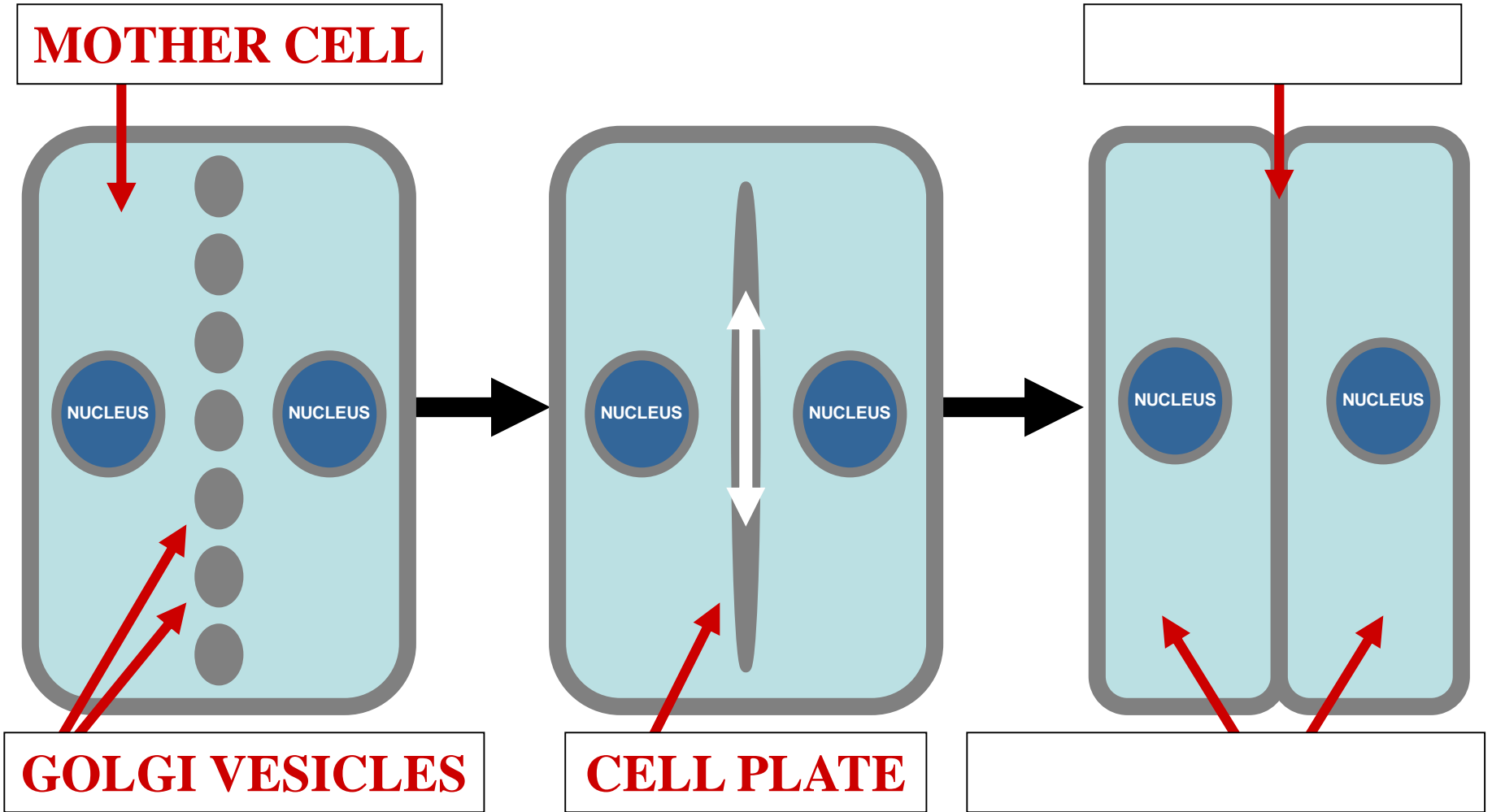
CYTOKINESIS

CELL PLATE

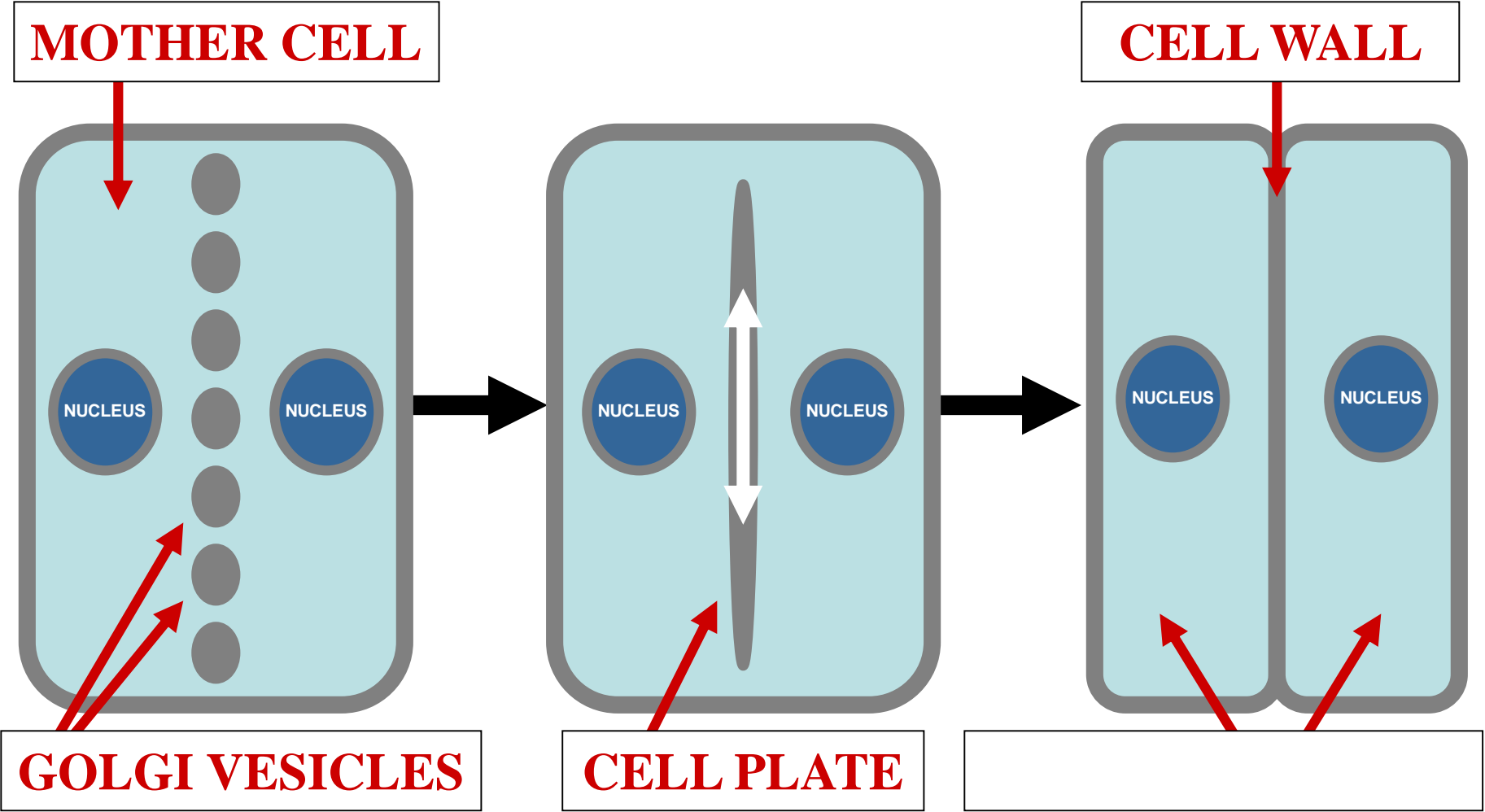


CYTOKINESIS

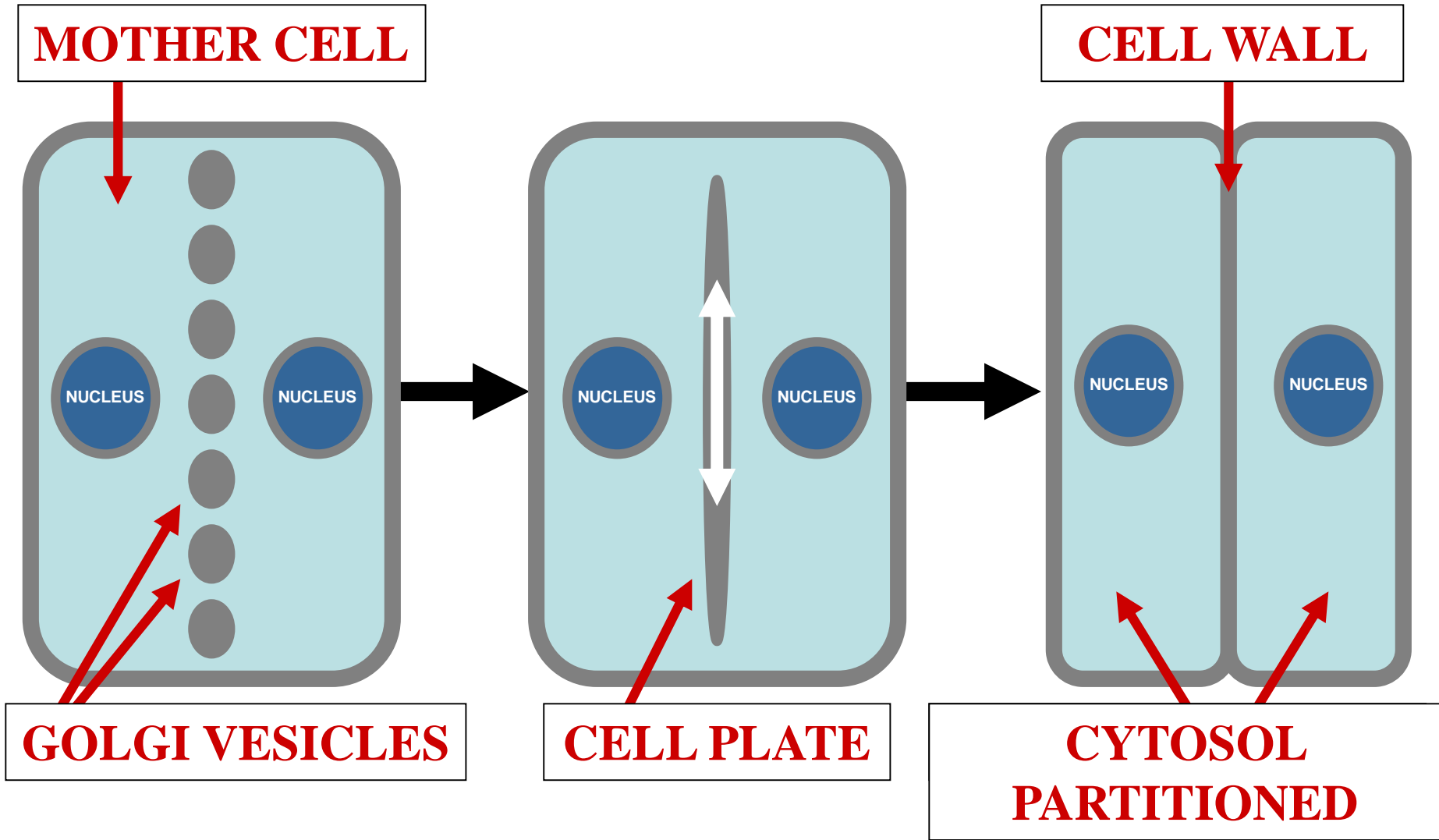
CELL PLATE



CYTOKINESIS CELL PLATE



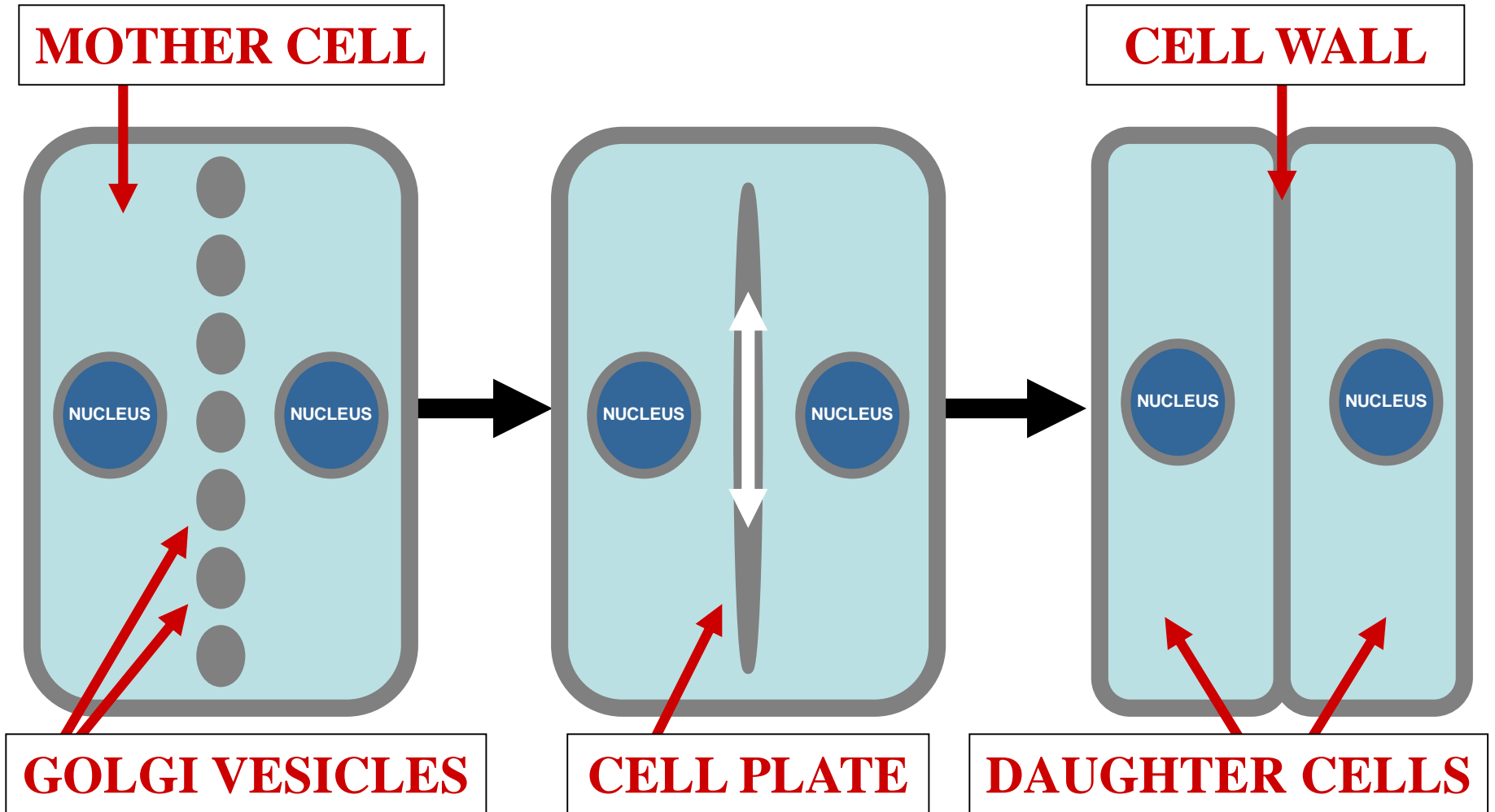
CYTOKINESIS CELL PLATE

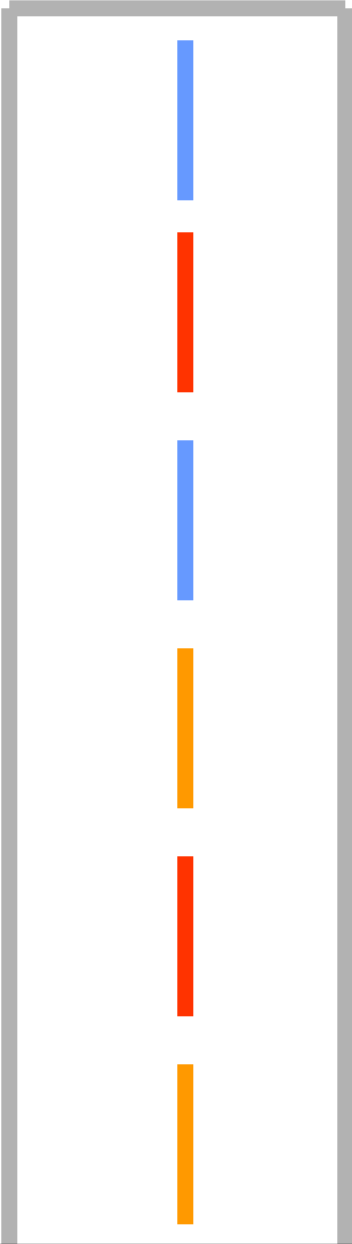




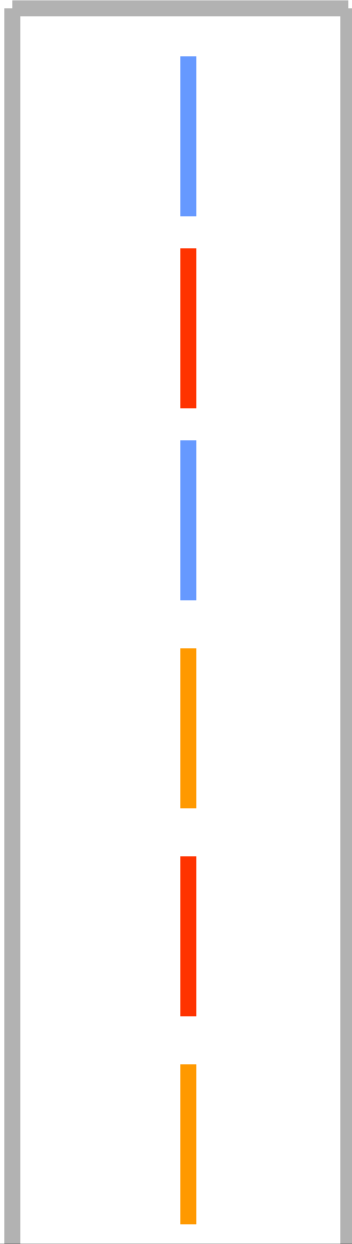
CYTOKINESIS

CELL PLATE

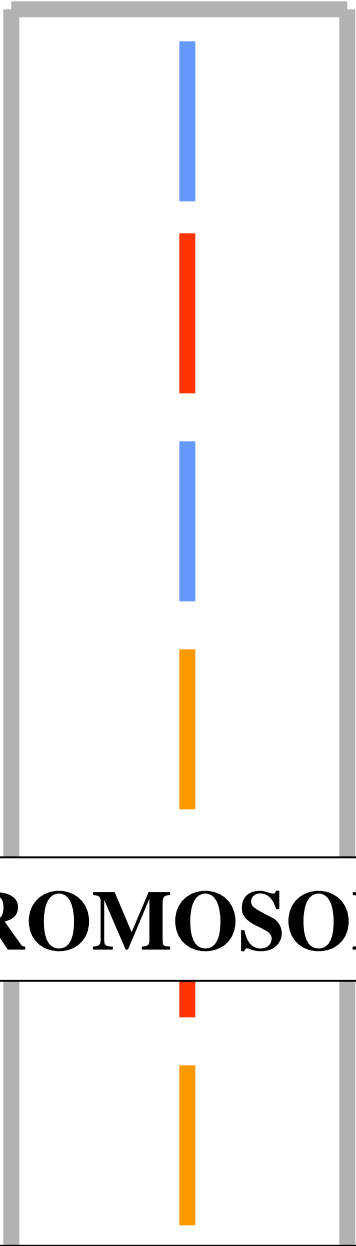




DAUGHTER CELL

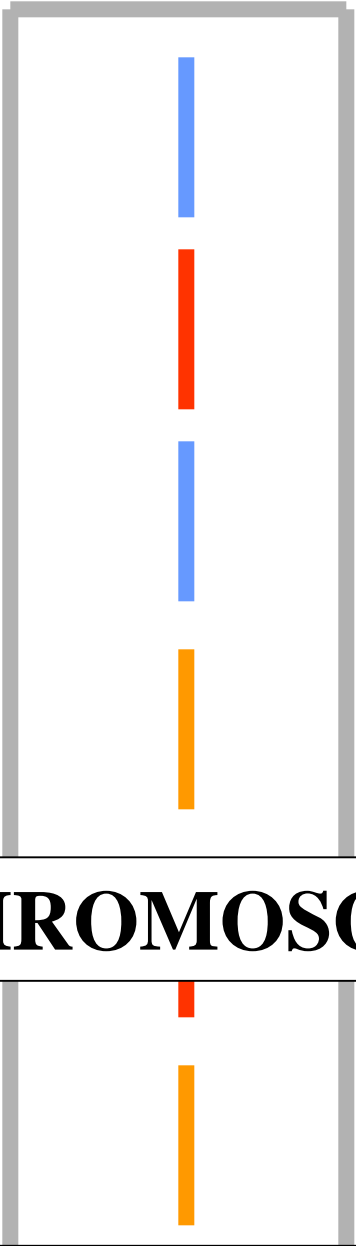


DAUGHTER CELL



6 CHROMOSOMES

DAUGHTER CELL



6 CHROMOSOMES

DAUGHTER CELL



GENETICALLY IDENTICAL

6 CHROMOSOMES

6 CHROMOSOMES

DAUGHTER CELL

DAUGHTER CELL

**GENETICALLY
IDENTICAL**



DAUGHTER CELL

**GENETICALLY
IDENTICAL**



DAUGHTER CELL

CYTOKINESIS

FURROWING

CYTOKINESIS FURROWING



FURROWING

**CYTOSOL DIVISION
ANIMAL CELLS**

FURROWING



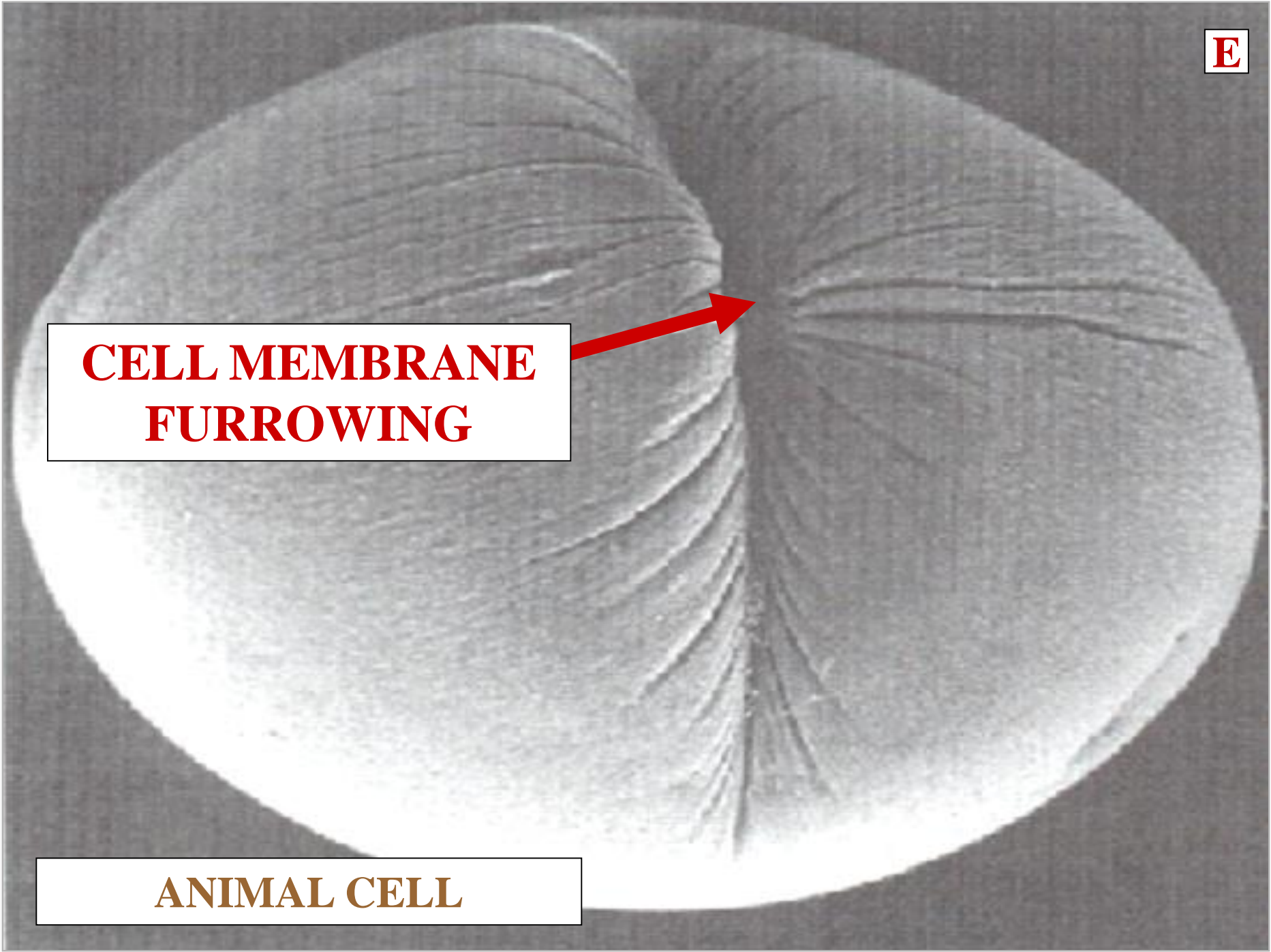
ANIMAL CYTOKINESIS



**CELL MEMBRANE
FURROWING**



ANIMAL CELL

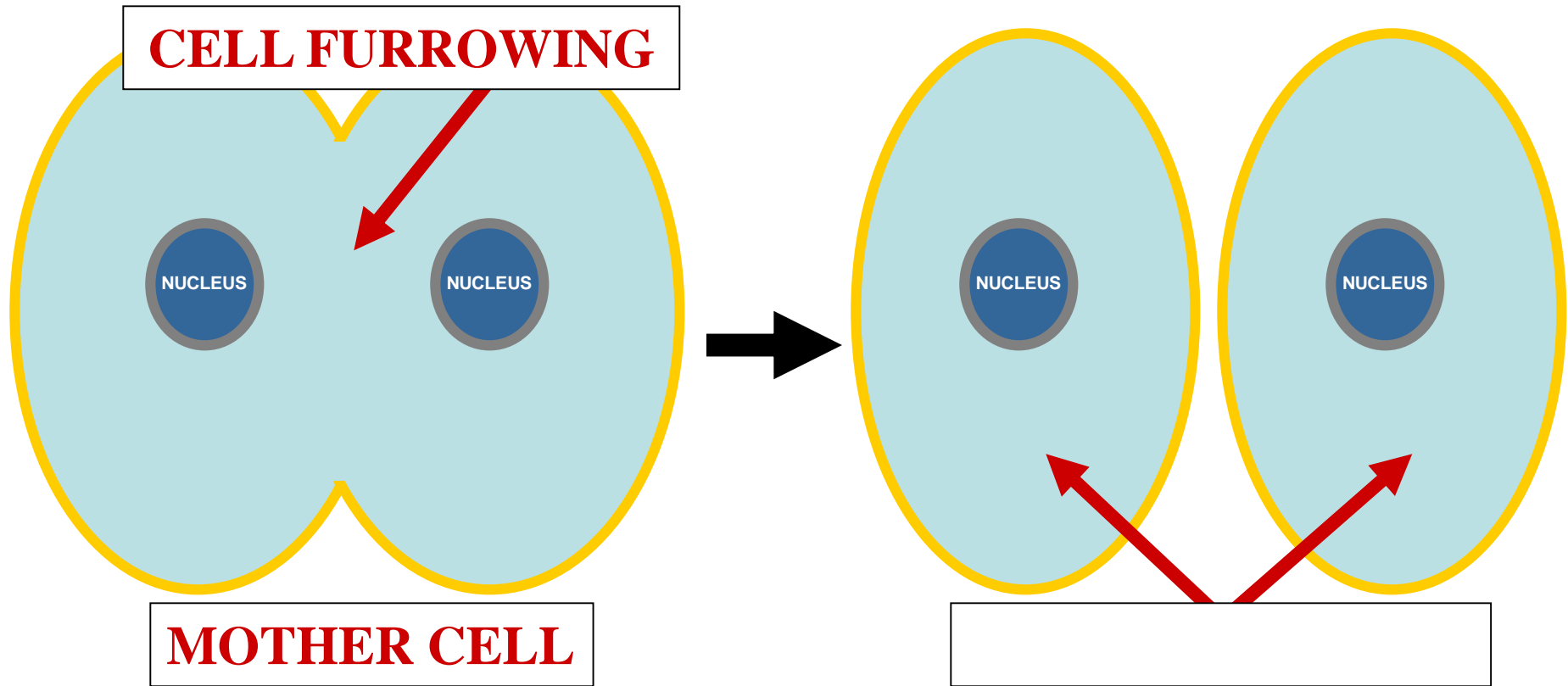


A grayscale micrograph of a cell in the process of cytokinesis. The cell is roughly circular and shows a clear constriction in the center, where the two halves are pulling apart. This constriction is the equatorial plane. The surface of the cell is covered in fine, parallel ridges that run from the poles towards the center. A red arrow points from a white box containing the text 'EQUATORIAL PLANE' to the central constriction. In the bottom left corner, another white box contains the text 'ANIMAL CELL'.

