



PHONES & EAR BUDS away Please!

Mon, Nov 6, 2017

Pick up: none

Today you will:

1. Mitosis [Amoeba Sisters Mitosis Video Clip](#)
2. Diagram the phases of Mitosis and describe what is happening
3. Set up your onion roots (measure in cm)

Homework:

- Complete Phases of Mitosis

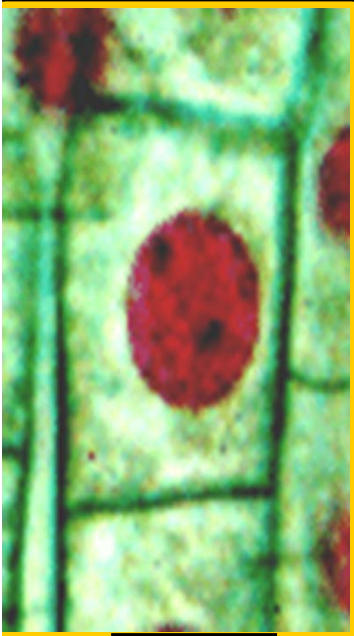
# DSQ

- Chromosomes contain the genetic information in the form of DNA. The cells of every organism contain a specific number of chromosomes. How many chromosomes does a human cell ENTERING mitosis contain? At the END????
  - A) 12                      B) 23                      C) 46                      D) 92

# CELL CYCLE

## MITOSIS

**INTER-  
phase**



**PRO-  
phase**



**META-  
phase**



**ANA-  
phase**



**TELO-  
phase**



# Onion Growth Lab

- How does different solutions affect root growth of an onion?
- Group 1-Red group: Sugar solution
- Group 2-Yellow: Salt solution
- Group 3-Pink: Red food color
- Group 4-Orange: Alkaline solution
- Group 5-Green: Acid solution
- Control: distilled water

On notebook paper:

- Question
- Hypothesis
- Data table that includes all data (not just your group) for M-next Wednesday
- Conclusion paragraph
- Measure root length each day & compile class data.

# Phases of Mitosis

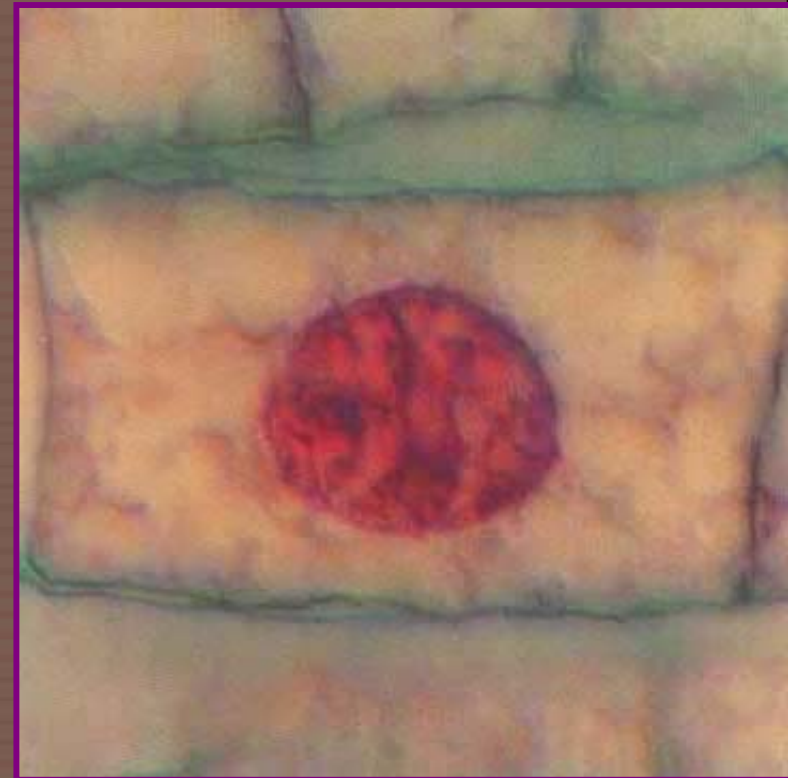
- Complete front of Recap
- On back of Amoeba Sisters Recap:
  - Use TB pgs 140-141
  - Draw the cells and position of the chromosomes in each of the 5 phases of the cell cycle
  - Label which phases are part of Mitosis
  - Describe what is happening in each phase next to the cell

