

Mitosis Discovery – An iPad Activity

So far, we have discussed the cell cycle and mitosis's role in the cell cycle. We know that mitosis is how a cell reproduces, and we have an idea of the order in which mitosis happens. Now, we must look further into the stages, or steps, of mitosis to understanding what is happening on a cellular level.

Procedure

- 1) Turn the volume down to zero (unless you have headphones you can use).
- 2) Open the Mitosis application on your iPad.
- 3) Click "Explore".
- 4) Read through the text boxes.
- 5) Click "Start exploring".
- 6) You should see a page providing you with information about Interphase. Read through the text, then fill in the following answers.

*** The information written in this lab is NOT word for word from the application. In many cases you will need to read through the material first before you'll be able to correctly fill in the blanks.*

***NOT all of the answers will be provide in the application; however, you should be able to answer them based on your previous lesson.*

Interphase:

The stages of interphase are: G1, _____, and _____

Important steps occur in interphase including _____ duplication (which occurs in the S phase) and _____ (the parts of a centriole) duplication.

At the beginning of mitosis, the _____ begin to move _____ from each other toward opposite _____ of the cell.

Prophase

The cell's chromosomes are made of _____, which condenses and forms the X-shaped structures you've seen in diagrams and pictures before.

The nuclear membrane begins to _____. (This is what happens when you double tap the nucleus)

Give a possible explanation why the nuclear membrane needs to dissolve. (This answer is not given in the app. You have to think of it on your own)

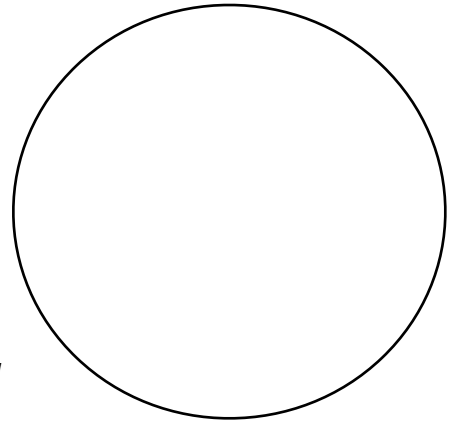
Prometaphase

At the end of prometaphase, the cell's chromosomes are attached to the microtubules and are being pulled toward the _____ of the cell.

Human cells have _____ pairs of chromosomes.

Draw what the cell looks like at the END of Prophase.

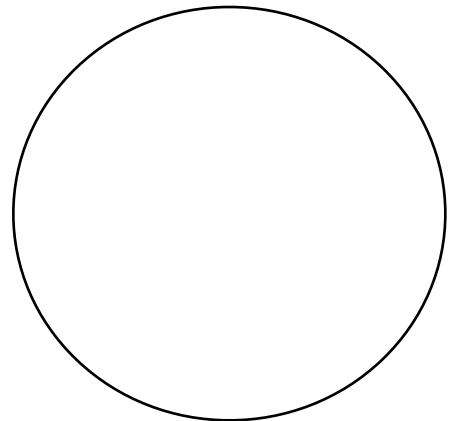
**In this class, we do not distinguish between prophase and prometaphase.*



Metaphase

The chromosomes are aligned along the _____ of the cell. This region is called the metaphase _____.

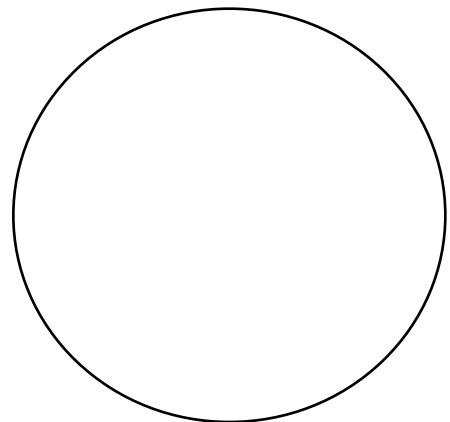
Draw what the cell looks like at the END of metaphase.



Anaphase

Identical chromosomes _____ in two as they move away from the metaphase plate towards _____ sides of the cell.

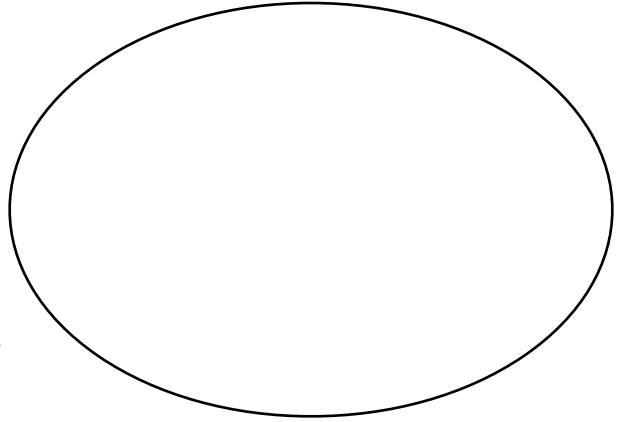
Draw what the cell looks like at the END of anaphase.



Telophase

New _____
_____ form around each
complete set of _____. The
chromosomes _____ (uncoil).

Draw what the cell looks like at the END of telophase.



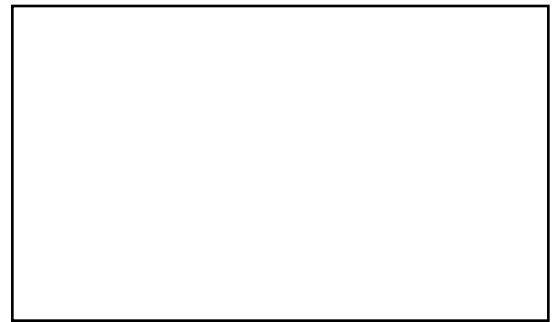
Cytokinesis

Cytokinesis is not part of mitosis.

The cell begins to pinch down, separating the cell
in _____.

The result is _____ identical cells, called daughter
cells.

***In the box to the right, draw what the cell looks
like at the end of cytokinesis.***



Self-Quiz

- 1) Click the "Home" button.
- 2) Click on "Test Yourself" to take a self quiz.
- 3) What was your score: _____
- 4) Call Ms. Kropac over to verify your score. Ms Kropac's signature: _____