**EQUATORIAL
PLANE**

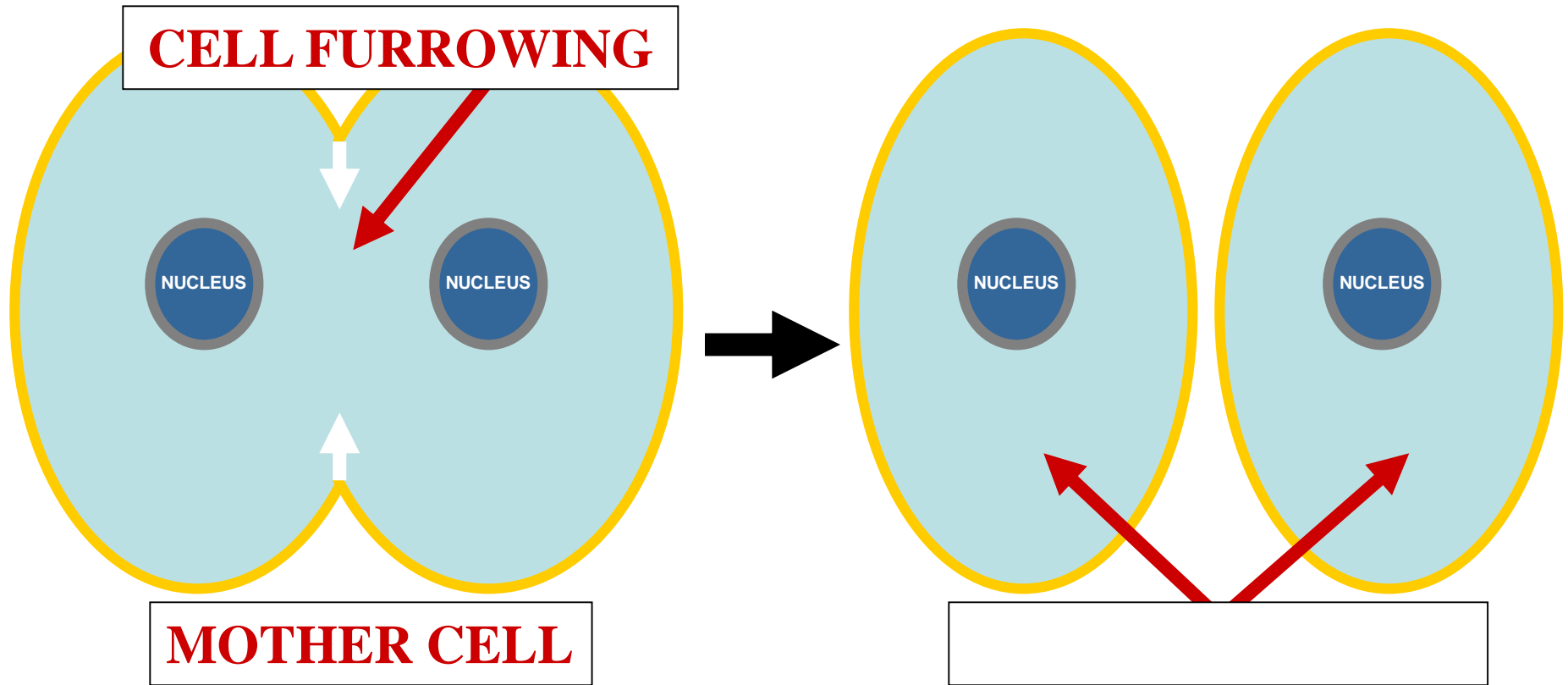
ANIMAL CELL

CYTOKINESIS FURROWING



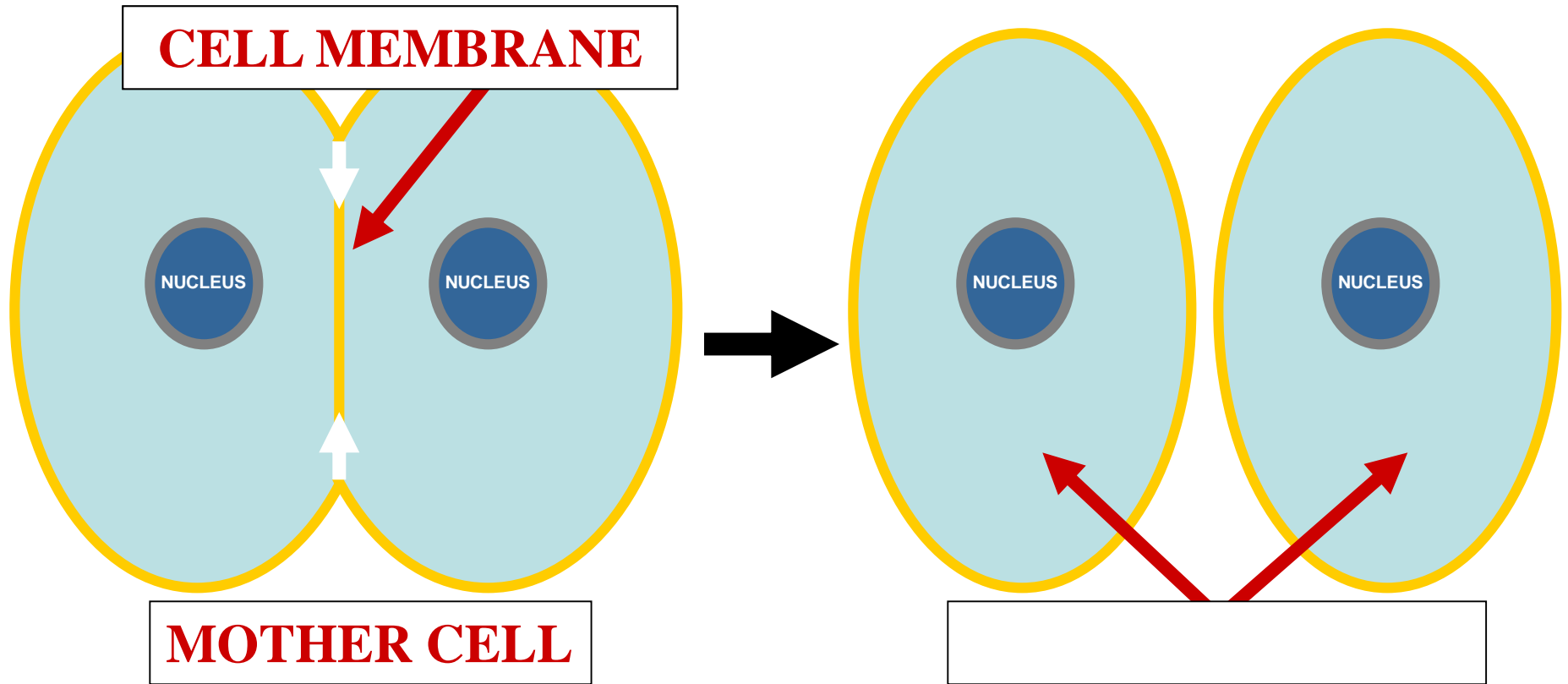
CYTOKINESIS FURROWING

CYTOKINESIS FURROWING



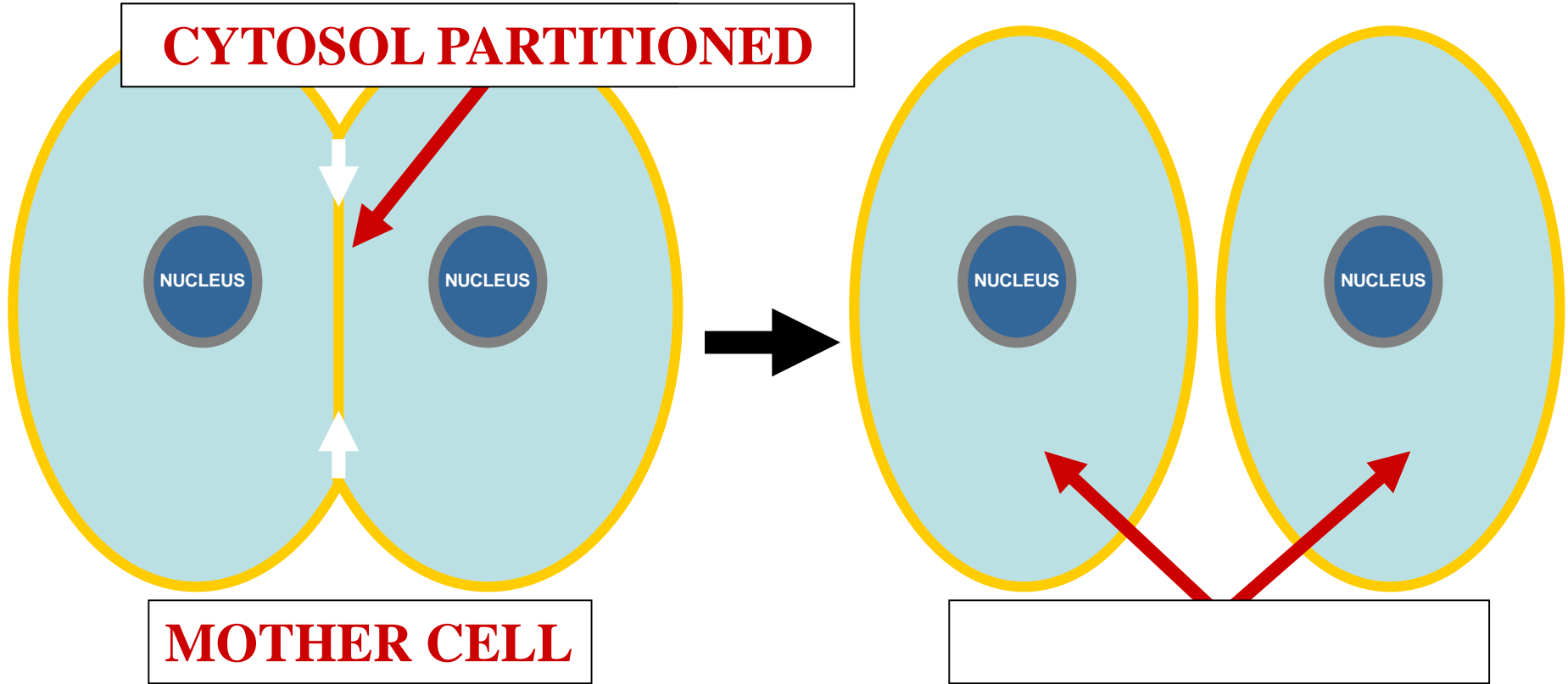
CYTOKINESIS FURROWING

CYTOKINESIS FURROWING



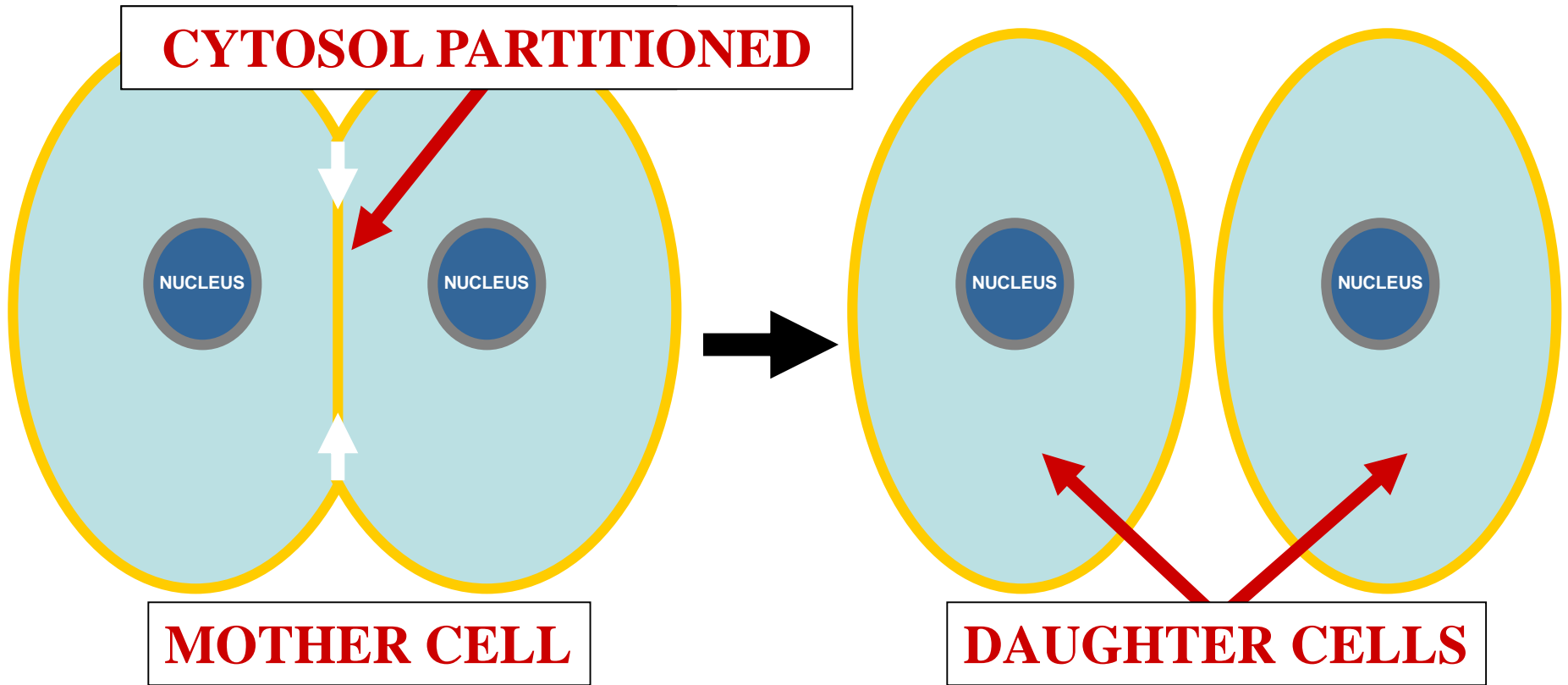
CYTOKINESIS FURROWING

CYTOKINESIS FURROWING

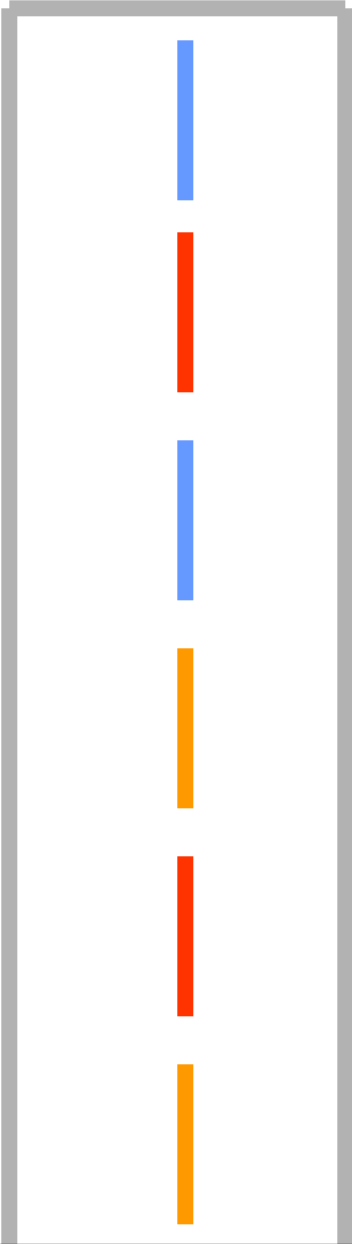


CYTOKINESIS FURROWING

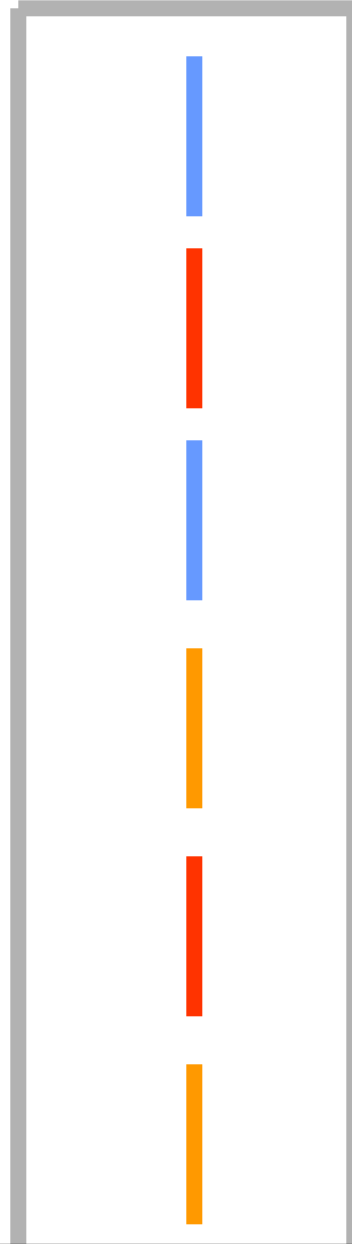
CYTOKINESIS FURROWING



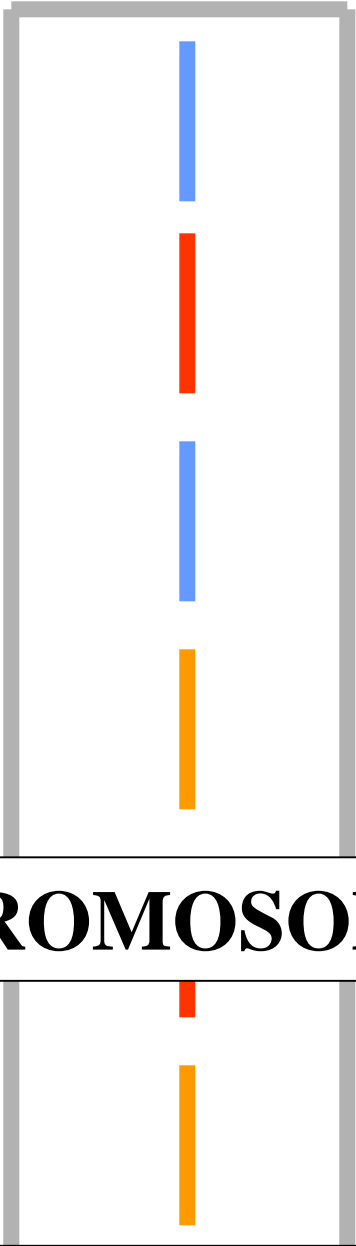
CYTOKINESIS FURROWING



DAUGHTER CELL

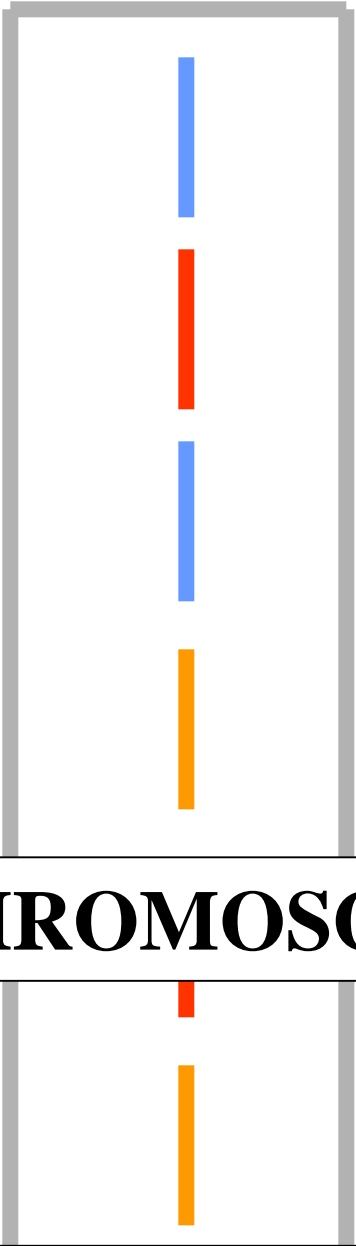


DAUGHTER CELL



6 CHROMOSOMES

DAUGHTER CELL



6 CHROMOSOMES

DAUGHTER CELL



**GENETICALLY
IDENTICAL**

6 CHROMOSOMES