# The Cell Cycle

## □ INTERPHASE: 1st

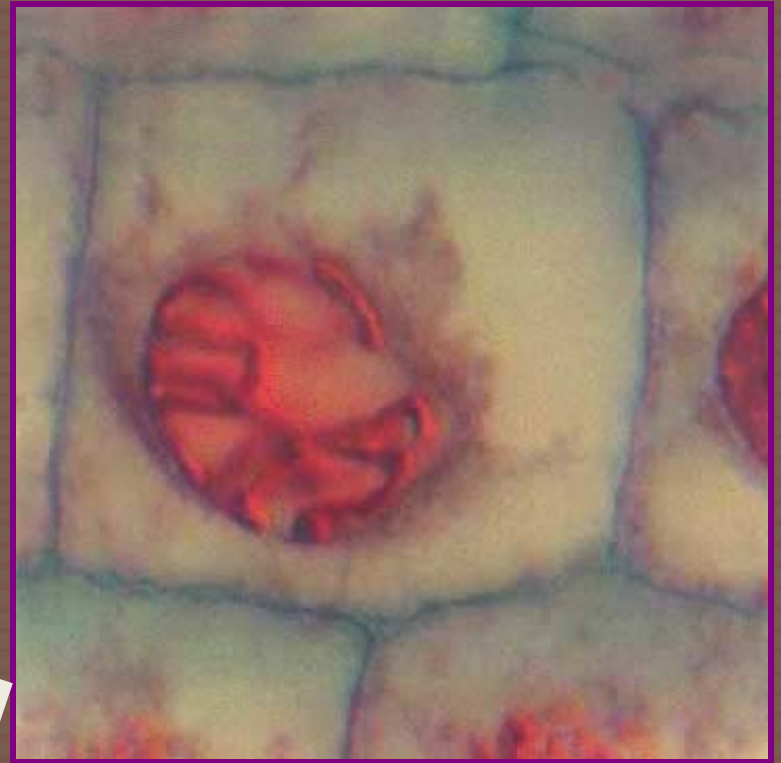
1. *Cell growth*
2. *DNA Replication:*

- $G_1$  = cell growth and synthesis of organelles
- $S$  = DNA replication = chromatin  
→ xosomes
- $G_2$  = more growth



# PROPHASE

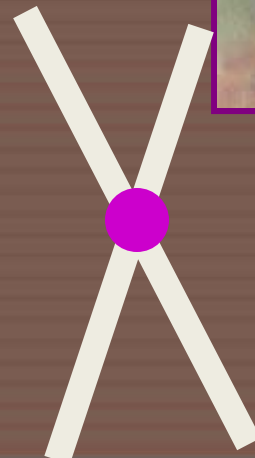
1. *DNA shortens & thickens...*
2. *...to become visible xosomes:*
3. *Centrioles/centrosome w/spindles form & move to poles*



