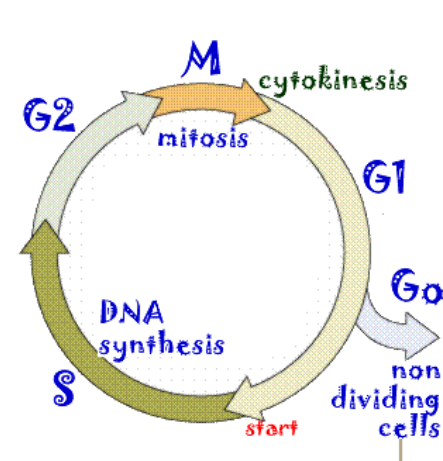
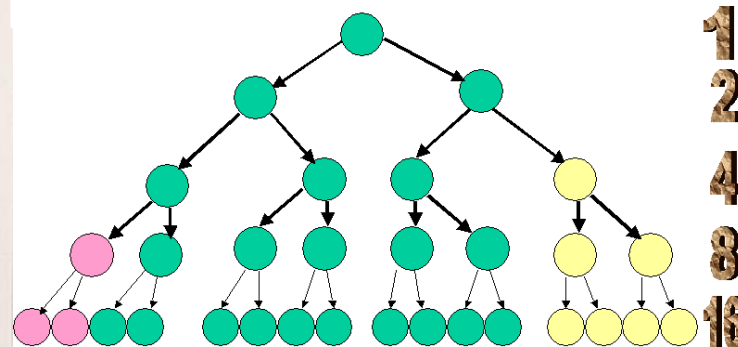
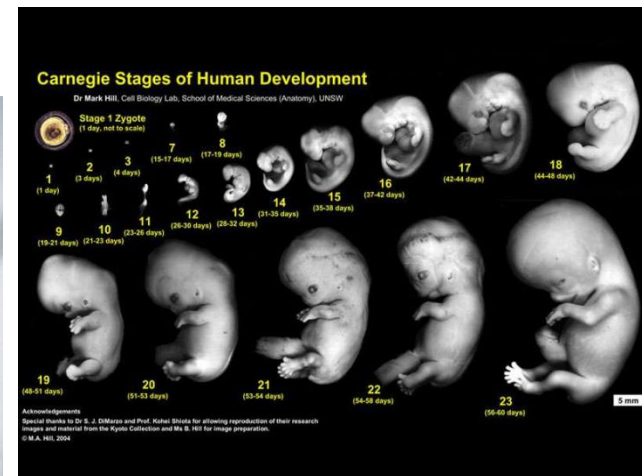


# Cell Replication

What is the purpose?

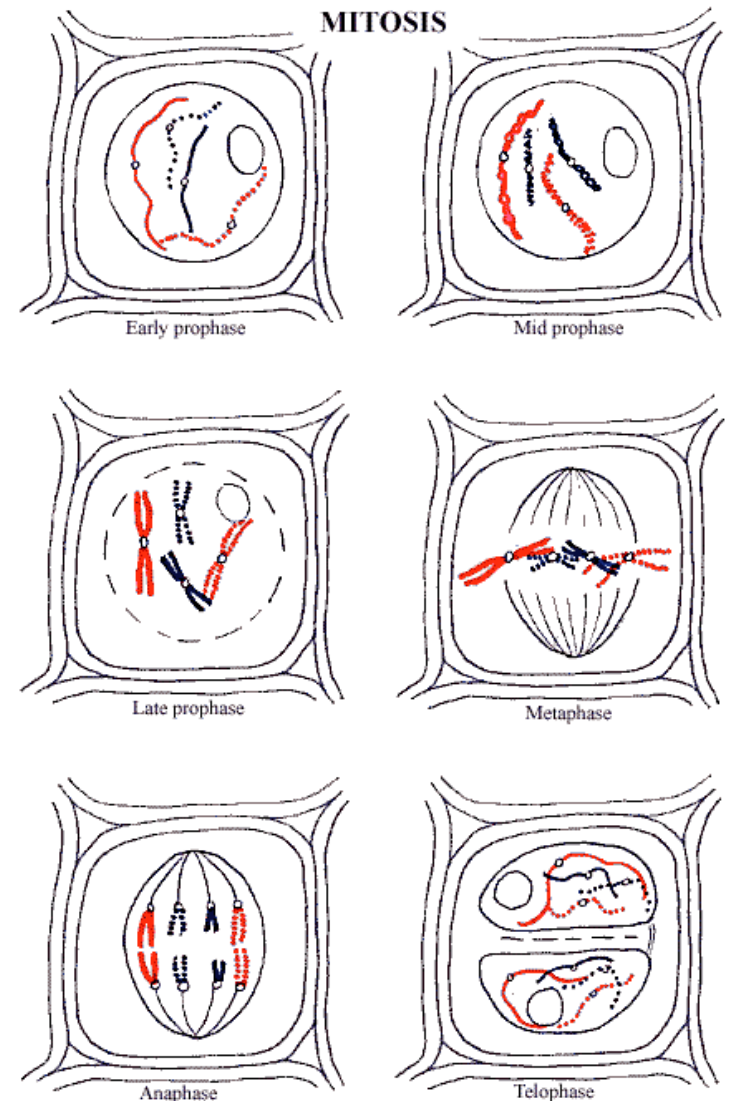
Can it relate to cancer?