6 CHROMOSOMES

DAUGHTER CELL

DAUGHTER CELL

**GENETICALLY
IDENTICAL**



DAUGHTER CELL

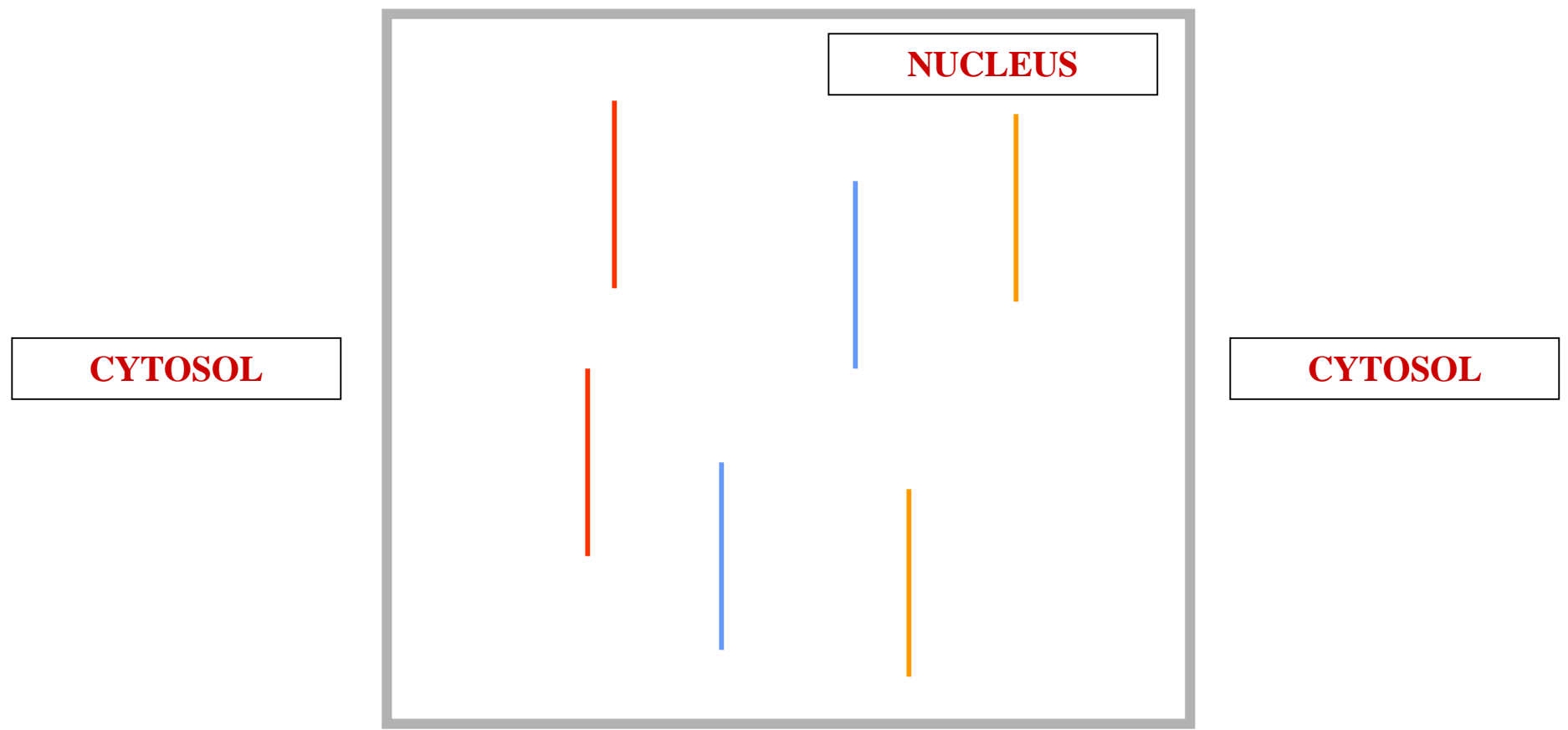
**GENETICALLY
IDENTICAL**



DAUGHTER CELL

SOMATIC CELL CYCLE SUMMARY

SOMATIC MOTHER CELL

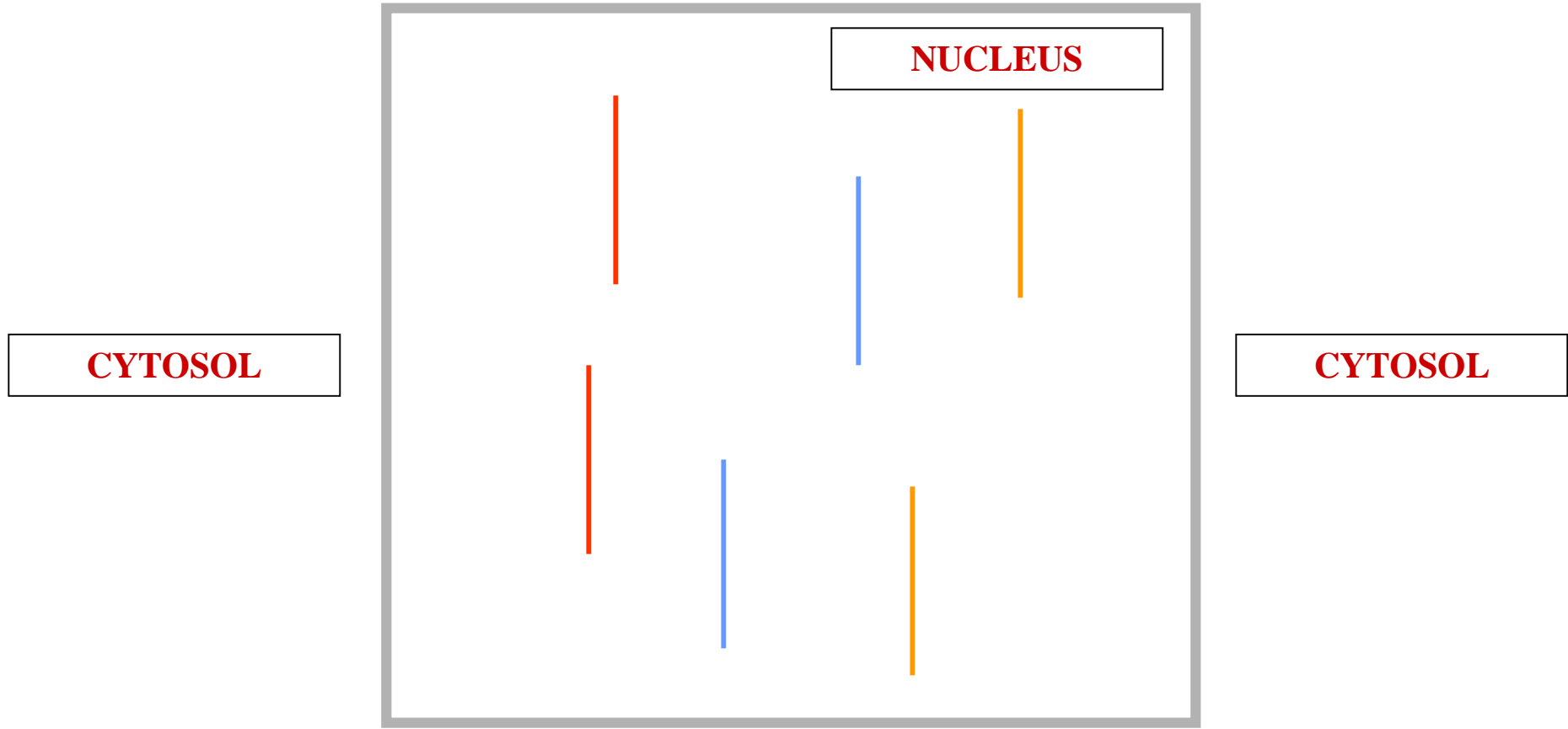


SOMATIC MOTHER CELL



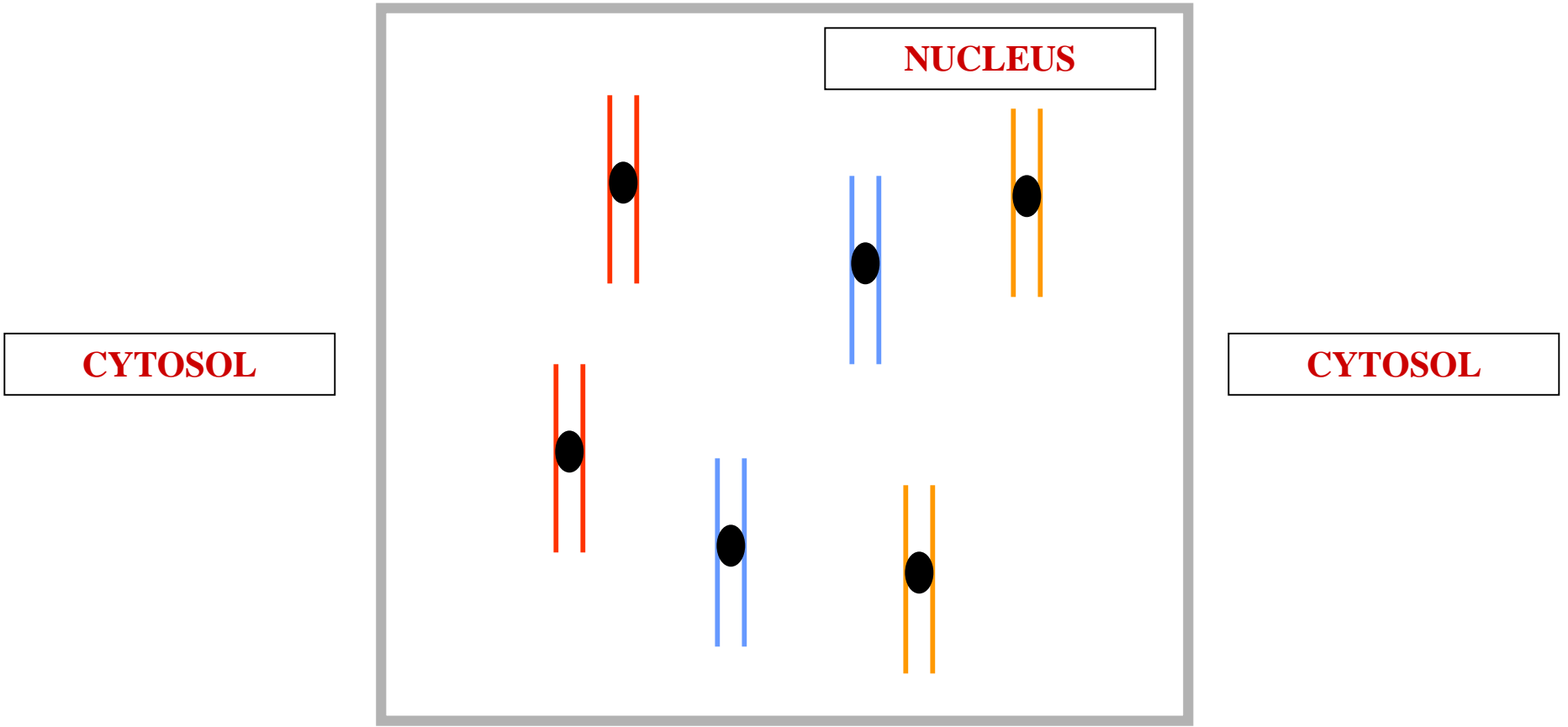
INTERPHASE

INTERPHASE



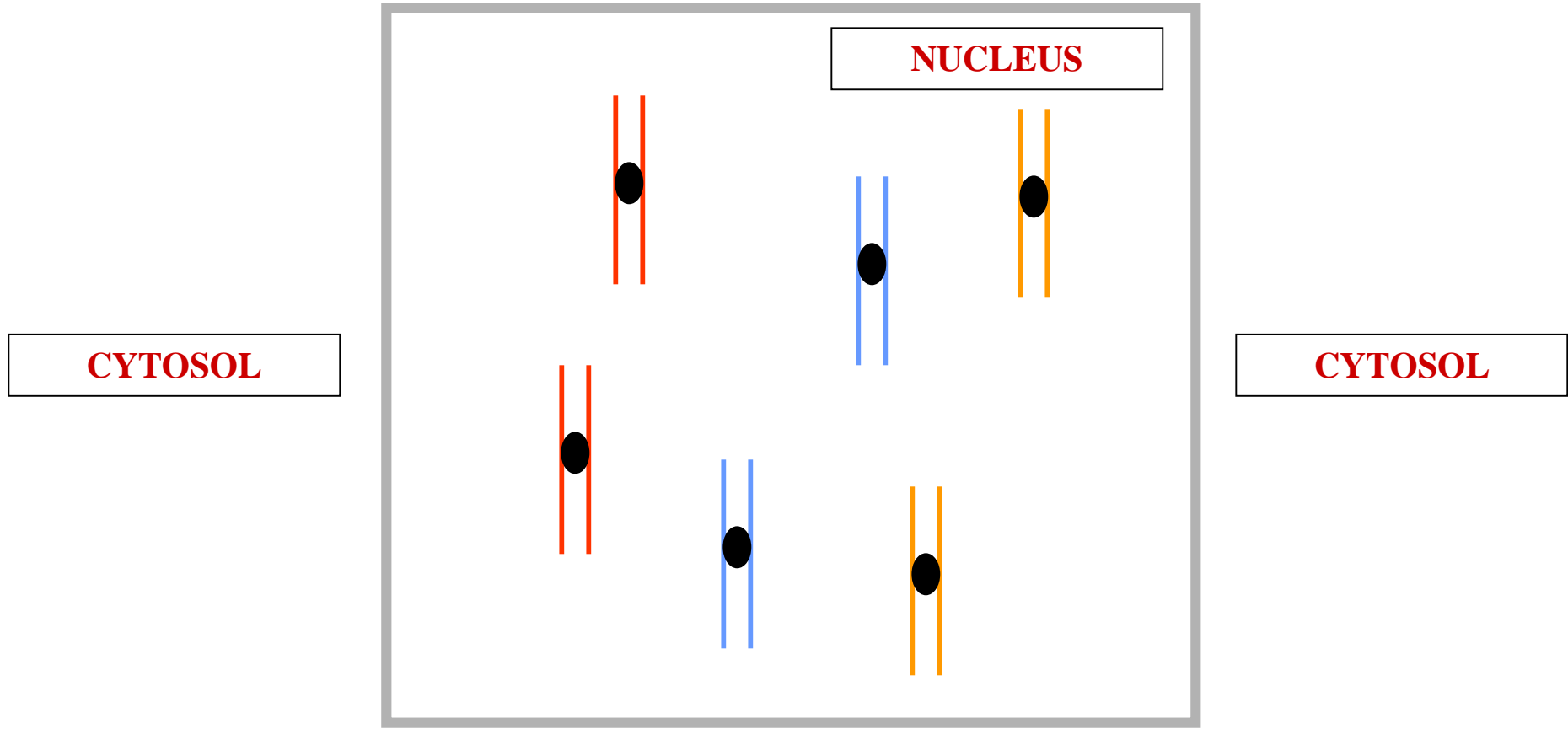
6 CHROMOSOMES

INTERPHASE



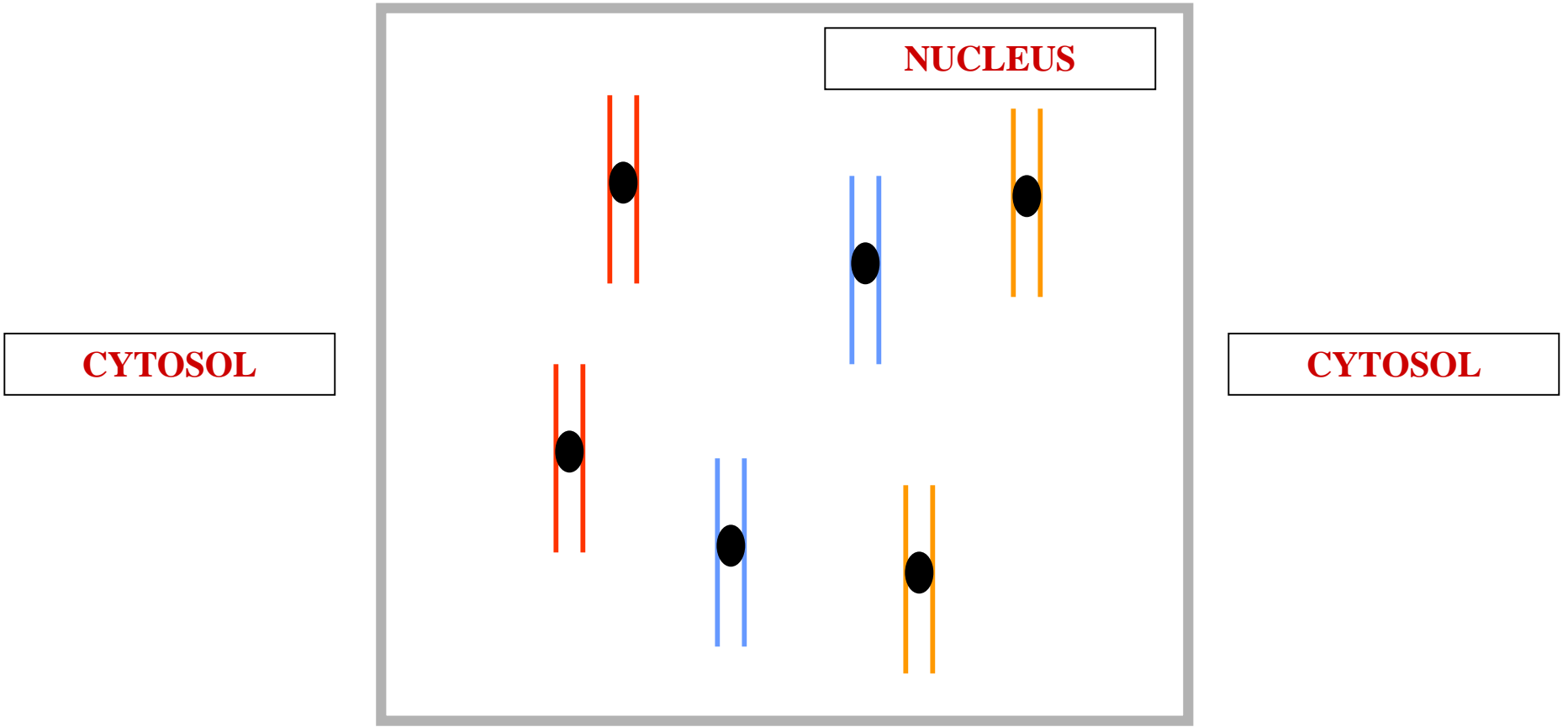
CHROMOSOMES REPLICATE

INTERPHASE



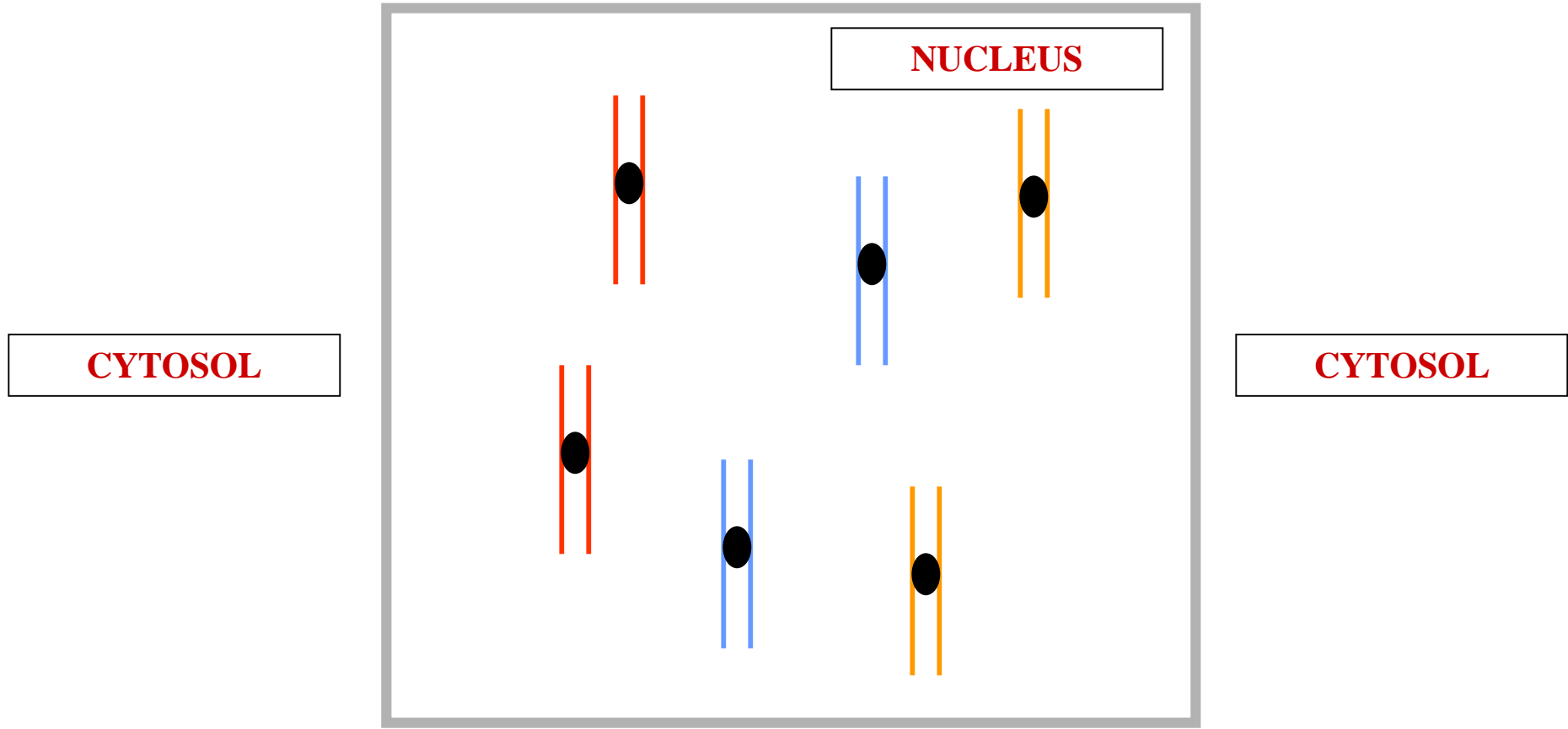
TWO CHROMATIDS

INTERPHASE



DNA CONTENT DOUBLED

INTERPHASE



6 CHROMOSOMES

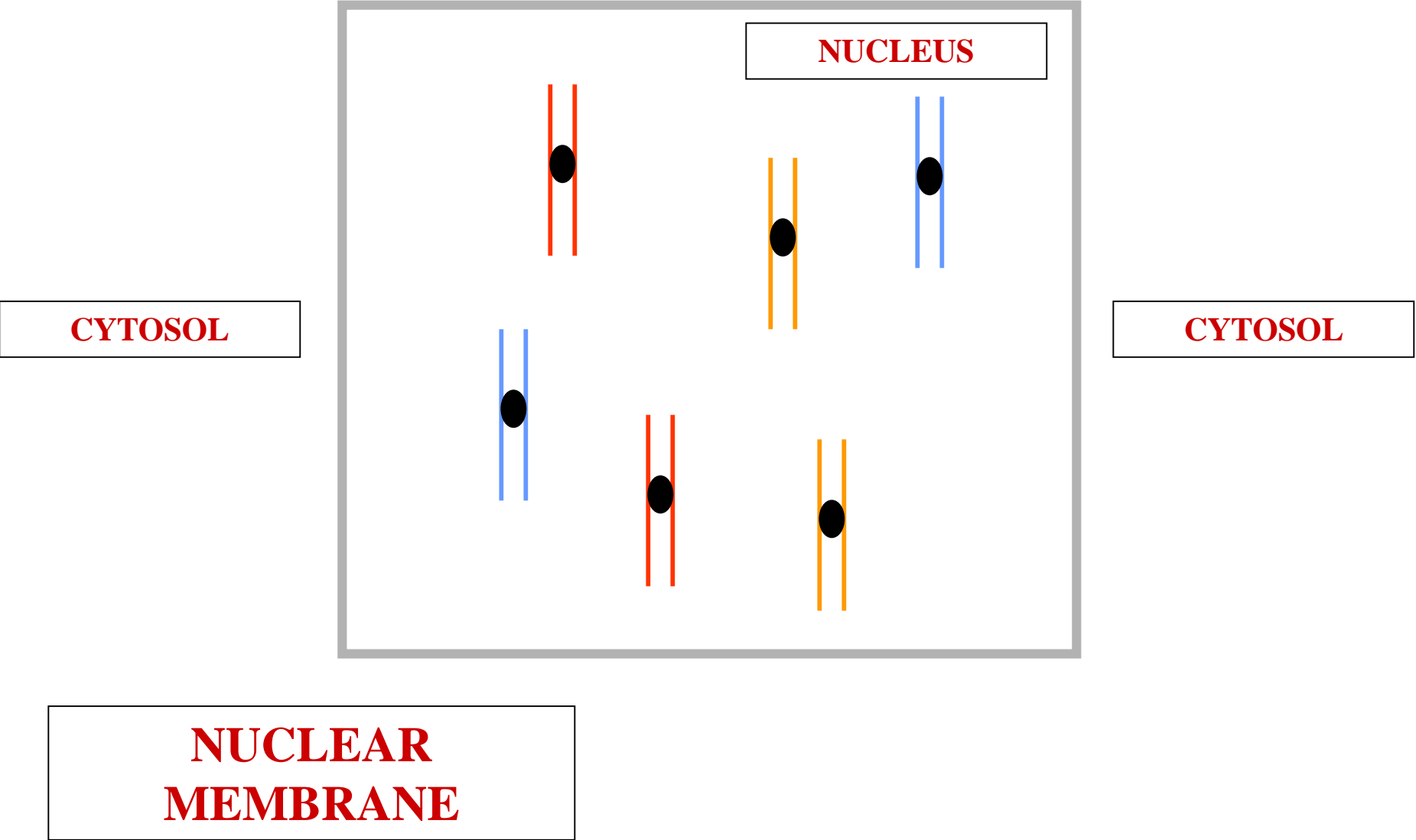
KARYOKINESIS

MITOSIS

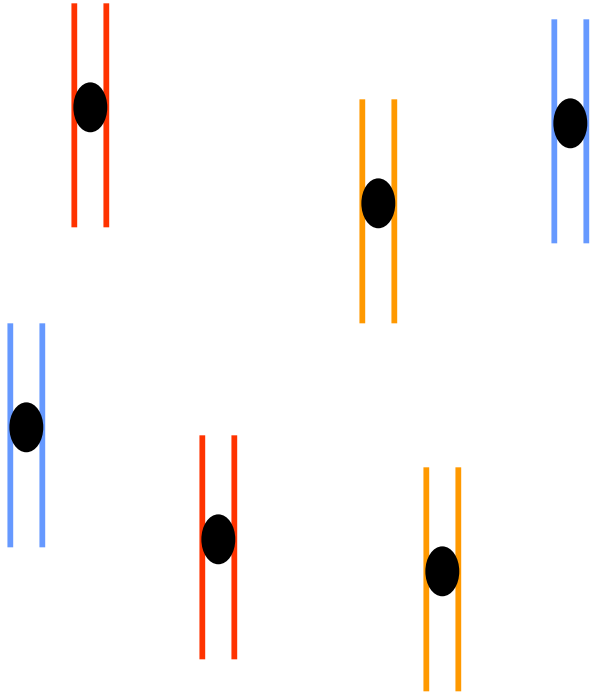


PROPHASE