2 chromatids +

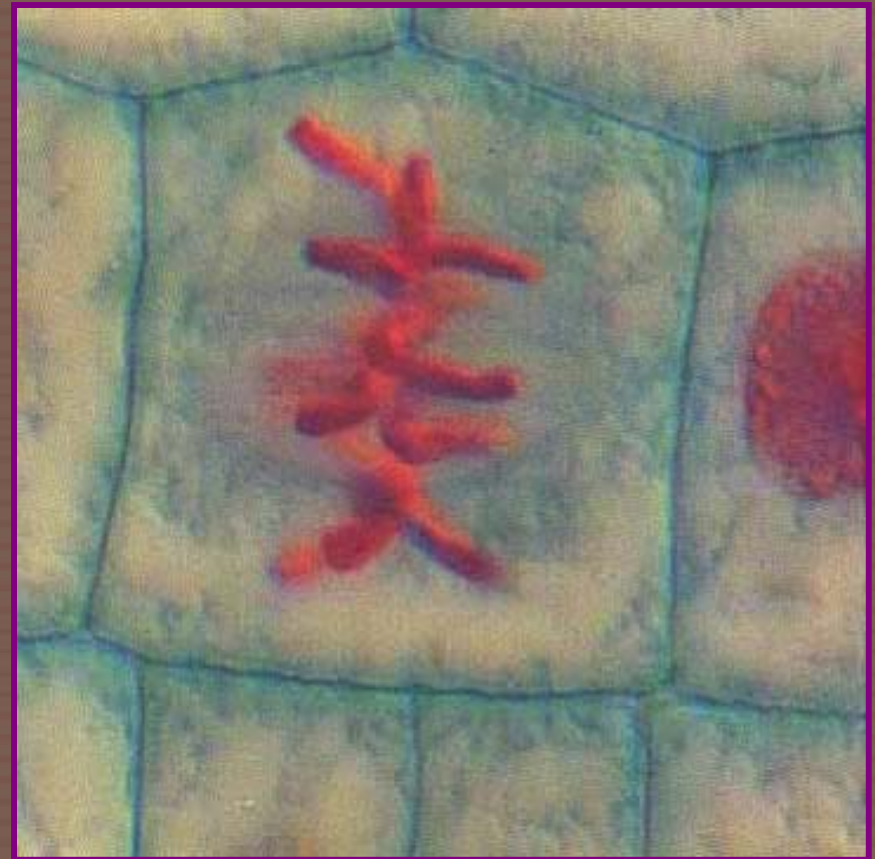
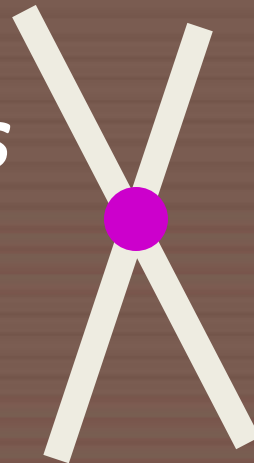
1 centromere =