Cell Replication  
Cell Replication

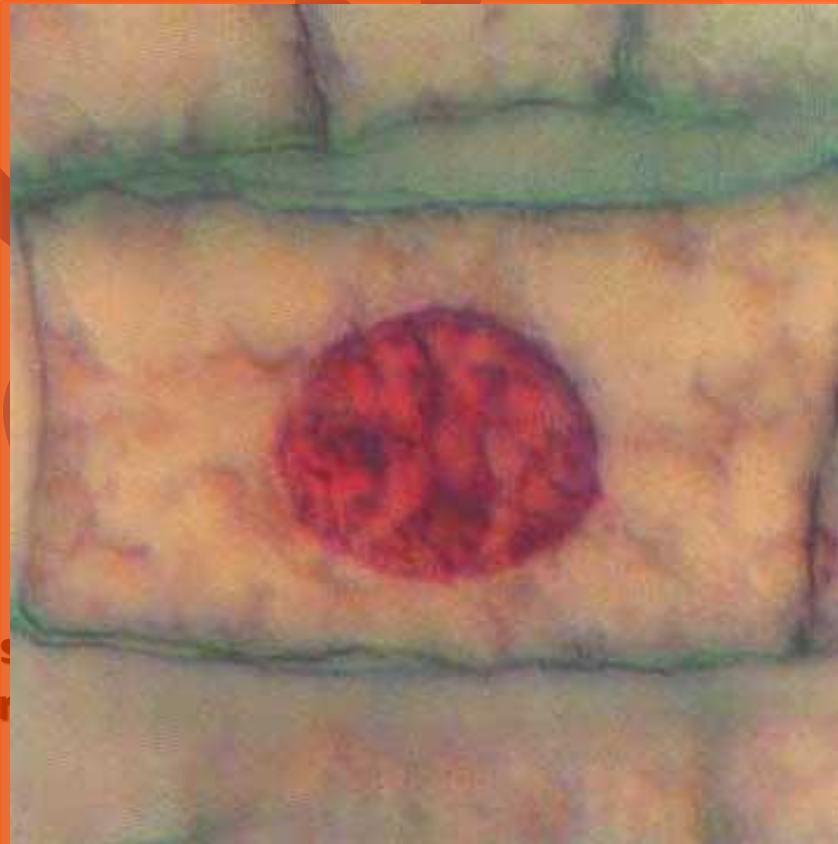
# Stages of cell replication

- Interphase
  - Organelles and DNA copied but NOT visible yet
- Mitosis
  - Chromosomes separated into 2 identical nuclei but cell not divided yet
- Cytokinesis
  - 2 daughter cells become independent
  - Cleavage furrow (animal)
  - Cell plate formation (plants)



