Your life began as a single cell, the fertilized egg (zygote). Nine months later, when you were born, approximately 100 trillion made your body

1 Cell

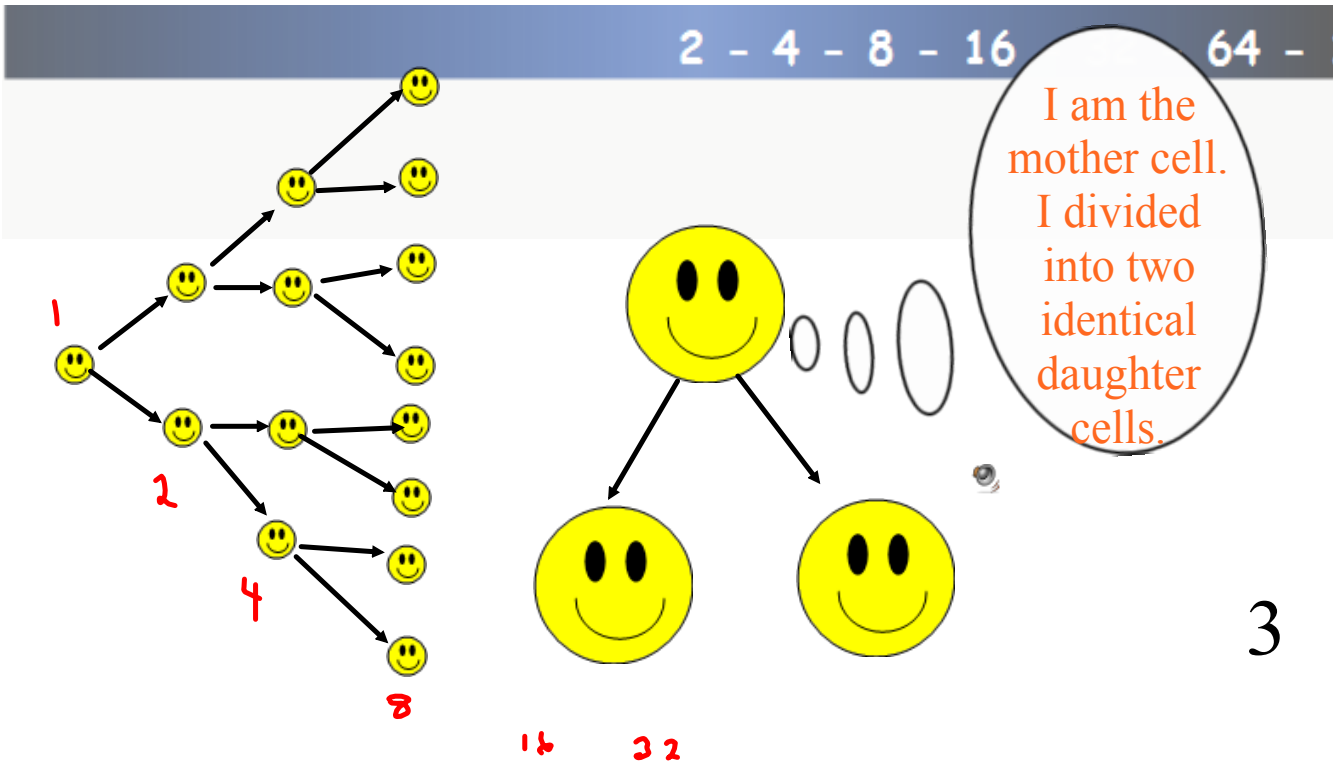
?

