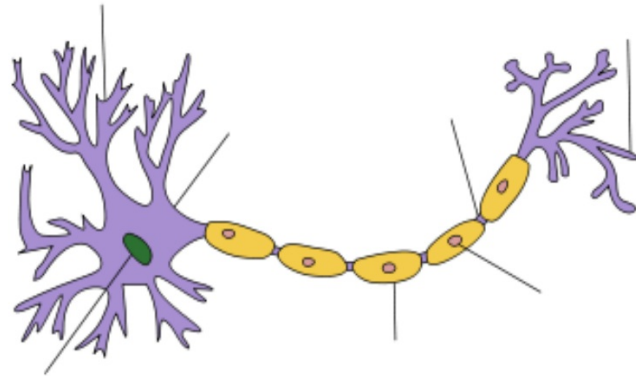
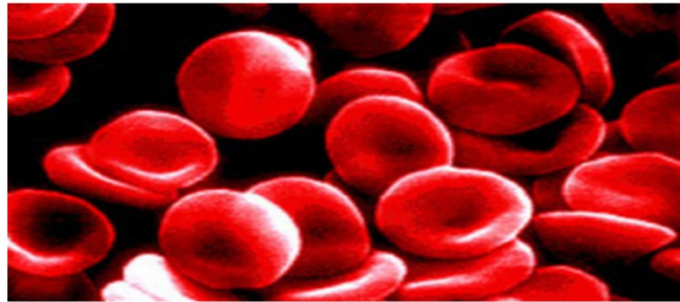
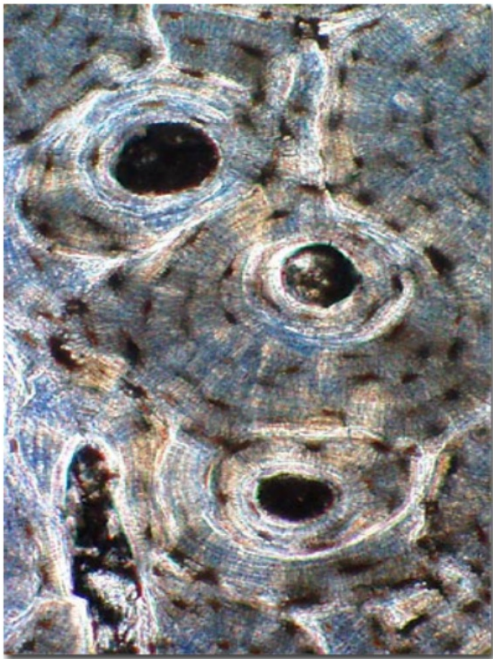


### Goal 3.1.3 - Gene Regulation

All (with a few exceptions) of an organism's cells have the same DNA but they are different based on the expression of genes.

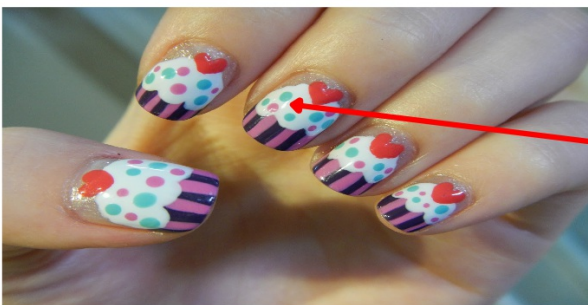
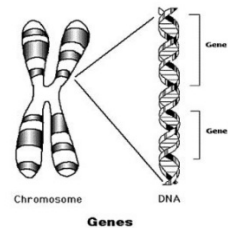


Multicellular organisms, like us, have many different types of cells. They are all different because different parts of the DNA (genes) are expressed in different cells.