# Interphase

**This cell has a :  
Diploid number = 4  
Haploid number = 2**

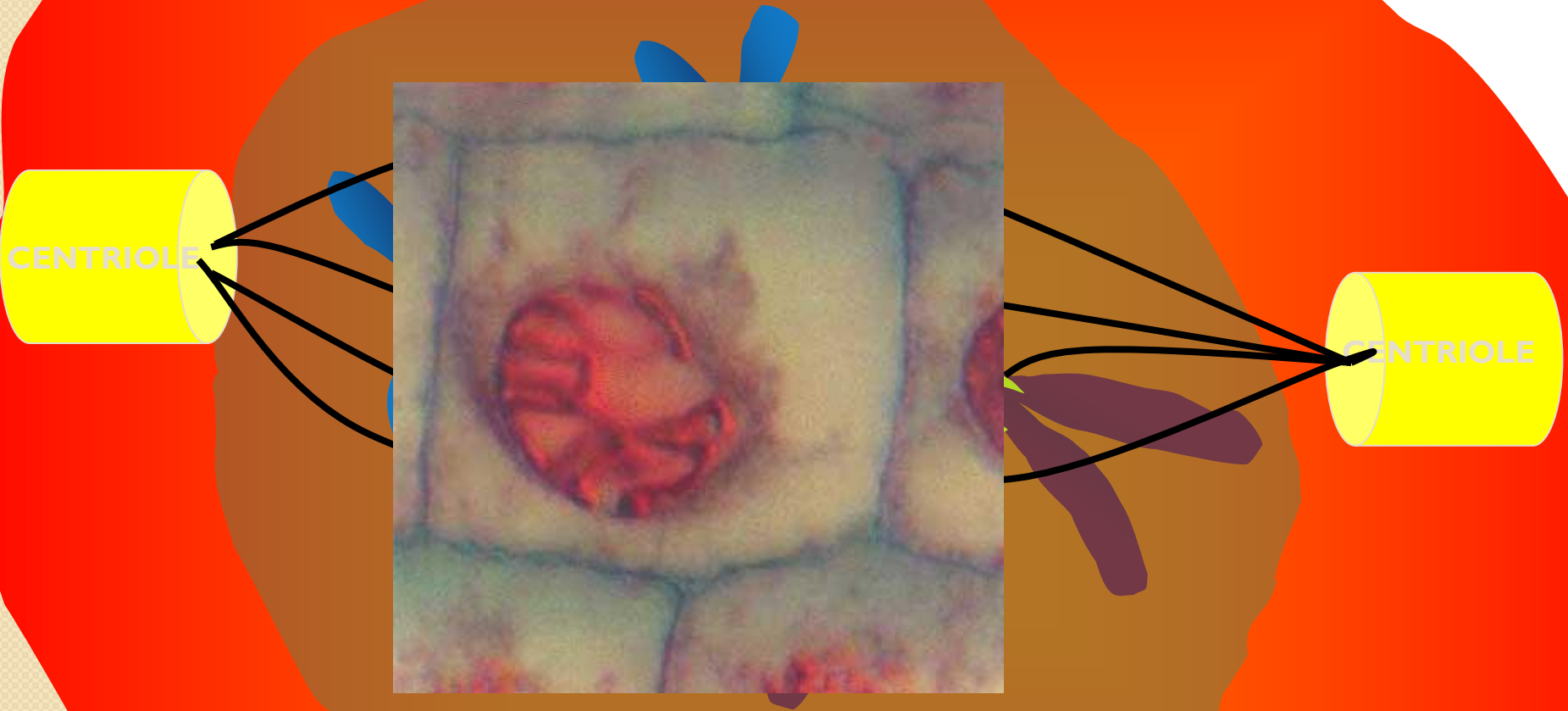


Sis  
chron

**Homologous  
Chromosomes**

**DNA is copied – still in long  
threads – chromosomes NOT  
yet completely visible**

# START MITOSIS - Prophase

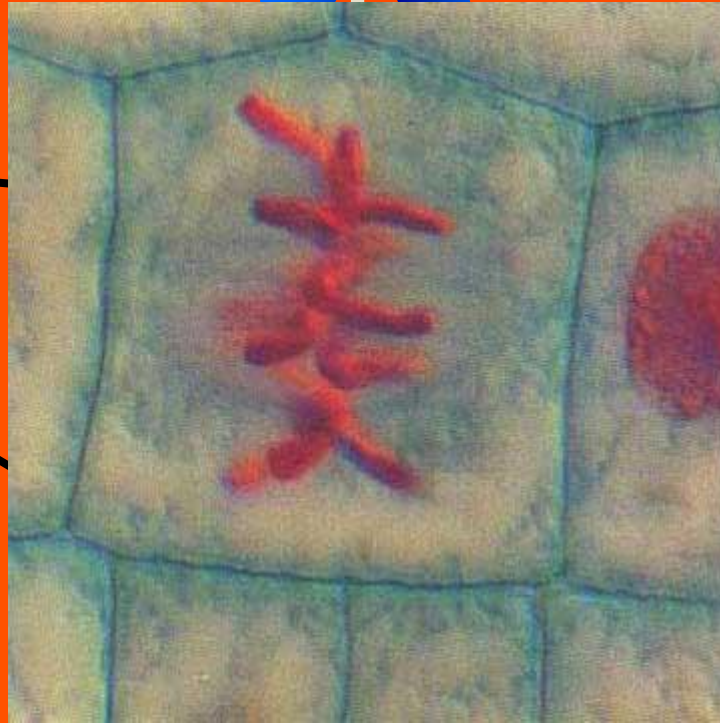
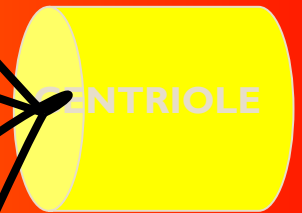