Todays Investigation

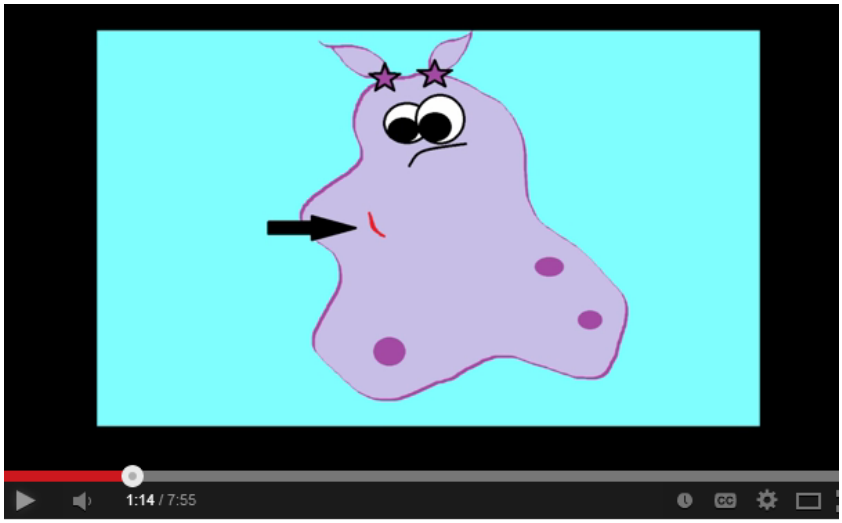
How did one cell become 100 trillion cells?

Cell Division

All cells come from preexisting cells through cell division.
Cells divide into two, then each into another two cells.



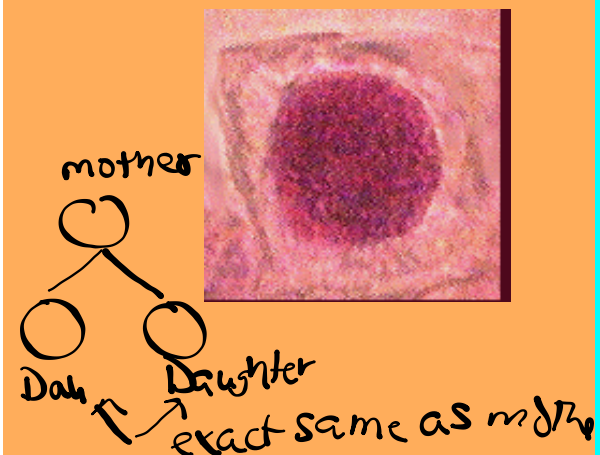
http://www.youtube.com/watch?v=gwcwSZIfKIM



Mitosis: The Amazing Cell Process that Uses Division to Multiply!

http://www.youtube.com/watch?v=JaZOkmoovPk

Before we investigate all the details, let's look at what it all looks like first.



Mitosis

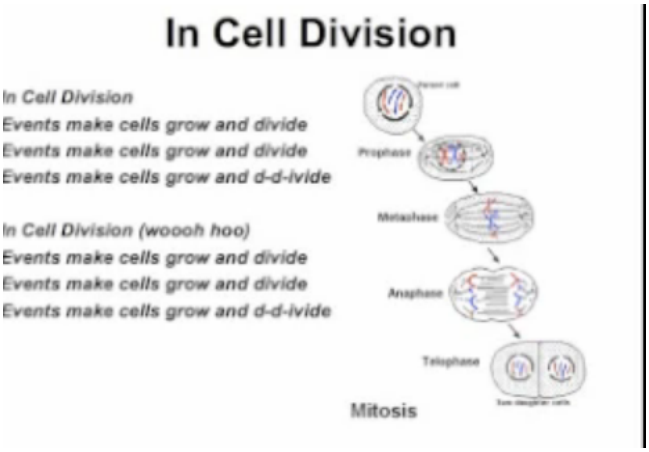
Cell Division

Now that we have a sense of what is involved in Mitosis, let's look at it in more detail.

Mitosis

Cell Division
(two daughter cells
must receive the same
genetic information
as the parent cell)

http://www.youtube.com/watch?v=IlV9hExXZnM



Song

http://www.youtube.com/watch?v=ZEwddr9ho-4

Mitosis is the process of dividing nuclear material.

