Visualizing Nucleosomes in JSMol

*Using the prompts below, take notes on the various aspects of the nucleosome revealed by the visualization software.*

* Go to the site: <https://www.mcb.ucdavis.edu/courses/jsmol/Nucleosomejs.htm>
  + Site sometimes won’t open in Chrome. Use Firefox or Explorer.
* In your lab book **describe the function of a nucleosome in your own words.**
* Click and drag the structure from the website to view it at different angles.
* Click on the link- Show Proteins as Cartoons.

*Can you tell* ***how many times the DNA is wound around the histones****? Jot this down.*

*If you need to, click on: Hide Protein.*

* Rotate the nucleosome on its side.

*Jot down a quick sketch of its structure. Label the DNA and histone proteins.*

* Click on: Restore Original View, Hide DNA, Change Protein to Spacefilling, and then Make each Protein a Different Color.

*How many Blue H3 histones do you notice? Make note of how many of histone proteins H2A, H2B, H4 and H3 there are in your sketch.*

* Click on: Restore Original View, then Hide DNA, and then Show Protein as Cartoons.

*Do you notice the tails coming off each histone? More on these later when we get to gene expression!*

* Click on: Restore Original View, then Show Lys and Arg as Spacefill. This highlights the amino acids Lysine and Arginine.

*Where in the nucleosome are the amino acids found: The DNA coils or the histone proteins? Make note of this in your sketch.*

*Lysine and Arginine are both positively charged amino acids.* ***Predict why there are so many copies of this amino acid and what role it could play in the nucleosome function.***