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.***