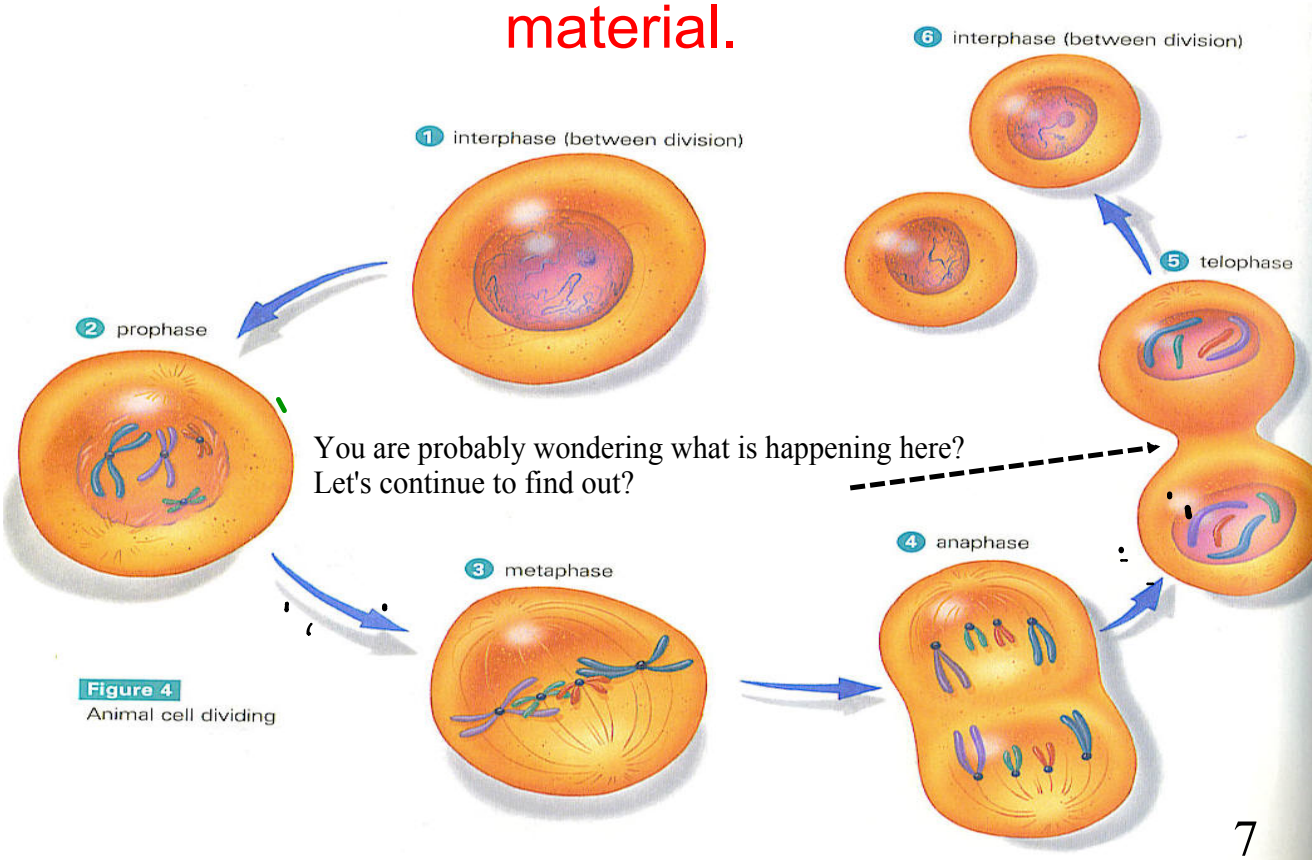


Figure 4
Animal cell dividing

7

http://www.google.com/imgres?imgurl=http://www.phschool.com/science/biology_place/labbench/lab3/images/stages1.gif&imgrefurl=http://www.phschool.com/science/biology_place/labbench/lab3/design1.html&h=637&w=337&sz=21&tbnid=sjoXBxYIWUDrdM::&tbnh=137&tbnw=72&prev=/images%3Fq%3Dmitosis%2Bstages&usg=__nhSg0TrzWz7k5NiM3XL5E9DGDg8=&ei=ZBbQSeO-C-frlQePw9TfCQ&sa=X&oi=image_result&resnum=5&ct=image&cd=1

Mitosis

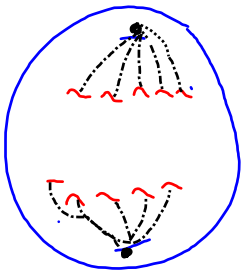
46 Interphase
grows and duplicating its genetic material

46

Prophase
Chromosomes become shorter and thicker. Centroles move to opposite

Metaphase
The double stranded chromosomes line up in the middle

46



Anaphase

The chromosomes are split in two and move AWAY from each other

46

46

Telophase
Nuclear membrane begins to form around each .Cytoplasm begins to separates into two equal parts.