1 chromosome



# METAPHASE

1. Spindle fibers attach to chromosomes at the centromeres



2. chromosomes to

move to equator

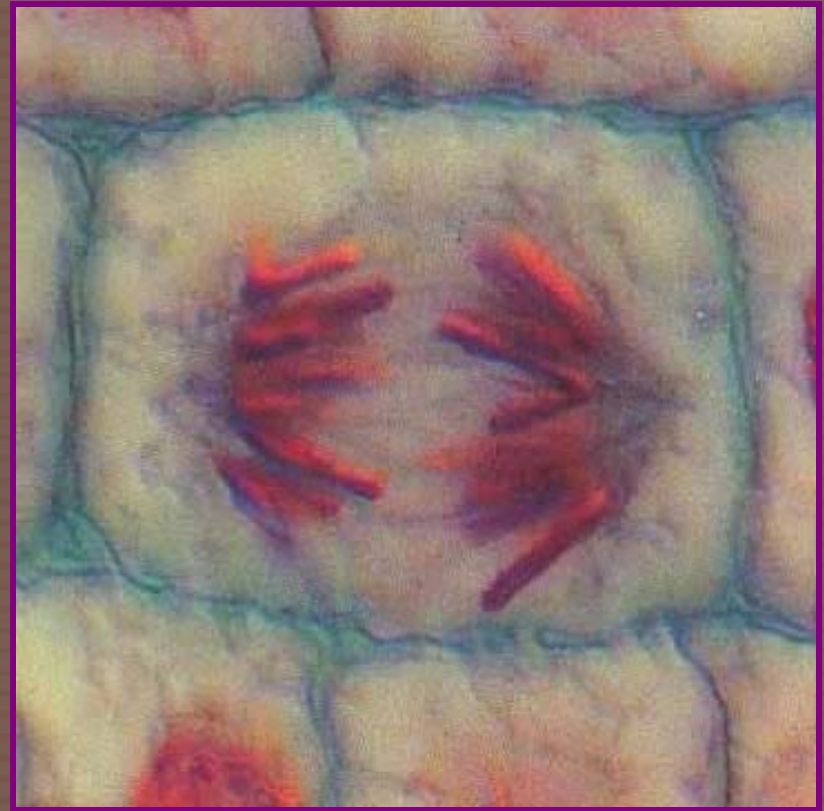


# ANAPHASE

1. *x*somes split (at centromere) - becoming **individual *x*somes**

2. *Each moves apart towards pole*

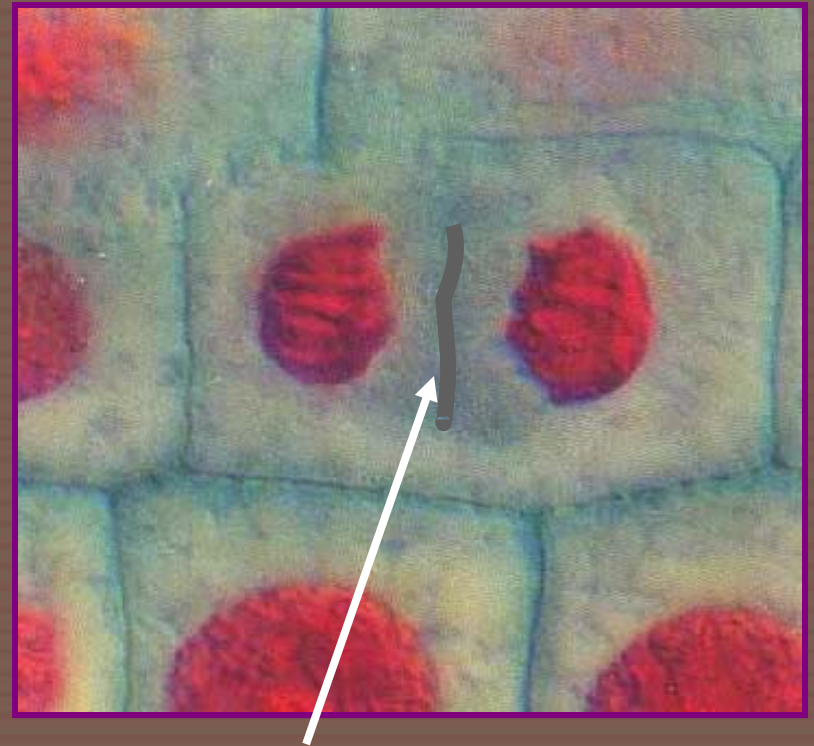
- *End up with one set of single-stranded *x*somes at each pole*



# TELOPHASE - final phase

1. *Xsomes uncoil to become single strands (chromatin) again*
2. Result - *2 new nuclei w/ same set of genetic info. as parent cell....*

*....but division of cell not complete....*



CELL PLATE: splits plant cells apart

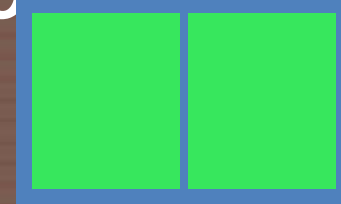
# Cytokinesis-

*Div. of cytoplasm following mitosis*

- *Animal cell - microfilaments in mem. contract causing plasma mem. to pinch in at center*