PROPHASE

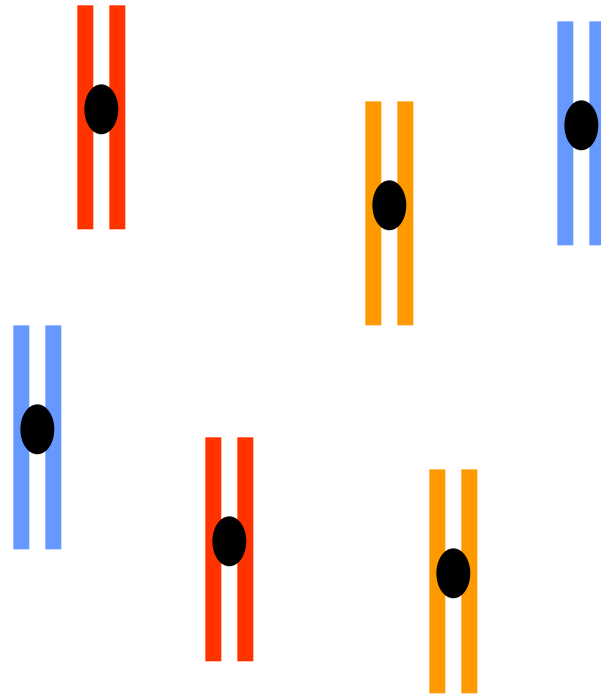


PROPHASE

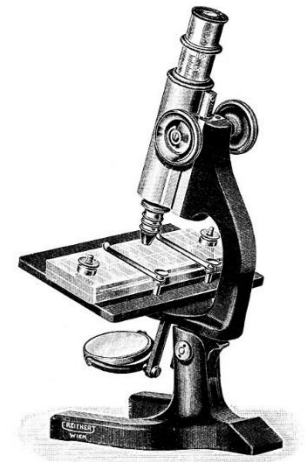


**NUCLEAR
MEMBRANE
DISSIPATES**

PROPHASE



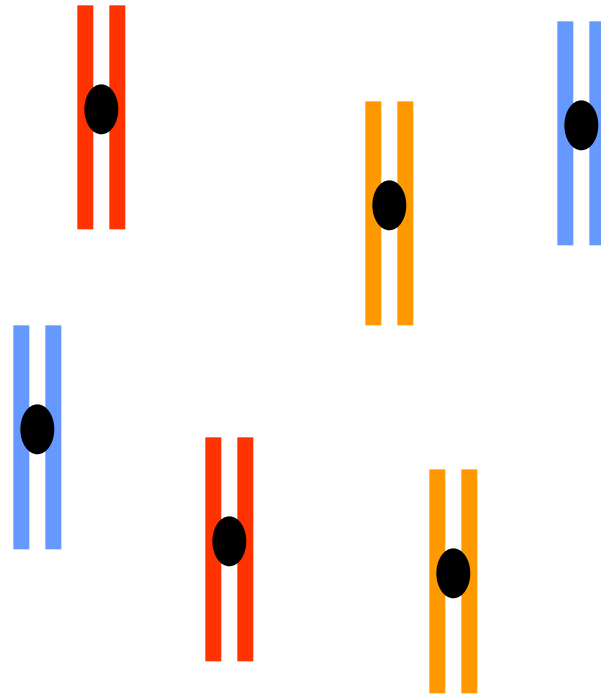
**CHROMOSOMES
CONDENSE**





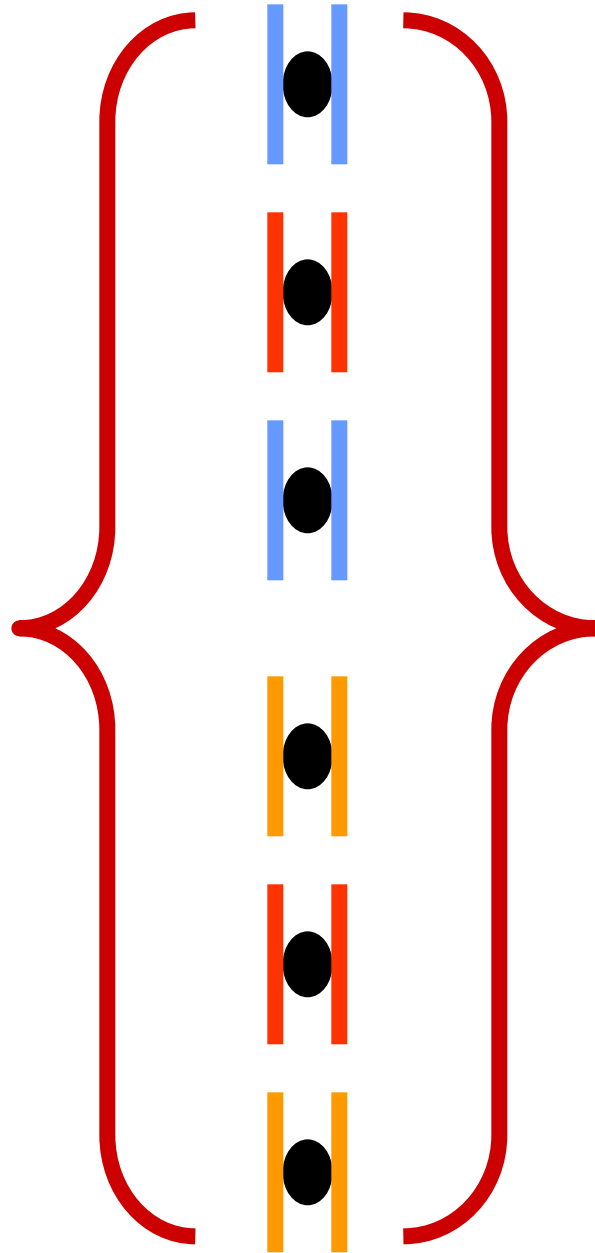
METAPHASE

METAPHASE



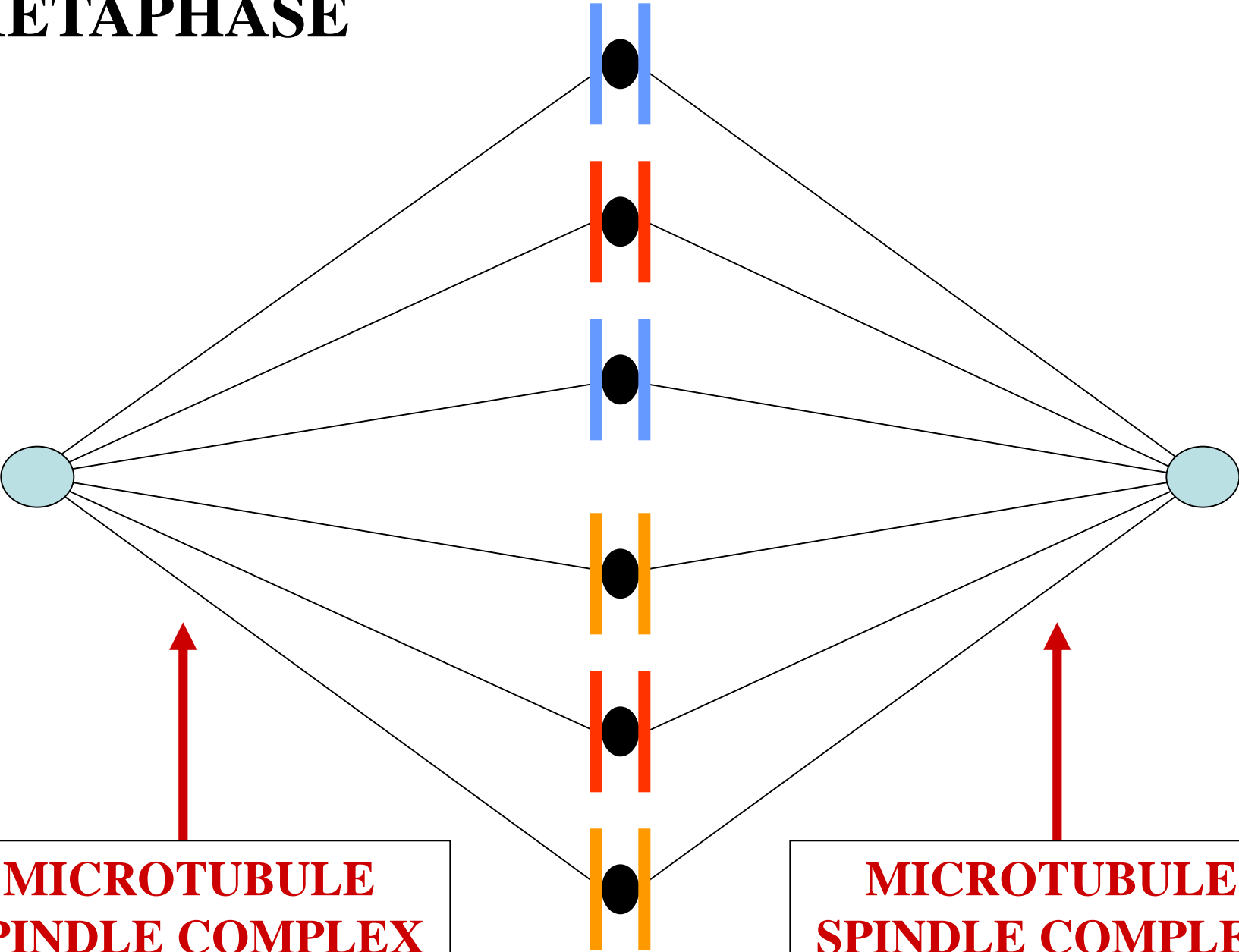
METAPHASE

**EQUATORIAL
PLANE**



**EQUATORIAL
PLANE**

METAPHASE



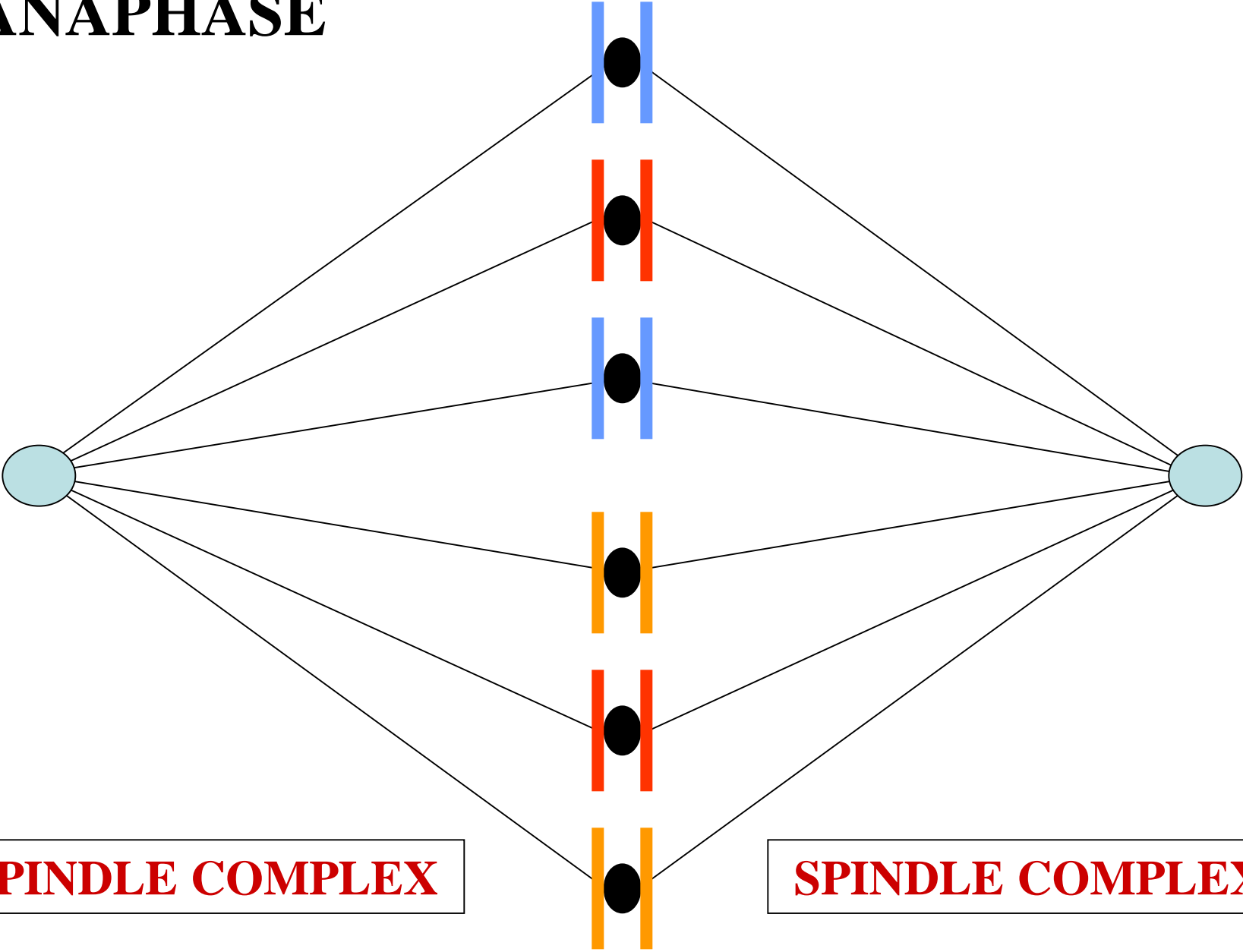
**MICROTUBULE
SPINDLE COMPLEX**

**MICROTUBULE
SPINDLE COMPLEX**



ANAPHASE

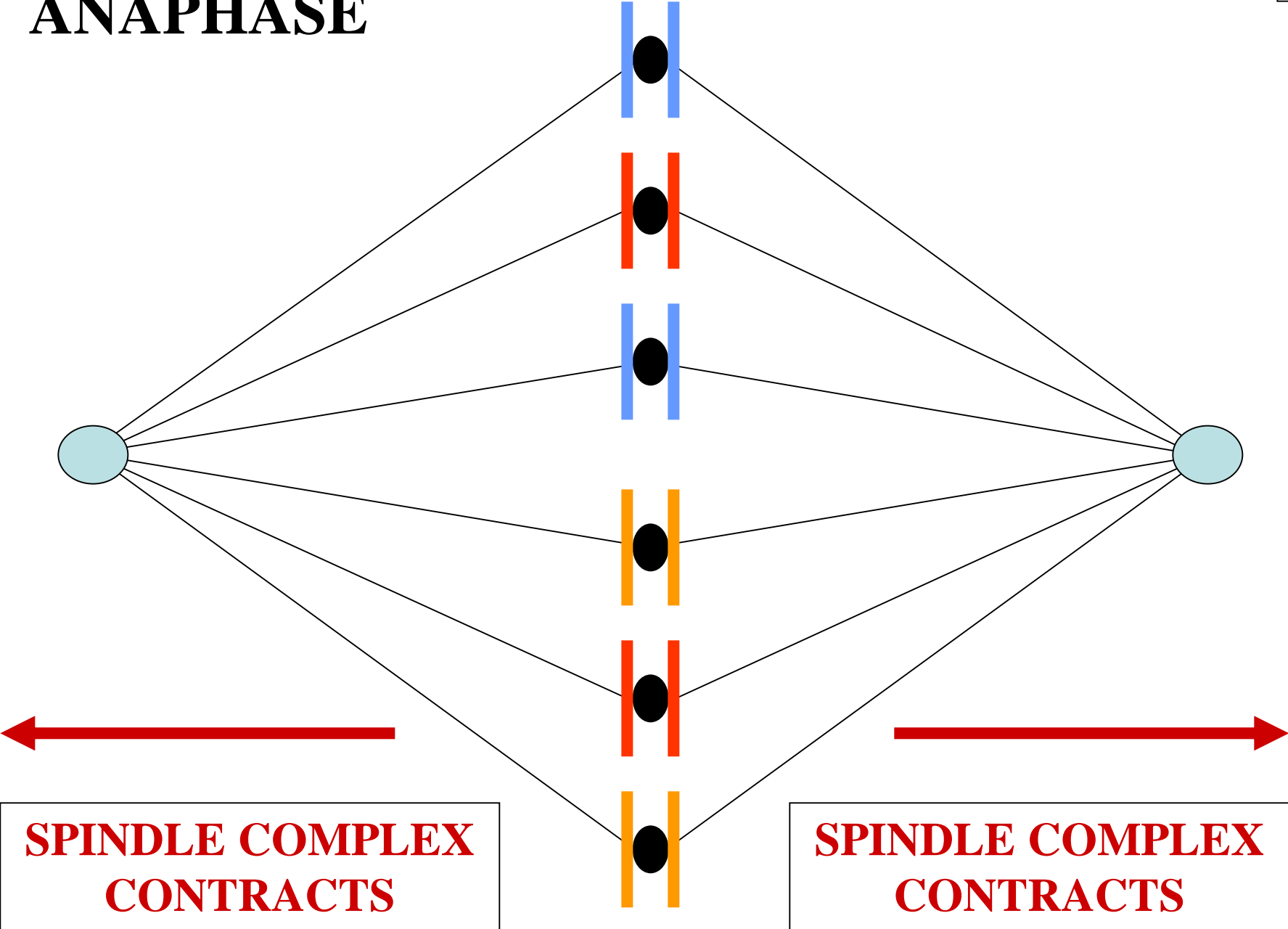
ANAPHASE



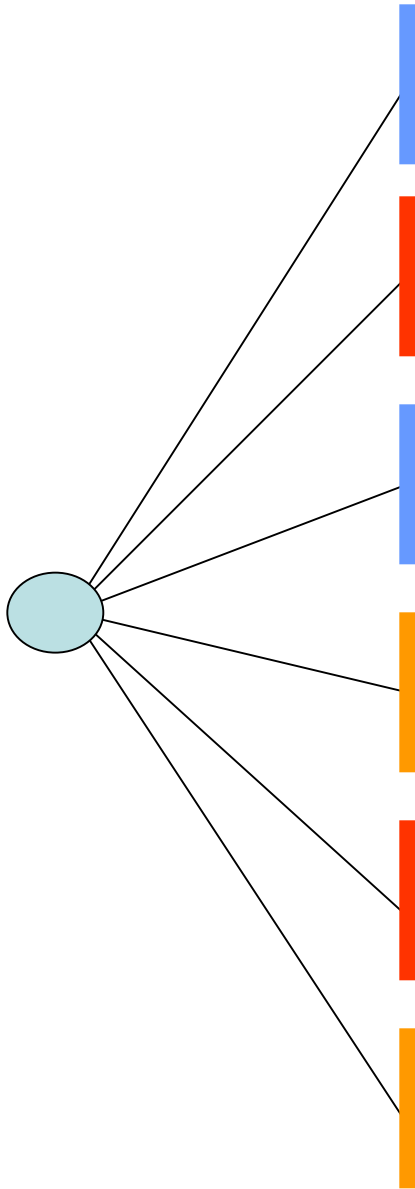
SPINDLE COMPLEX

SPINDLE COMPLEX

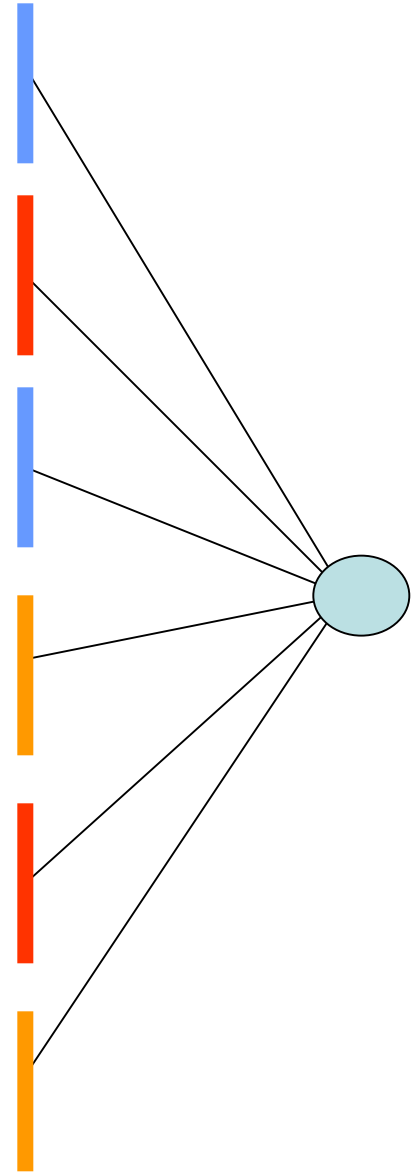
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ANAPHASE