46

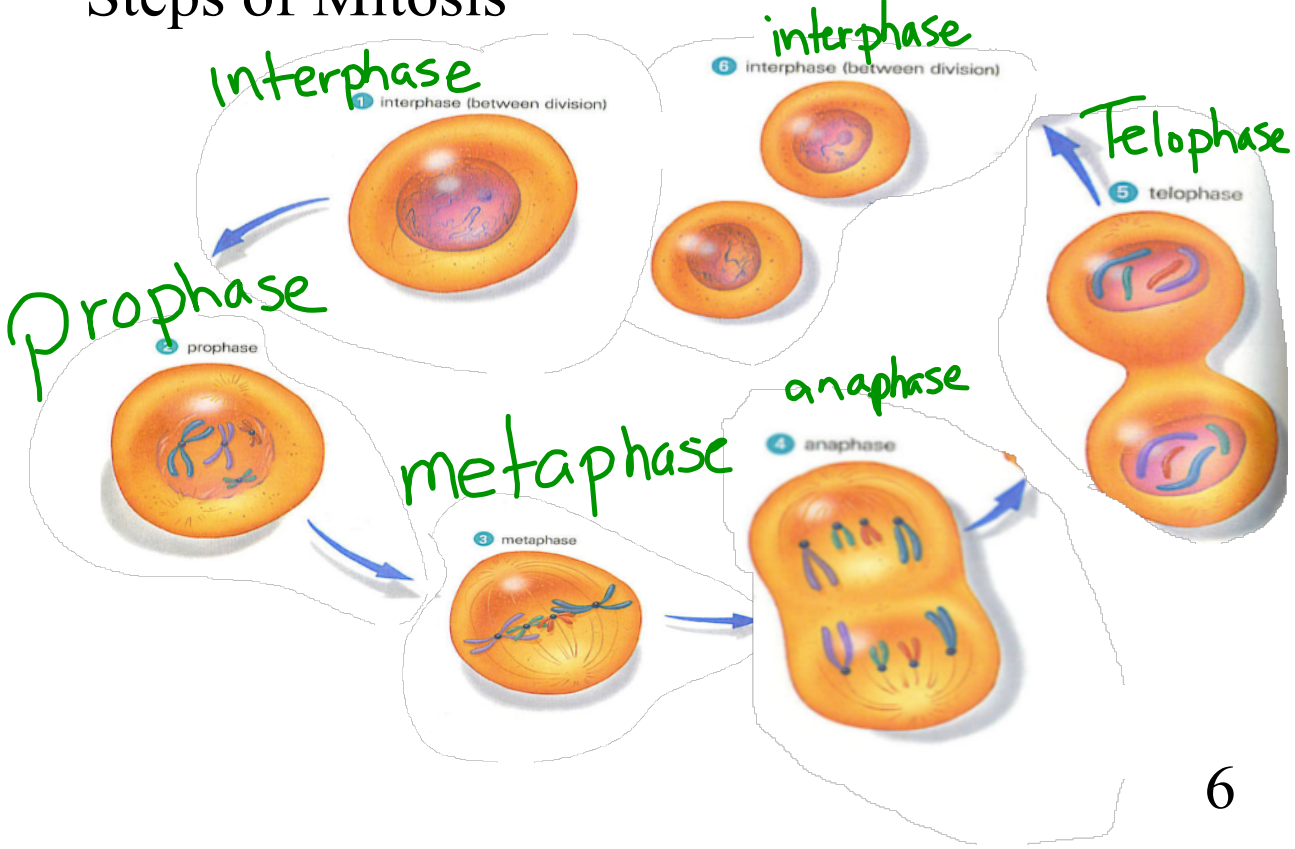
46

46

Cytokinesis-
Cytoplasm splits and 2 new daughter forms

46

Steps of Mitosis