- *Plant cell - do not pinch, wall too rigid - cell plate forms in middle*

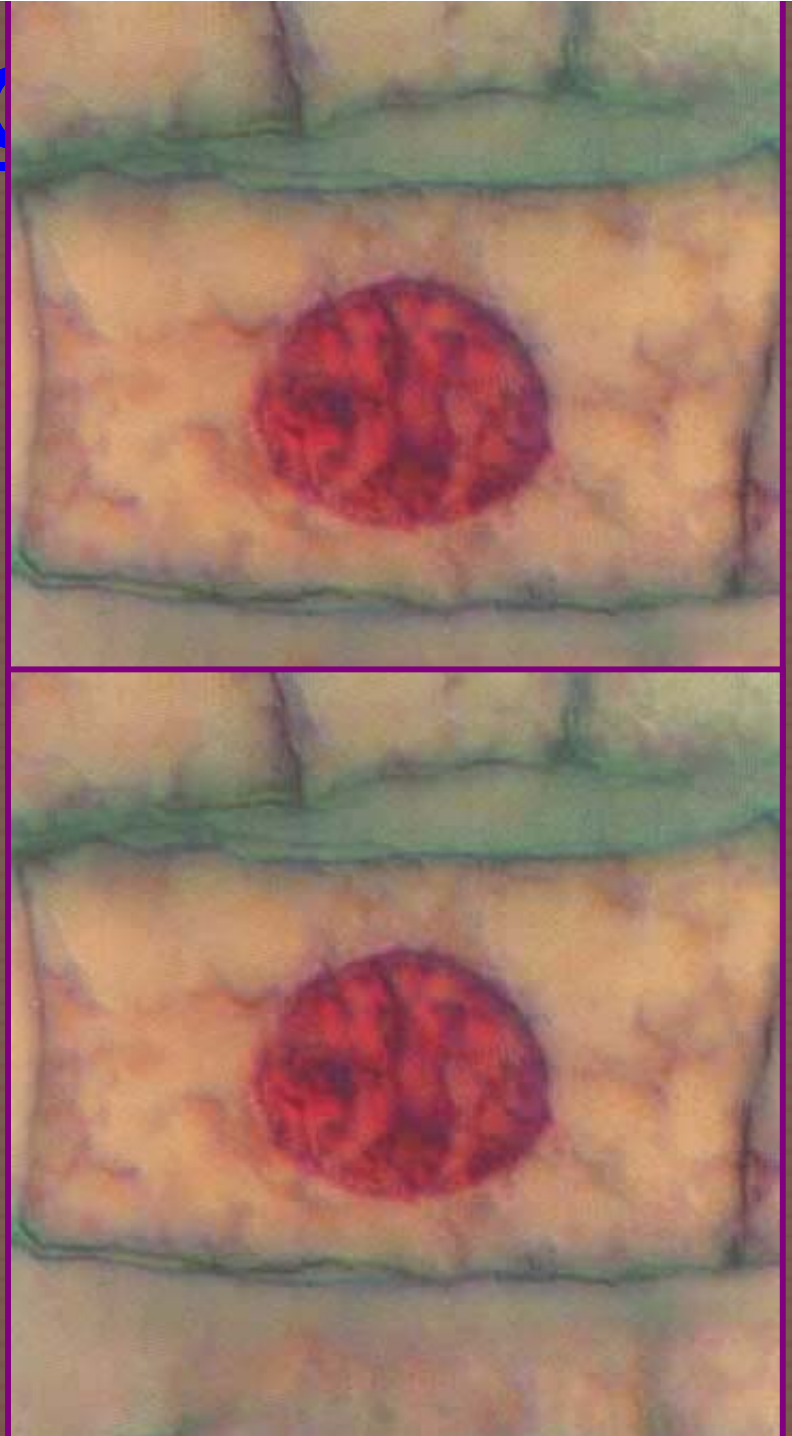


- *Daughter cells will then move into Interphase & start the whole process over again...*

# THE CELL C

- INTERPHASE  
AGAIN:

- *Process starts all over with 2 new daughter cells – they split into 4 – then 8 – then 16 – then 32 etc.*