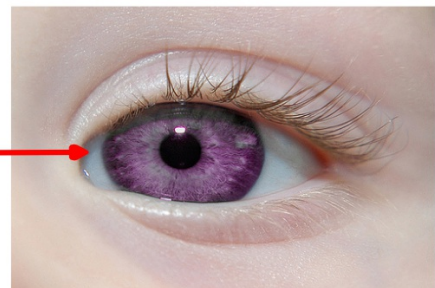
Ex: in hair cells - the hair genes are turned ON but the skin, eye, and fingernail genes are turned OFF



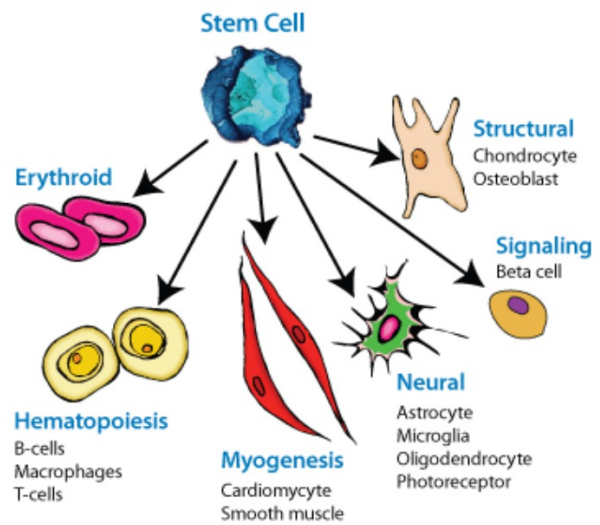
ON



OFF

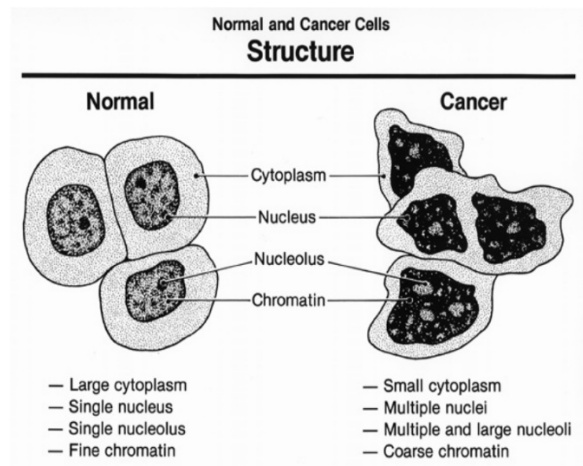
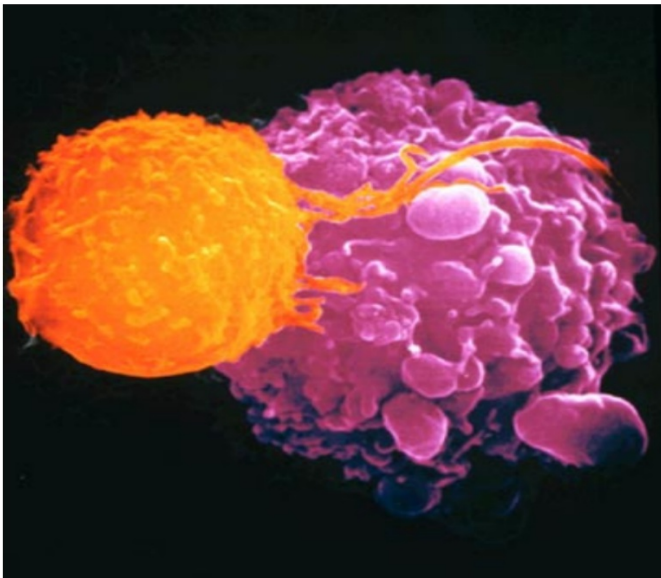


Cells respond to their environment by producing different types and amounts of protein.



Ex: Your skin produces more pigment (color). When you are out in the sun, your skin gets darker.

Production of too many proteins at the incorrect time can cause **CANCEROUS** cells to grow.



<http://www.youtube.com/watch?v=LepTTolebqo>