**Nuclear membrane breaks down**

**Chromosomes condense so you can now see them**

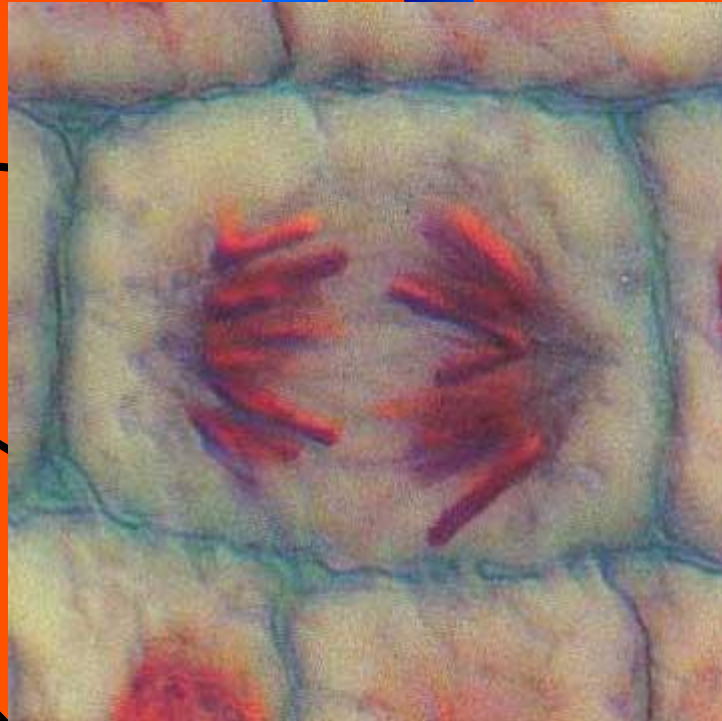