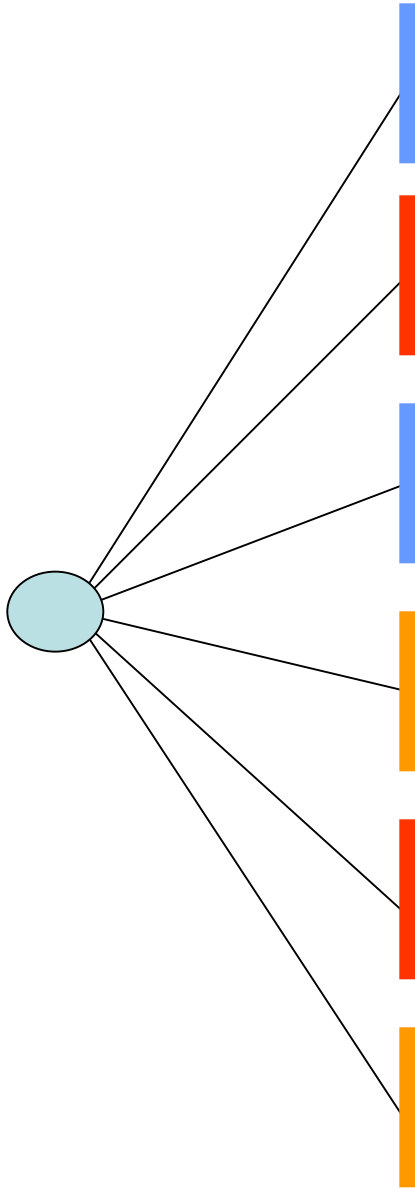


**CHROMOSOME
CENTROMERES
BREAK-DOWN**

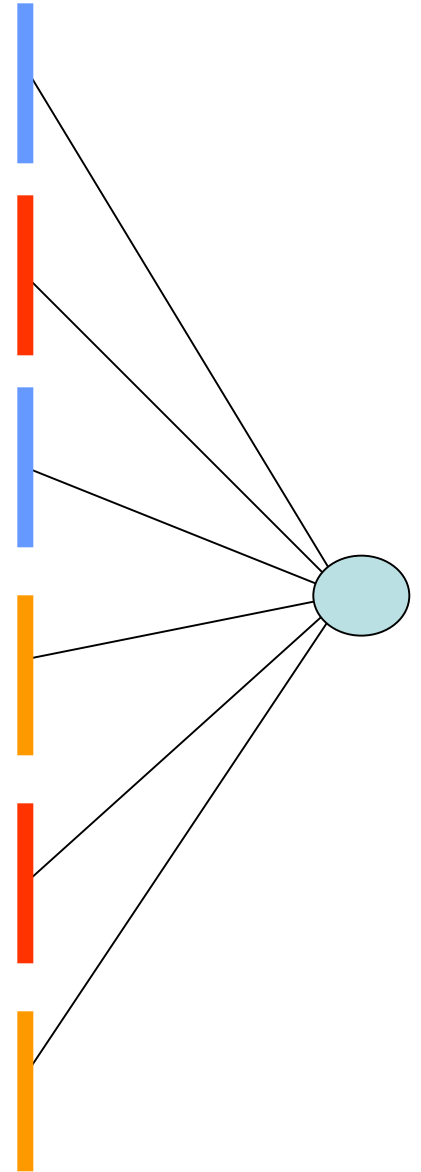


ANAPHASE

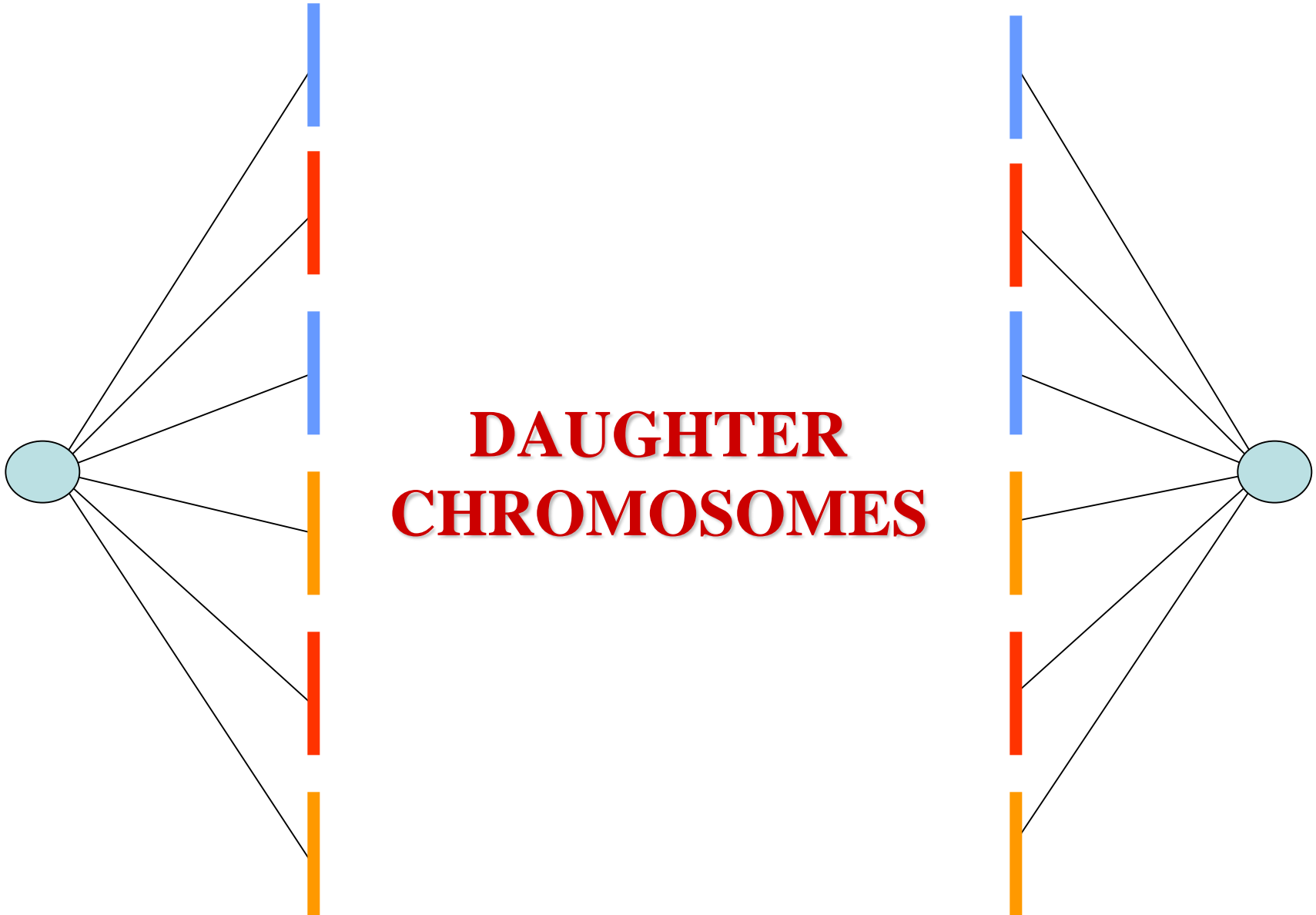
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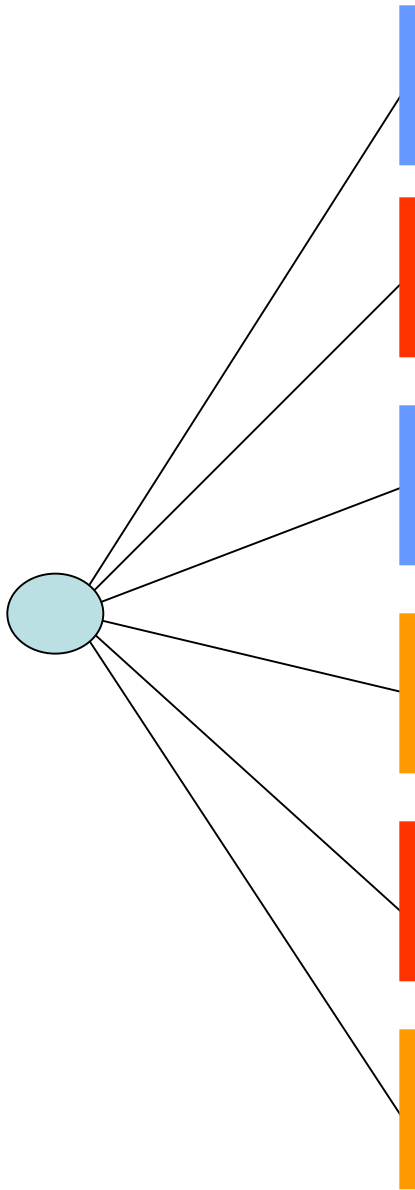
**CHROMOSOME
CHROMATIDS
SEPARATE**



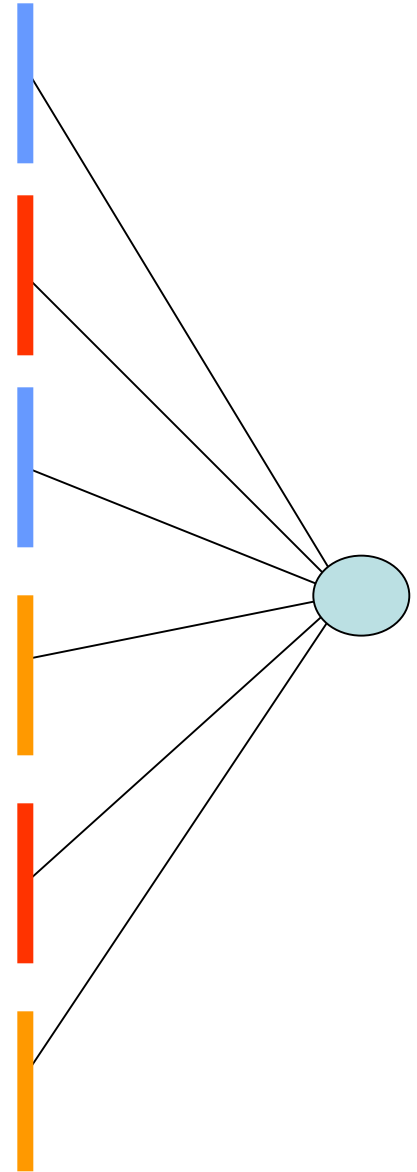
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ANAPHASE