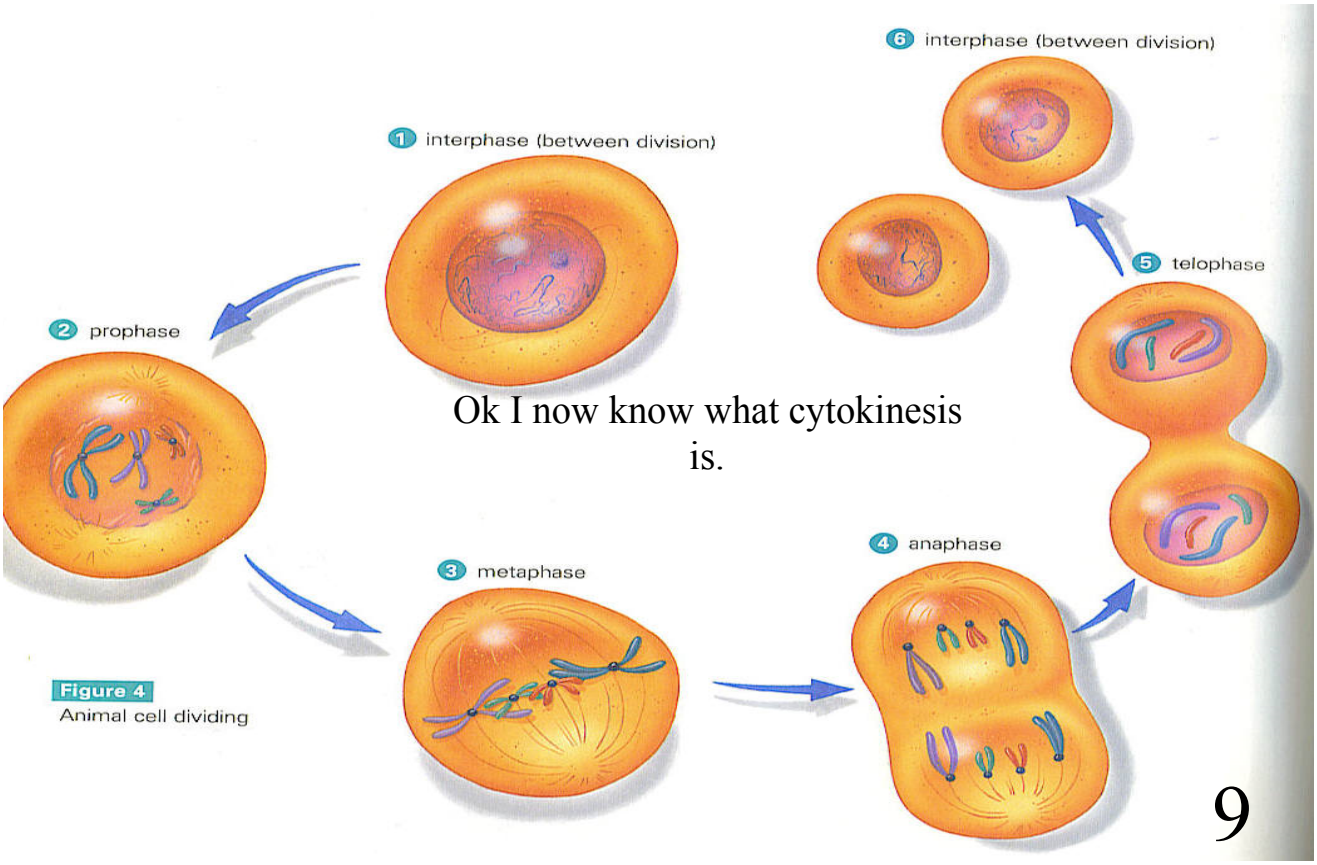
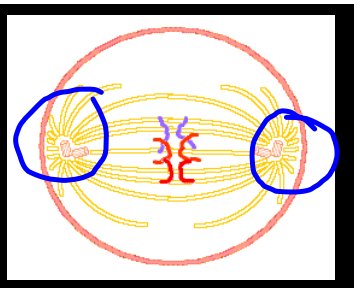
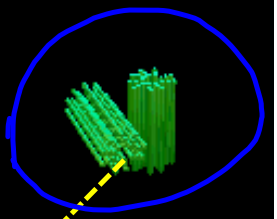