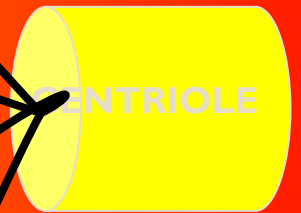
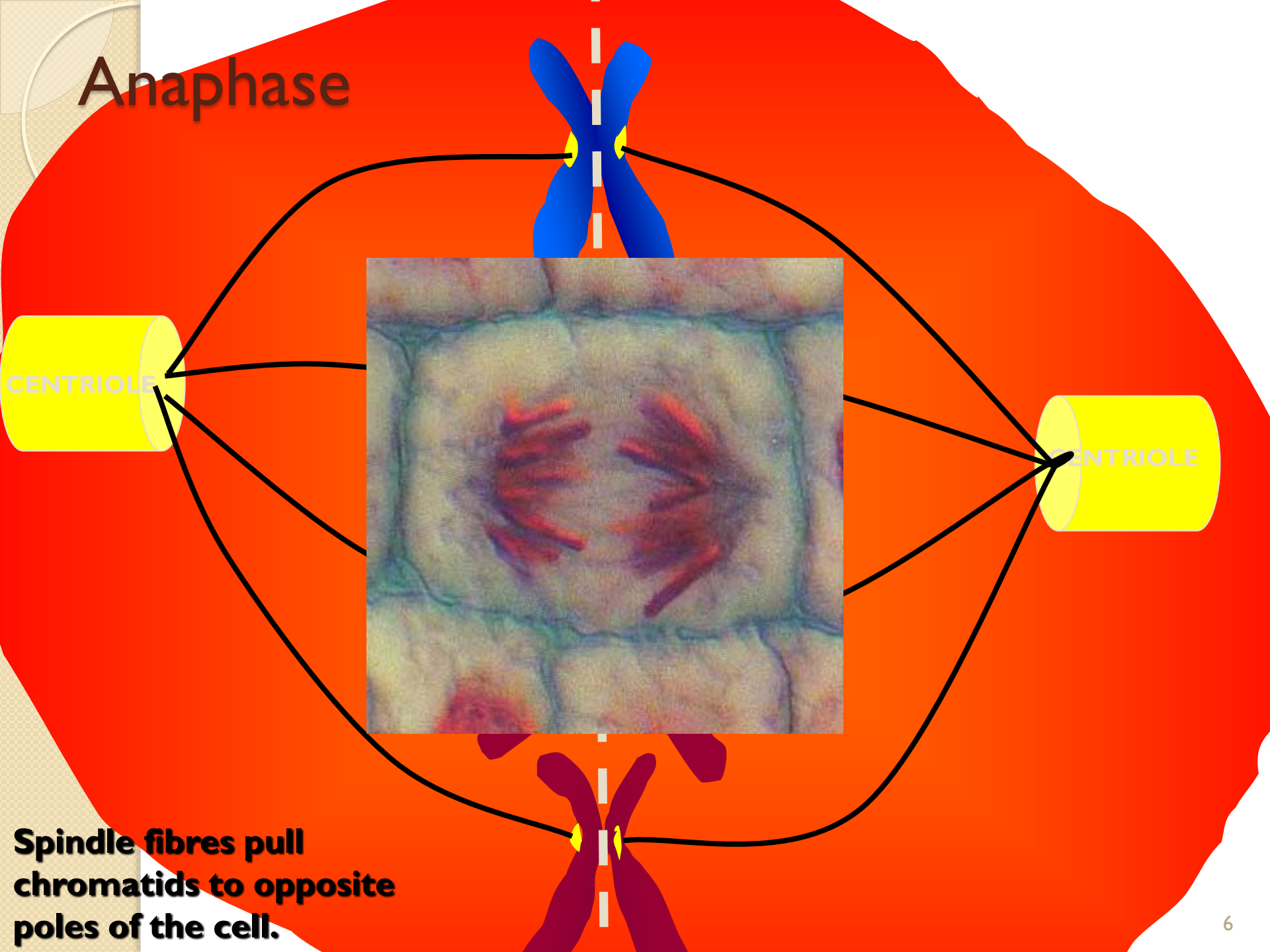
**Centrioles send out spindle fibres**