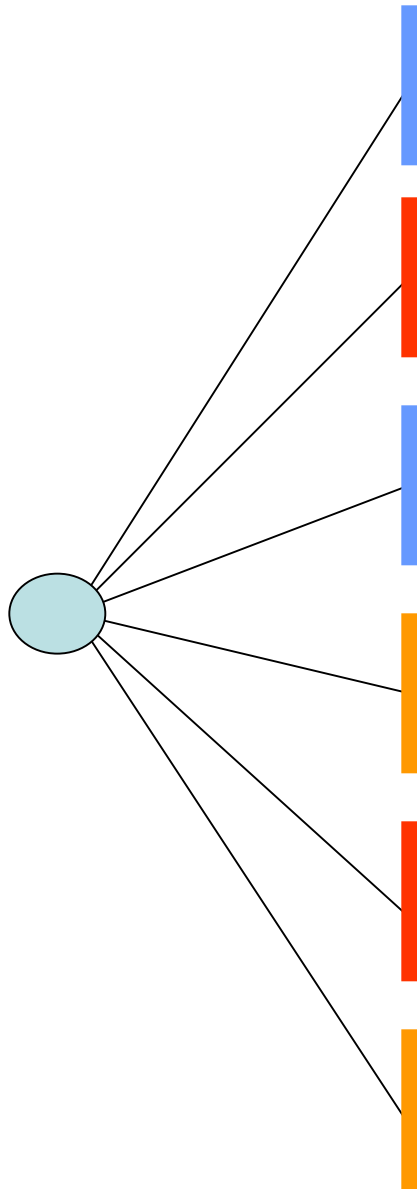
**DAUGHTER
CHROMOSOMES
OPPOSITE
POLES**



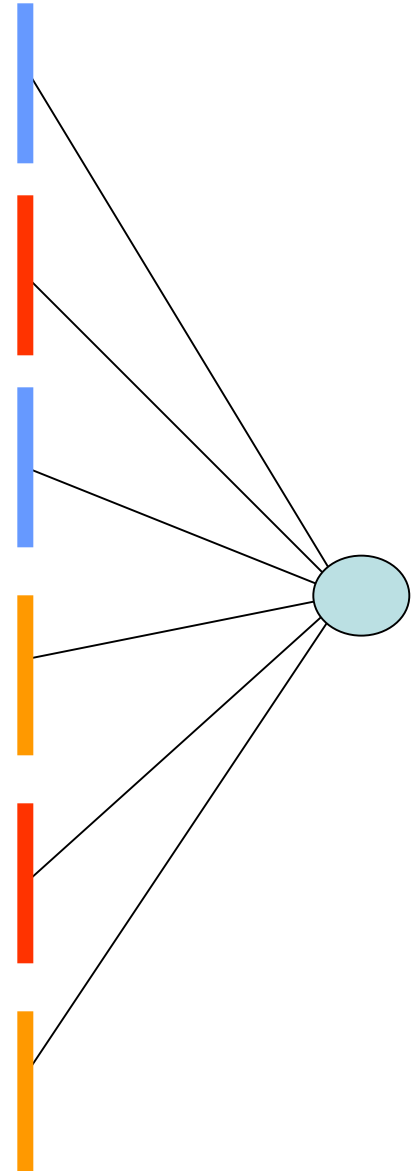


TELOPHASE

TELOPHASE



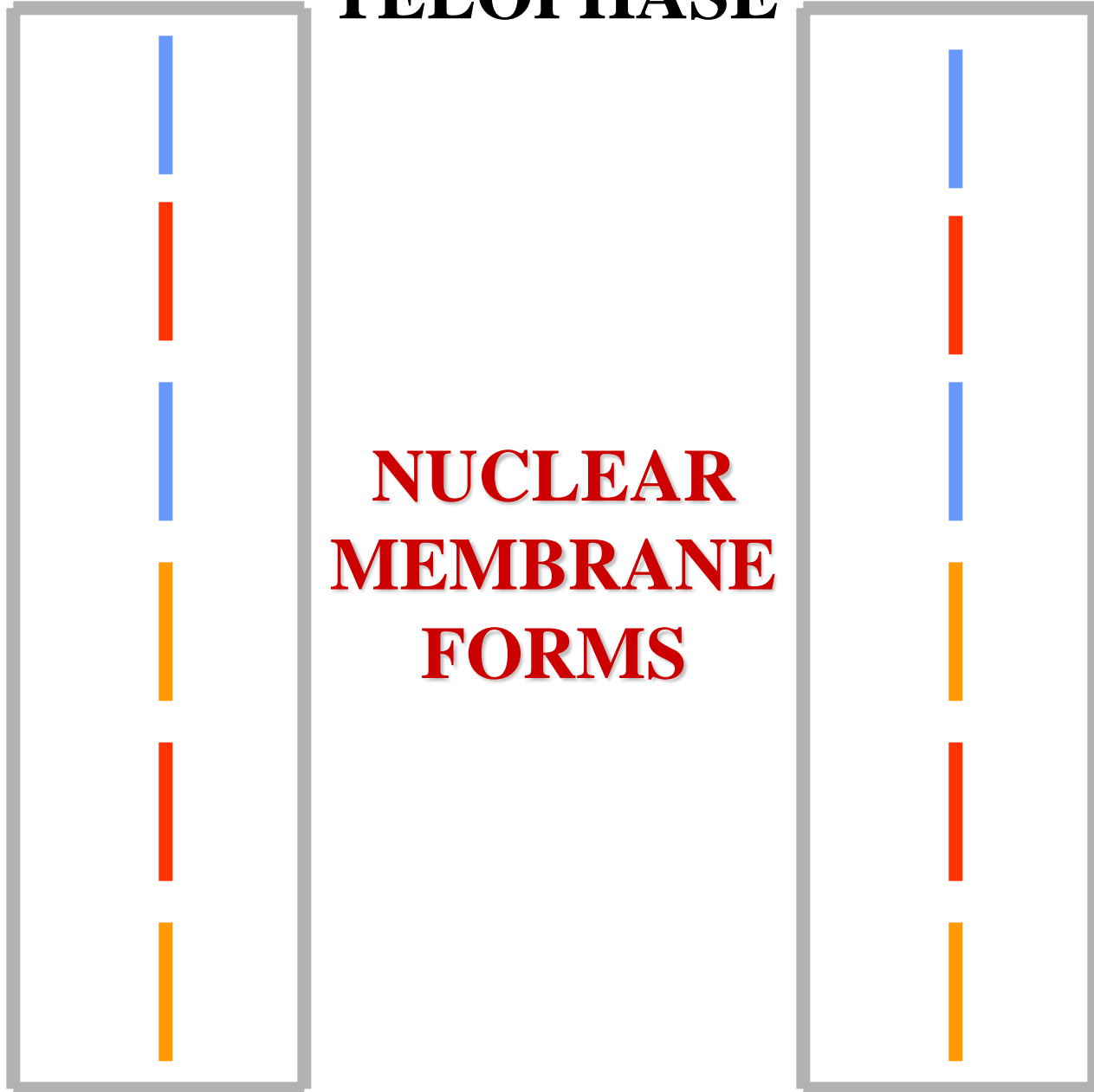
**DAUGHTER
CHROMOSOMES
OPPOSITE
POLES**



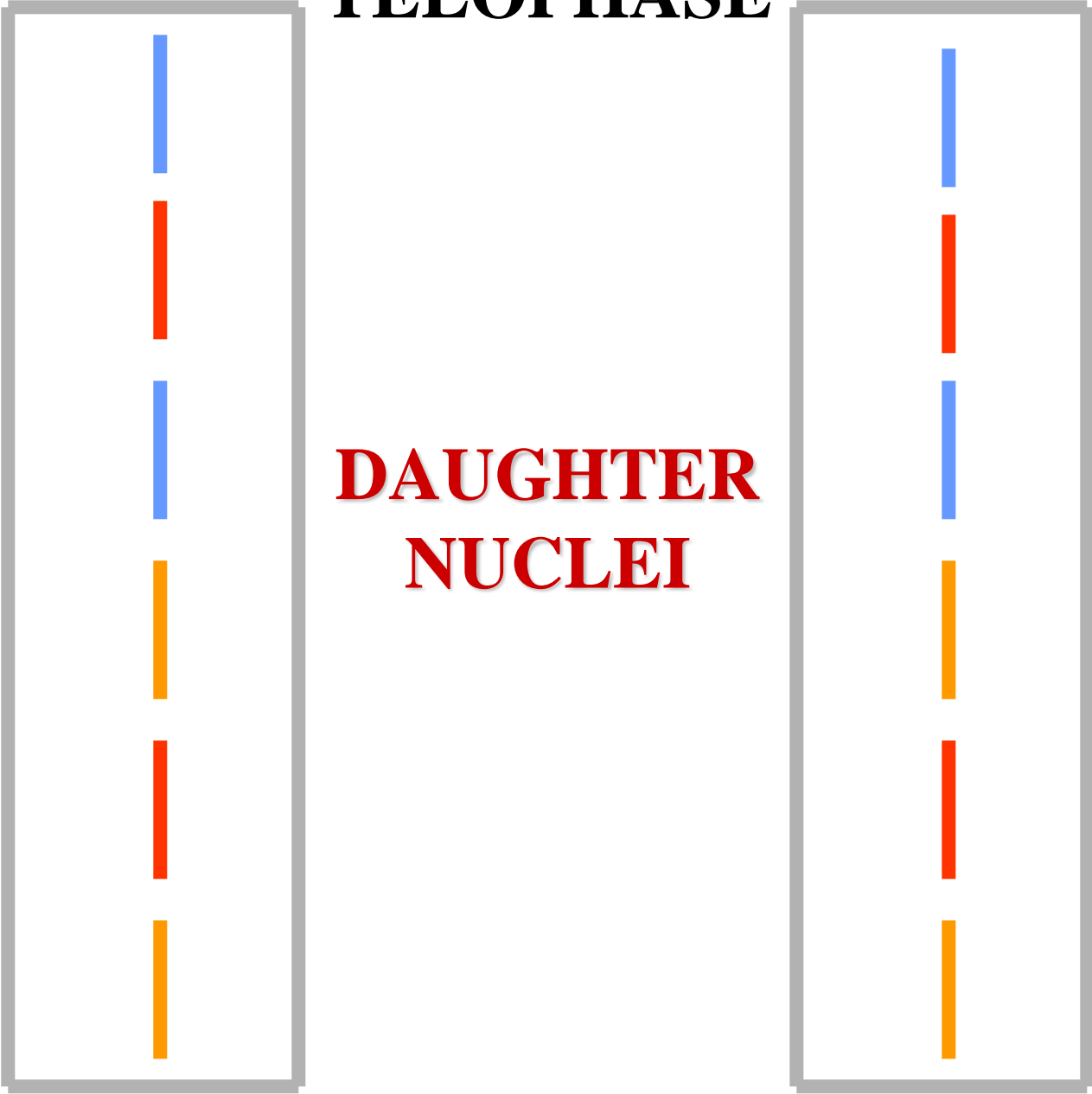
TELOPHASE

**SPINDLE
COMPLEX
DISSIPATES**

TELOPHASE



TELOPHASE





CYTOKINESIS



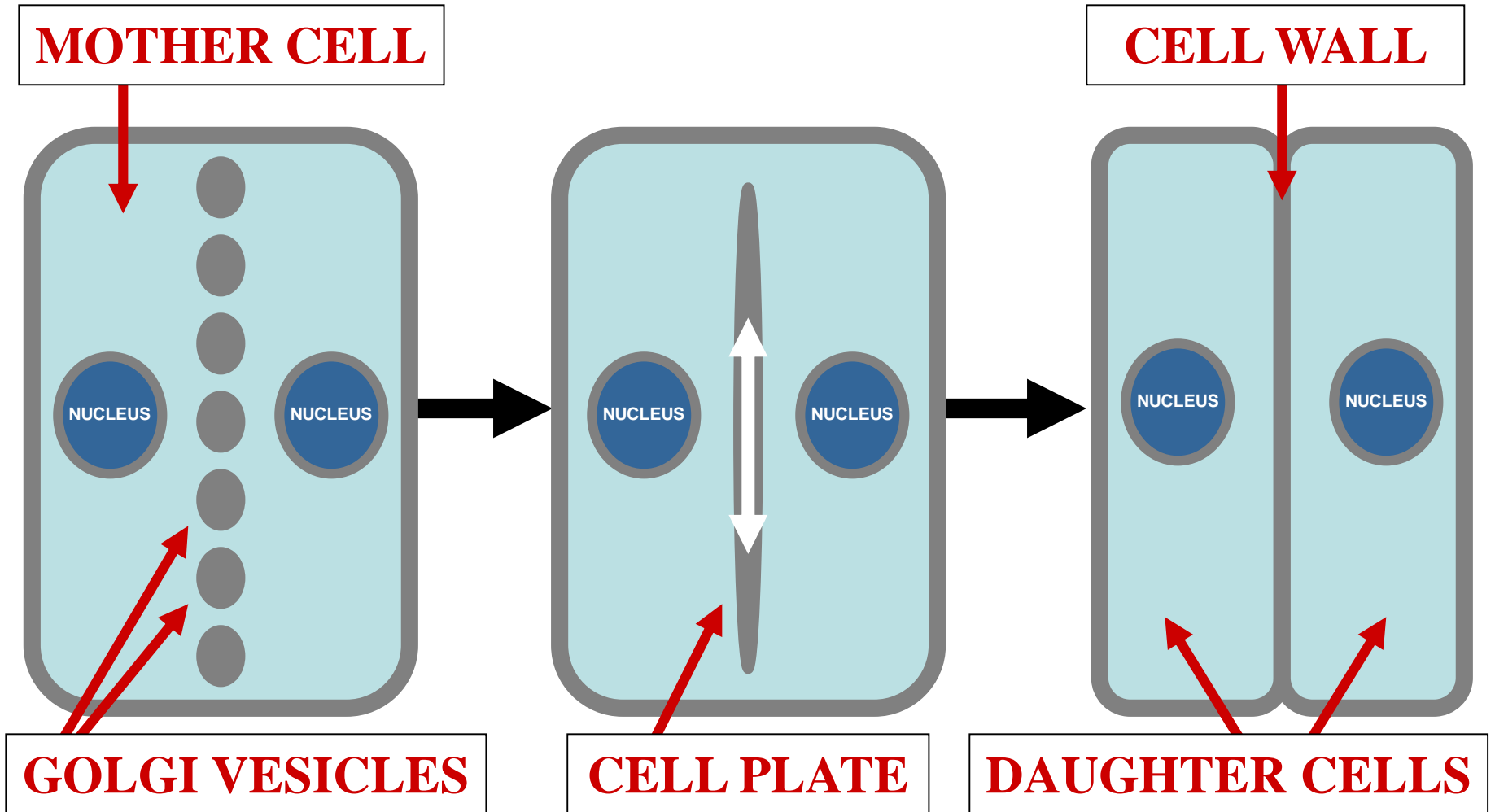
PLANT CYTOKINESIS





CYTOKINESIS

CELL PLATE

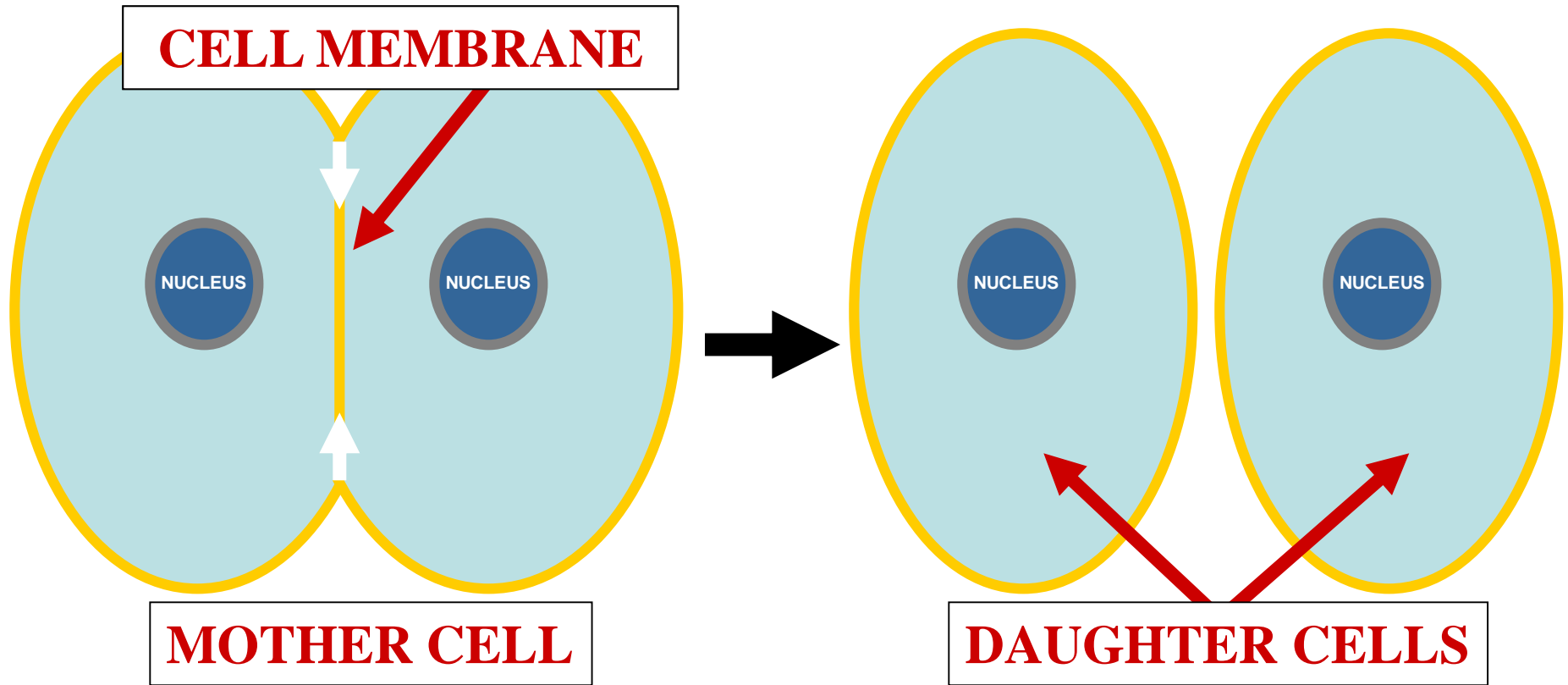




ANIMAL CYTOKINESIS



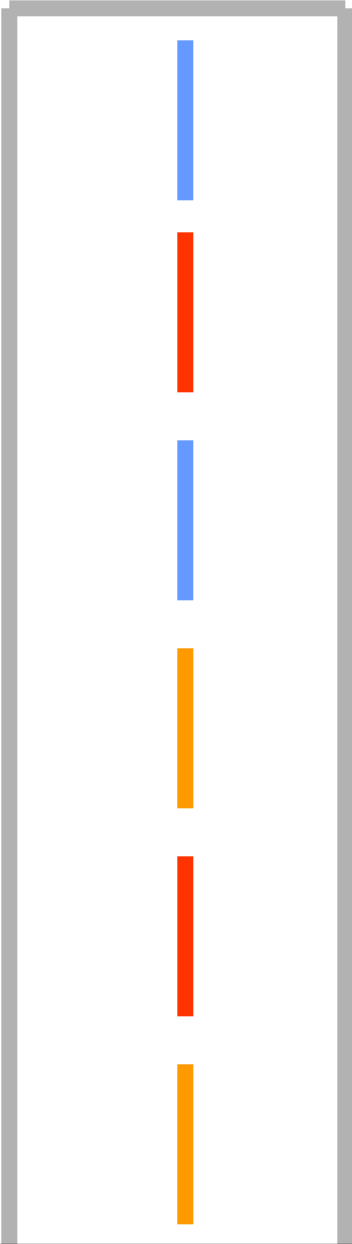
CYTOKINESIS FURROWING



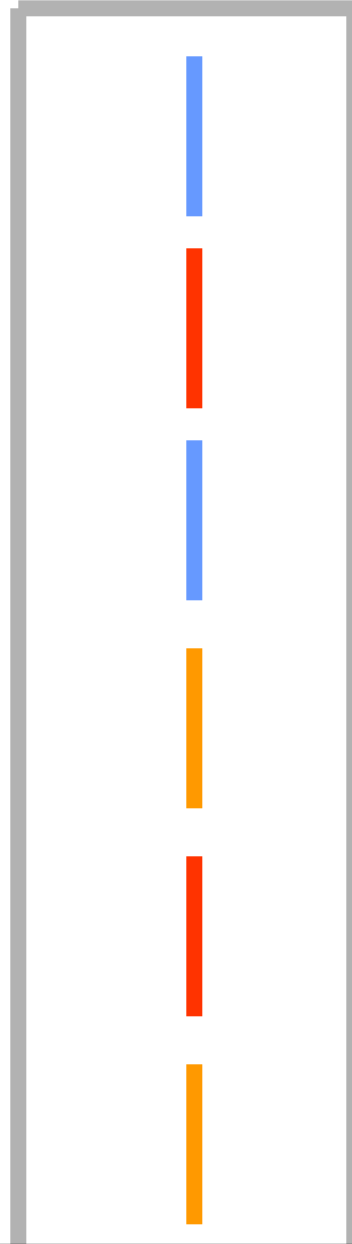
CYTOKINESIS FURROWING

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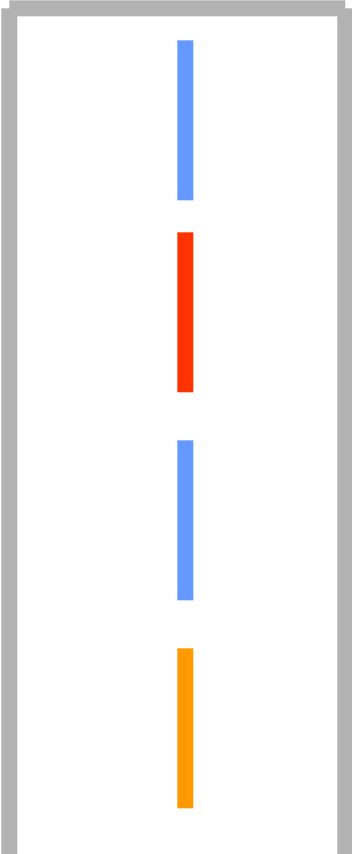