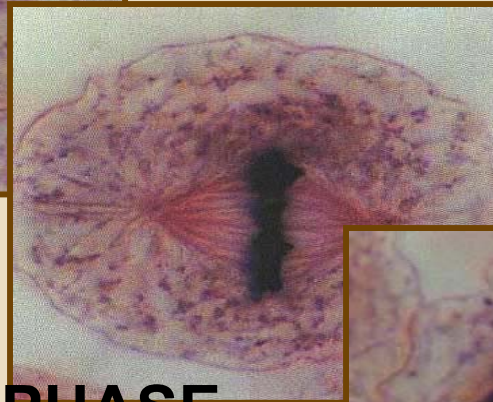
# ANIMAL CELL DIVISION



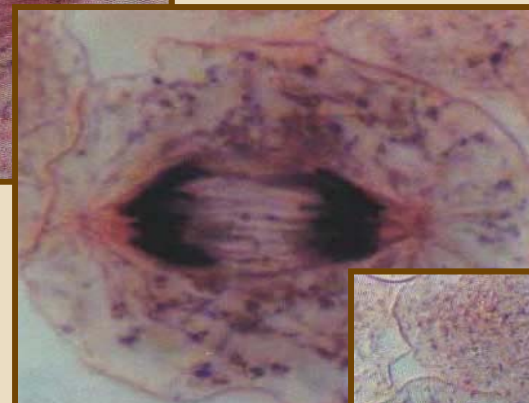
**INTERPHASE**



**PROPHASE**



**METAPHASE**



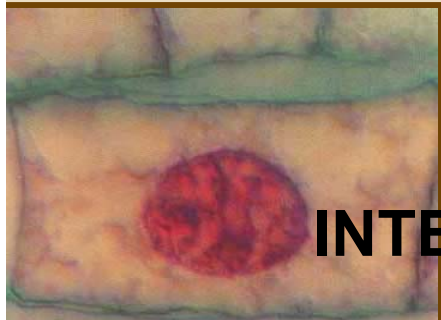
**ANAPHASE**

*Animal cells separate by pinching membrane in → CYTOKINESIS*

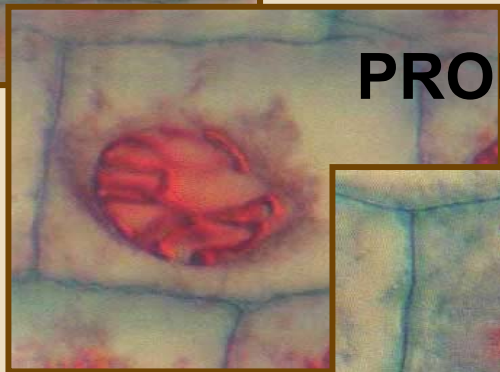


**TELOPHASE**

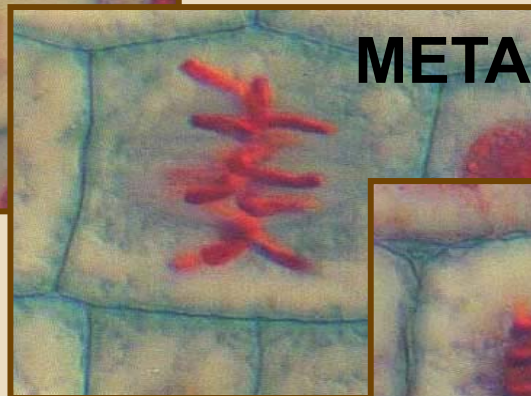
# PLANT CELL DIVISION



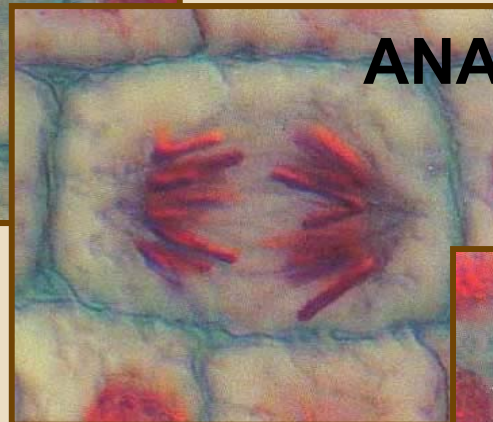
**INTERPHASE**



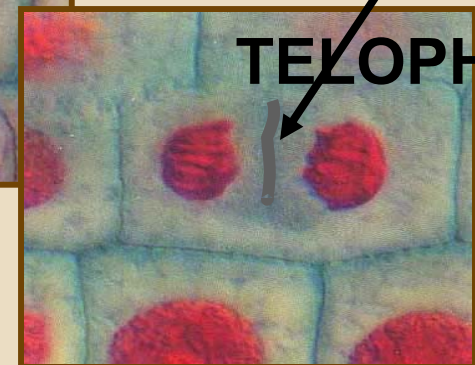
**PROPHASE**



**METAPHASE**



**ANAPHASE**



**TELOPHASE**

*Plants cells are separated by a cell plate*