# Metaphase – line up on equator



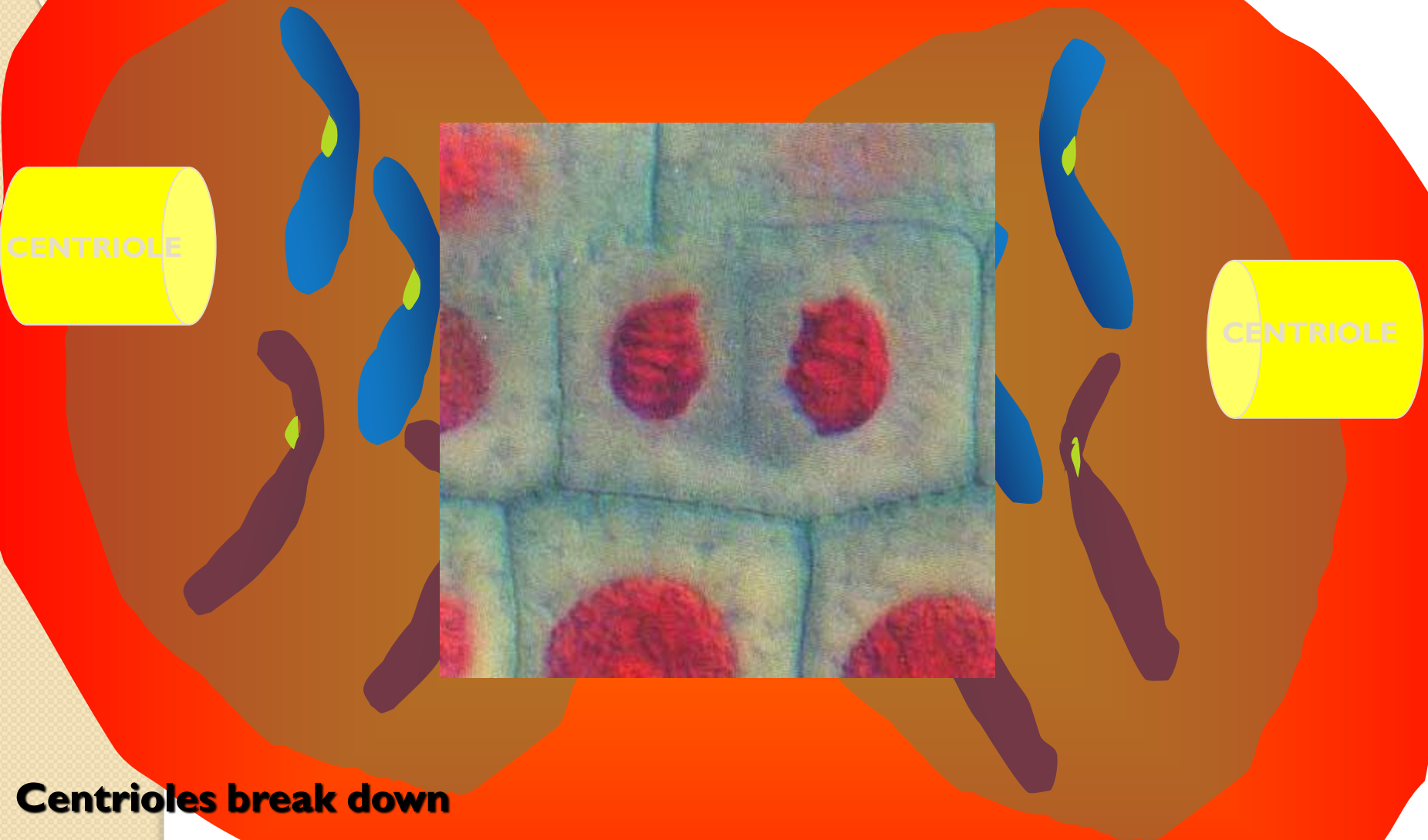
**Centromeres and spindle fibres drive the chromosomes to the equator**