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DAUGHTER CELL

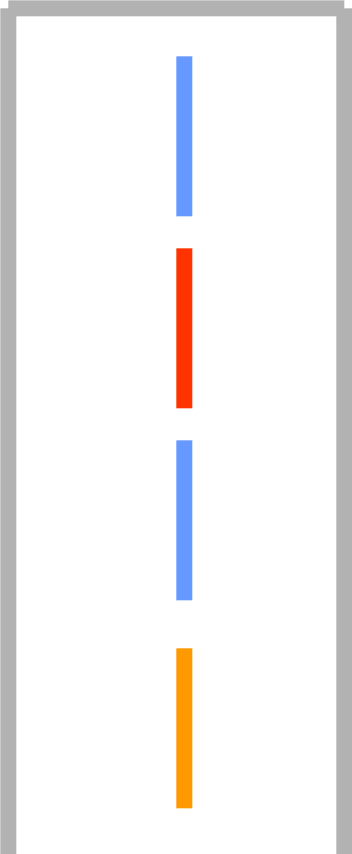


DAUGHTER CELL



6 CHROMOSOMES

DAUGHTER CELL



6 CHROMOSOMES

DAUGHTER CELL



**GENETICALLY
IDENTICAL**

6 CHROMOSOMES

6 CHROMOSOMES

DAUGHTER CELL

DAUGHTER CELL

**GENETICALLY
IDENTICAL**



DAUGHTER CELL

**GENETICALLY
IDENTICAL**



DAUGHTER CELL

CHAPTER 13

MEIOSIS

&

SEXUAL LIFE CYCLES



**ASEXUAL
REPRODUCTION
VS
SEXUAL
REPRODUCTION**

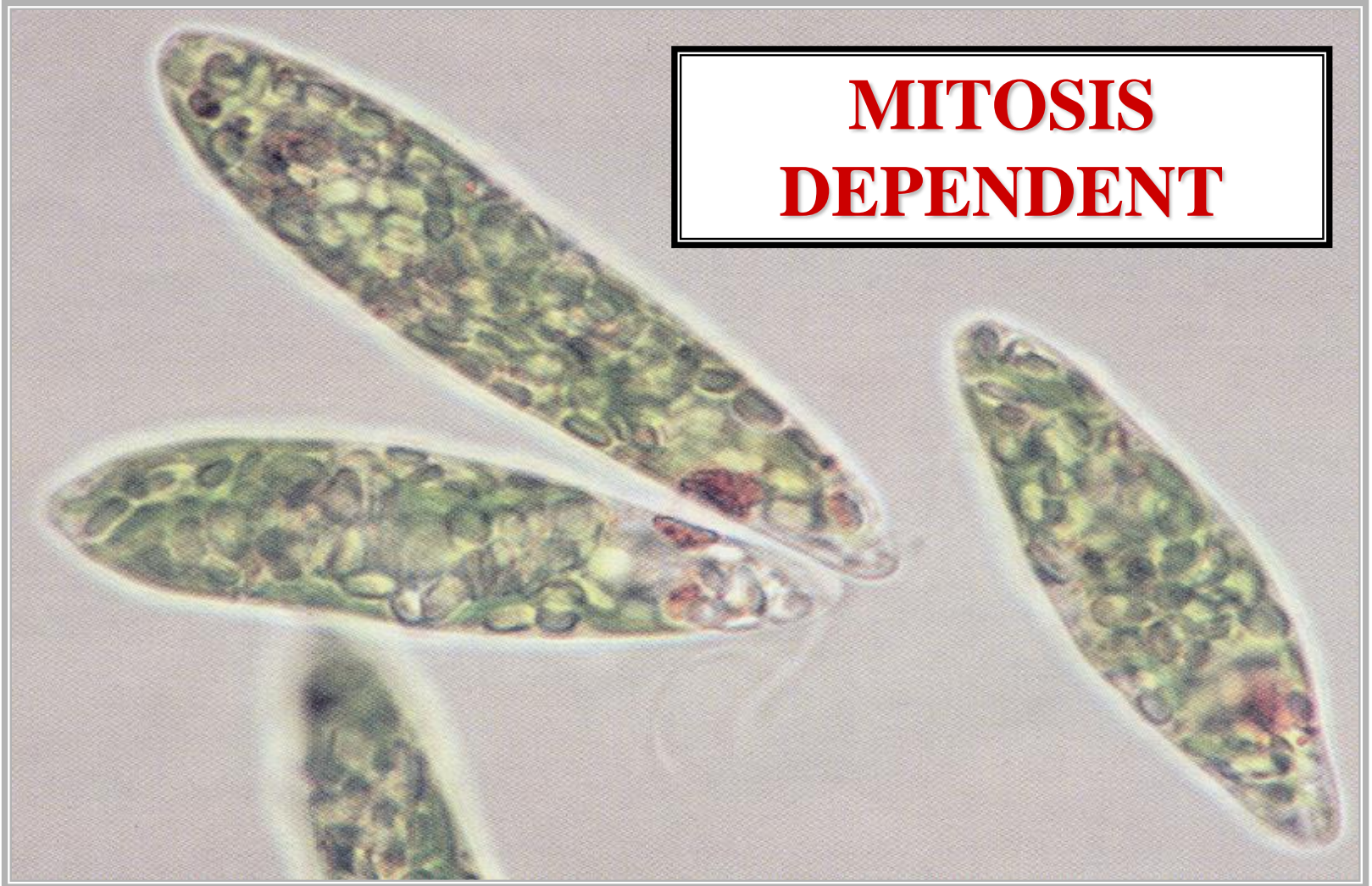
ASEXUAL REPRODUCTION

ASEXUAL REPRODUCTION

EG

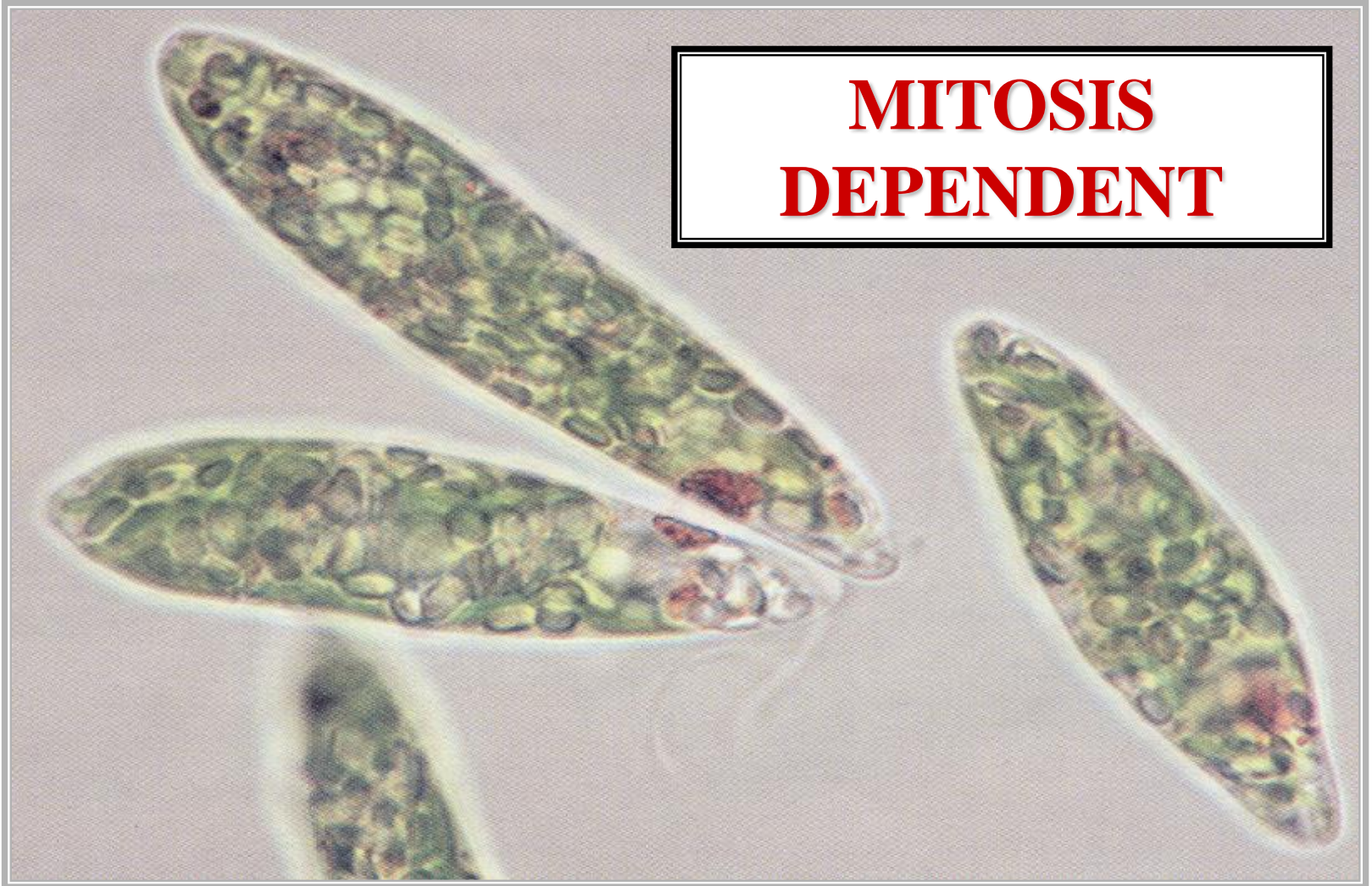
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**MITOSIS
DEPENDENT**