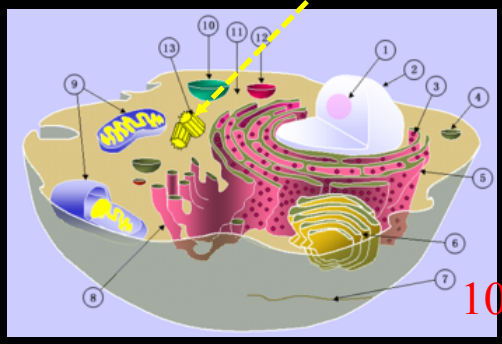
Figure 4
Animal cell dividing

Ok I now know what cytokinesis is.

The centrioles move to the opposite sides of the cell. Spindle fibers attach from the centrioles to the chromosome. The centrioles reel in the chromosomes like a fisherman reels in a fish.

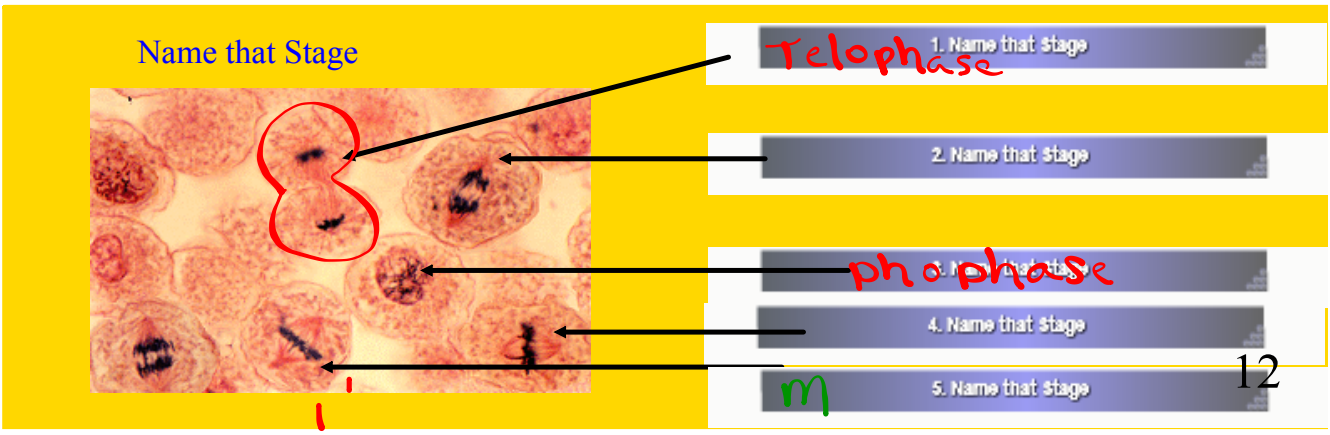


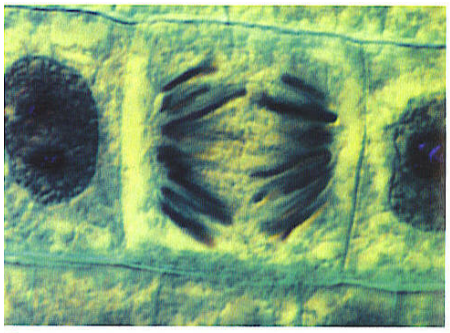




OK. I think we got it. Let's put it all together.
Ladies and Gentleman, I present, Mitosis.

11


Name that Stage
1. Name that stage
2. Name that stage
4. Name that stage
5. Name that stage
Telophase
Prophase
M
I
12



(a) A plant cell dividing

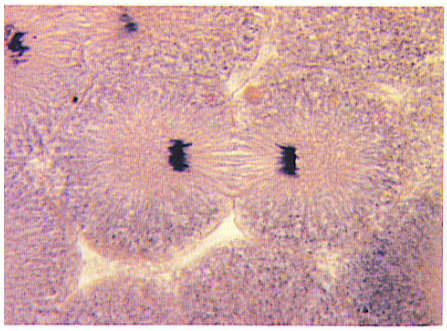


Figure 2
Onion cells in mitosis