# Anaphase



**Spindle fibres pull chromatids to opposite poles of the cell.**

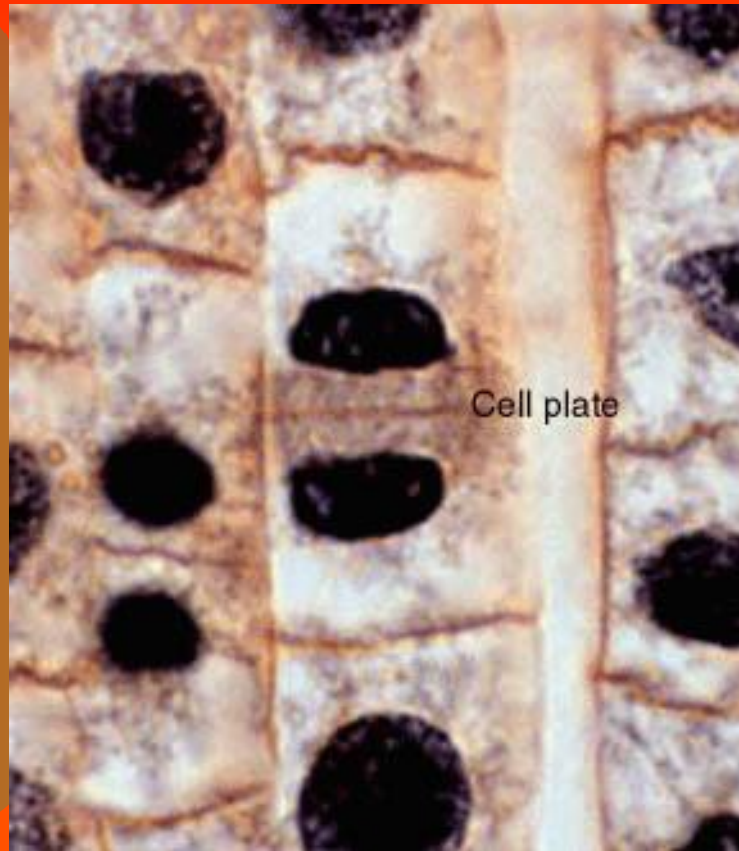
# Telophase



**Centrioles break down**

**Nuclear membrane forms around each set of chromosomes**

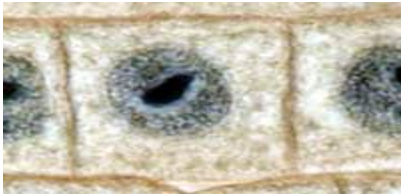
# Cytokinesis



**Two daughter cells with exactly the same chromosomes as the original parent cell.**

# Plant Mitosis -- Review

**Interphase**



**Prophase**



**Metaphase**



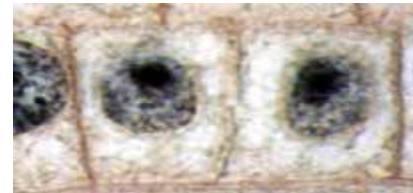
**Anaphase**



**Telophase**

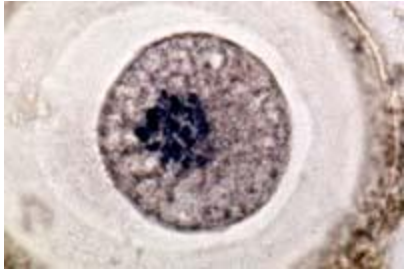


**Cytokinesis**



# Animal Mitosis -- Review

**Interphase**



**Prophase**



**Metaphase**



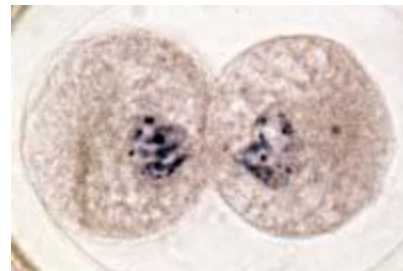
**Anaphase**



**Telophase**



**Cytokinesis**



## some extras...