ASEXUAL REPRODUCTION

**MITOSIS
DEPENDENT**

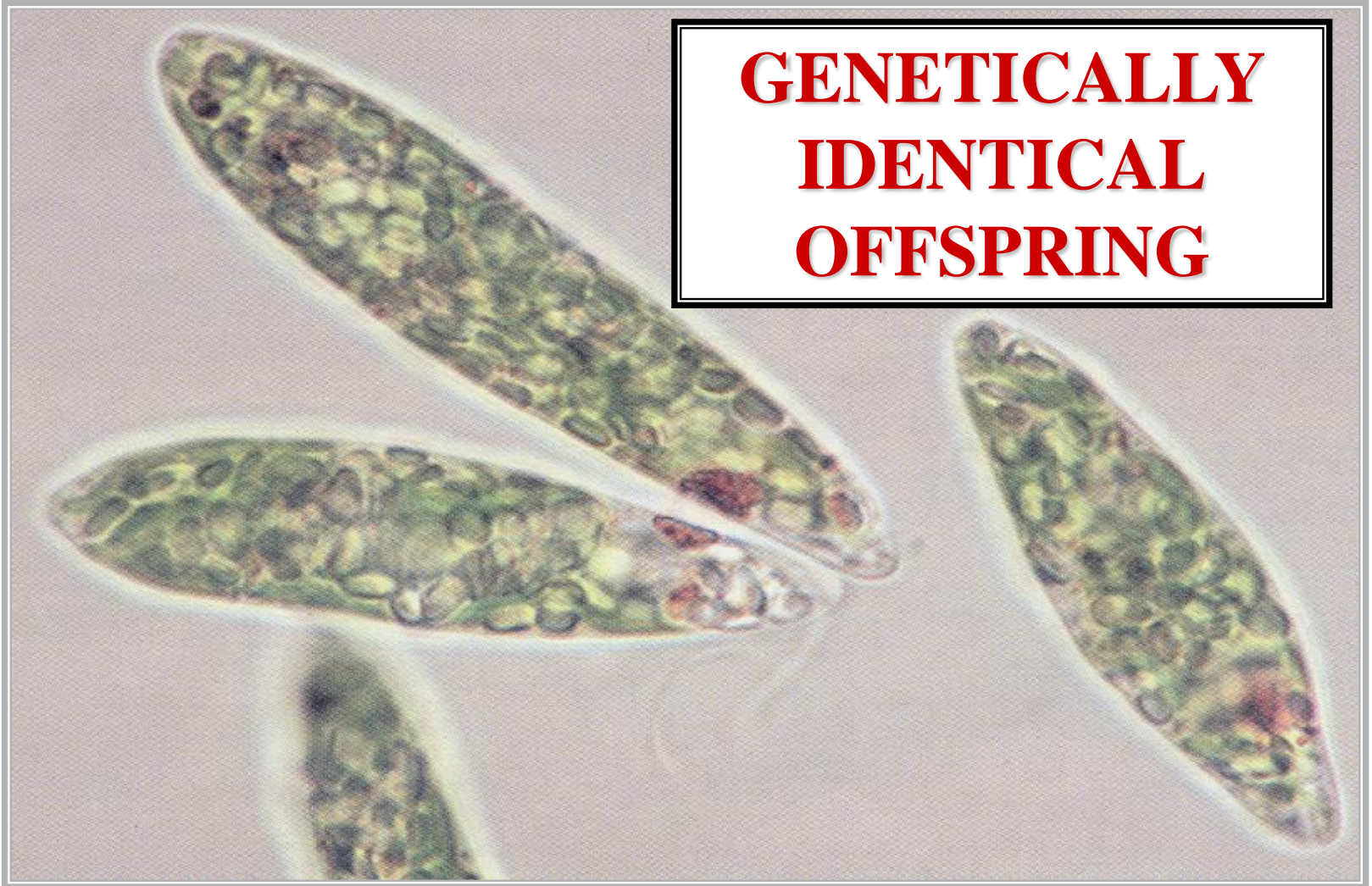


EUGLENA

ASEXUAL REPRODUCTION

GC

**GENETICALLY
IDENTICAL
OFFSPRING**

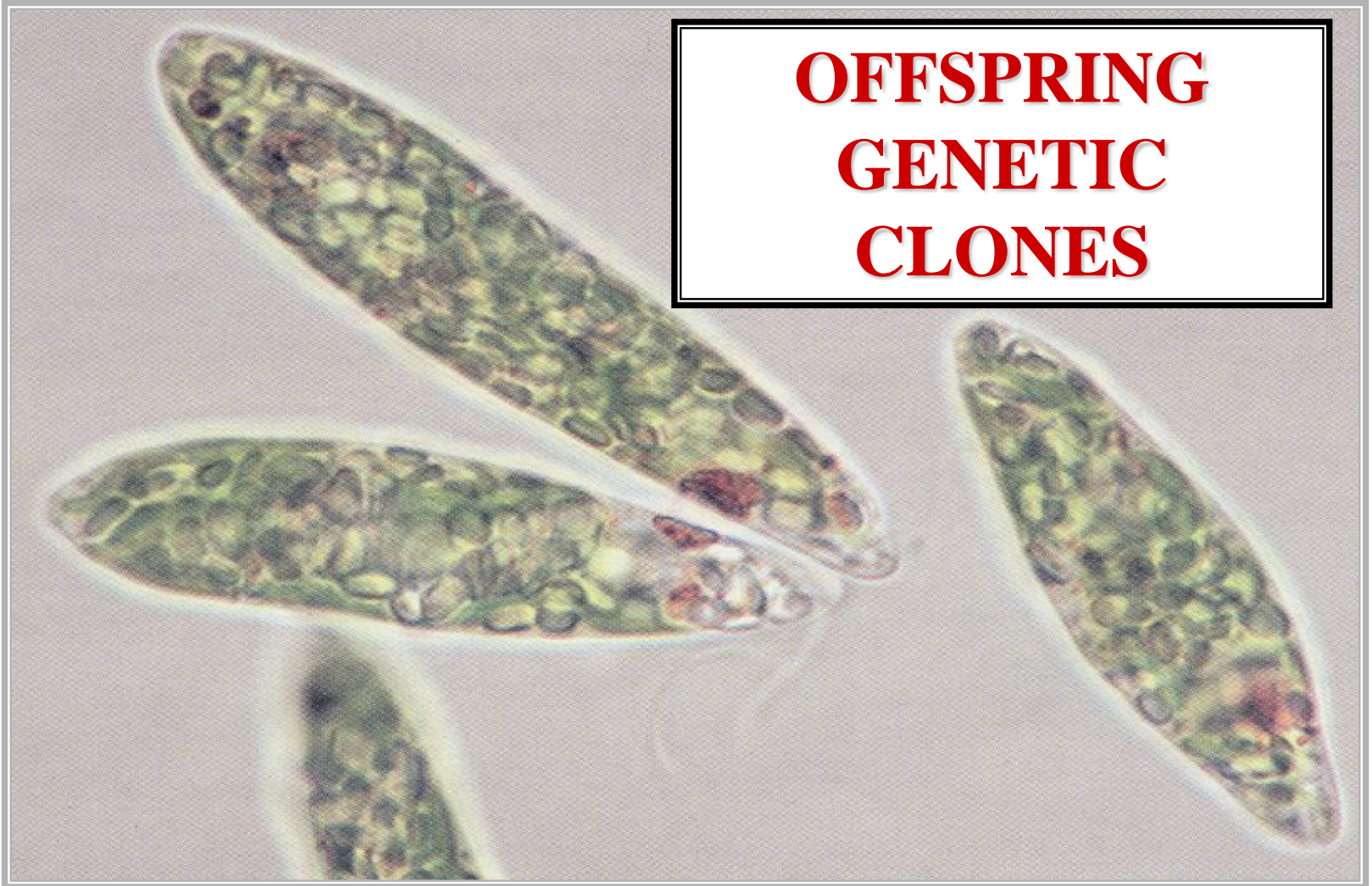


EUGLENA

ASEXUAL REPRODUCTION



**OFFSPRING
GENETIC
CLONES**



EUGLENA

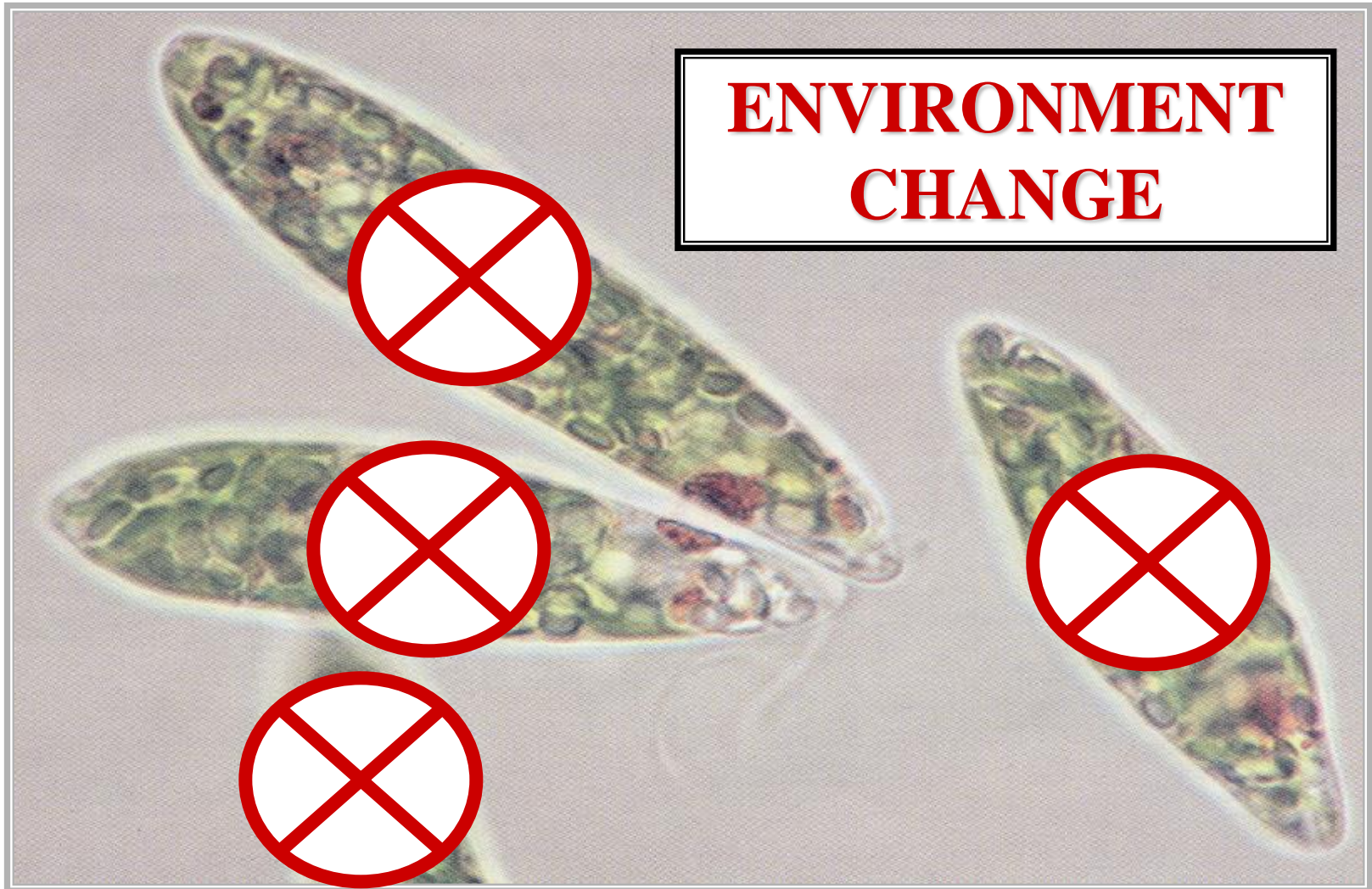
ASEXUAL REPRODUCTION



**ENVIRONMENT
CHANGE**

EUGLENA

ASEXUAL REPRODUCTION



**ENVIRONMENT
CHANGE**

EUGLENA

ASEXUAL REPRODUCTION

A microscopic image of several Euglena cells, which are elongated, spindle-shaped organisms with a greenish-brown internal structure. They are arranged in a cluster, with one cell in the foreground and others behind it. The background is a light, neutral color.

**ASEXUAL POPULATIONS
MORE VULNERABLE
ENVIRONMENTAL CHANGE**

EUGLENA

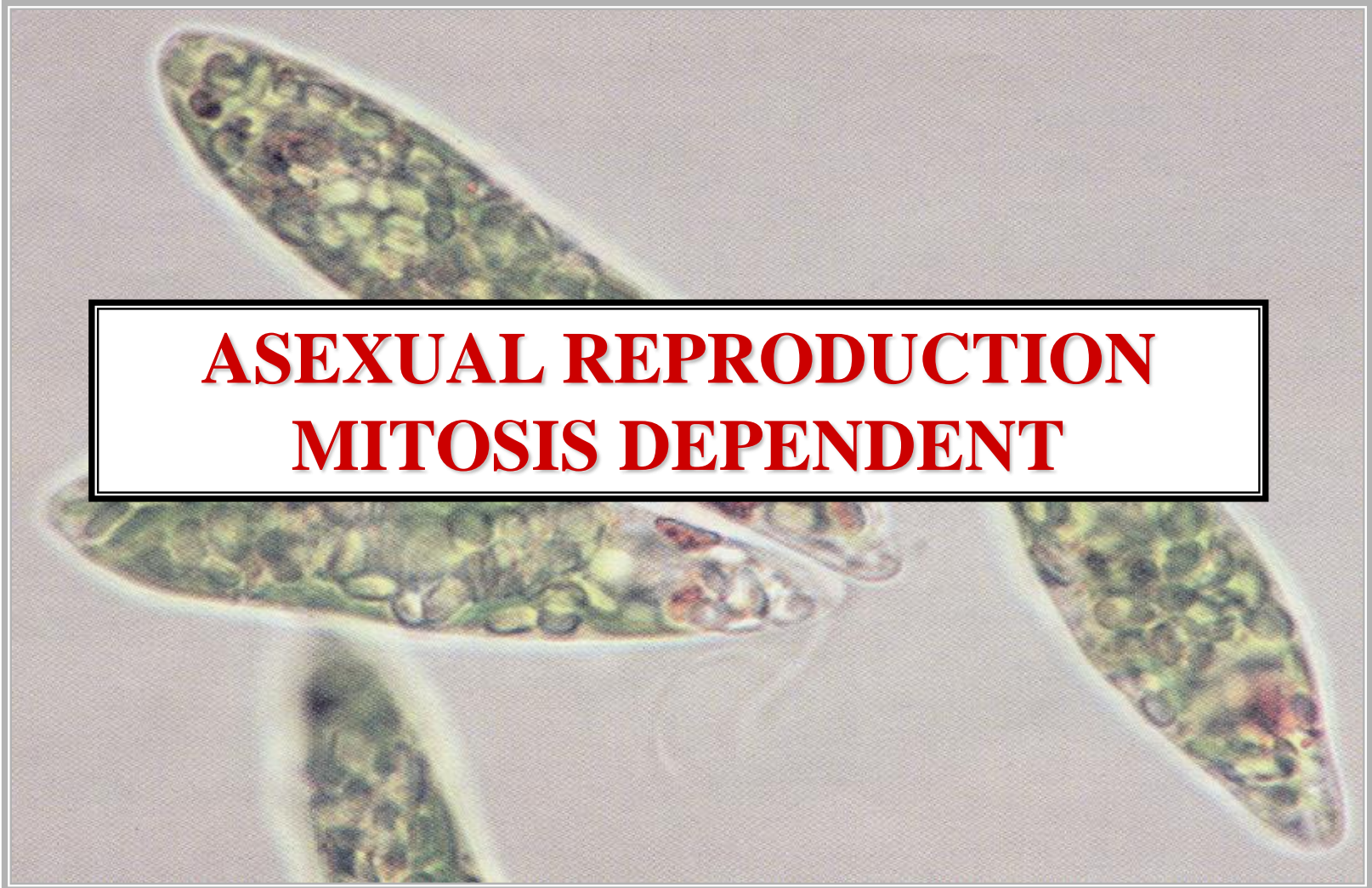
ASEXUAL REPRODUCTION

A microscopic image showing several elongated, spindle-shaped Euglena cells. The cells are filled with green chloroplasts and have a distinct flagellum at one end. They are arranged in a somewhat circular pattern around a central text box.

**ASEXUAL POPULATIONS
INHABIT STABLE
ENVIRONMENTS**

EUGLENA

ASEXUAL REPRODUCTION



**ASEXUAL REPRODUCTION
MITOSIS DEPENDENT**

EUGLENA



SEXUAL REPRODUCTION

SEXUAL REPRODUCTION



MEIOSIS DEPENDENT



SEXUAL REPRODUCTION



MEIOSIS DEPENDENT



HOMO SAPIENS

SEXUAL REPRODUCTION



GENETICALLY VARIABLE OFFSPRING



HOMO SAPIENS

SEXUAL REPRODUCTION



OFFSPRING NON-GENETIC CLONES



HOMO SAPIENS

SEXUAL REPRODUCTION



ENVIRONMENT CHANGE



HOMO SAPIENS

SEXUAL REPRODUCTION



**SEXUAL POPULATIONS
LESS VULNERABLE
ENVIRONMENTAL CHANGE**



HOMO SAPIENS

SEXUAL REPRODUCTION



**SEXUAL POPULATIONS
INHABIT LESS STABLE
ENVIRONMENTS**



HOMO SAPIENS

SEXUAL REPRODUCTION



**SEXUAL REPRODUCTION
MEIOSIS DEPENDENT**



HOMO SAPIENS

SEXUAL REPRODUCTION



**MEIOSIS ENSURES
GENETIC DIVERSITY**



HOMO SAPIENS

SEXUAL REPRODUCTION



**GERM CELL
UNDERGOES MEIOSIS**



HOMO SAPIENS

GERM CELL

GERM CELL



GERM CELL

**UNDERGOES
MITOSIS & MEIOSIS**

GERM CELL