

2) EXPLAIN/DRAW:

Take a sheet of blank paper, fold in half hamburger to form (2) boxes. Fold in the opposite direction to form (4) total boxes. Explain, illustrate, and label drawings.

FRONT (4 boxes)

- 1) Explain the difference between ionic and covalent bonds.
<https://www.chem.fsu.edu/chemlab/chm1020c/lecture%204/01.php>
- 2) Describe the role of hydrogen bonds in the properties of water.
<https://manoa.hawaii.edu/exploringourfluidearth/chemical/properties-water/hydrogen-bonds-make-water-sticky>
- 3) What is a polar molecule, and why is water considered polar?
<https://www.acs.org/middleschoolchemistry/lessonplans/chapter5/lesson1.html>
- 4) Explain the significance of carbon's ability to form four covalent bonds in the chemistry of life.
[https://bio.libretexts.org/Courses/Lumen_Learning/Biology_for_Non-Majors_1_\(Lumen\)/03%3A_Important_Biological_Macromolecules/3.02%3A_Carbon](https://bio.libretexts.org/Courses/Lumen_Learning/Biology_for_Non-Majors_1_(Lumen)/03%3A_Important_Biological_Macromolecules/3.02%3A_Carbon)

BACK (4 boxes)

- 5) What are the major types of carbon-based macromolecules found in living organisms?
<https://opentextbc.ca/biology/chapter/2-3-biological-molecules/>
- 6) Describe the process of dehydration synthesis and its role in forming macromolecules.
<https://www.news-medical.net/life-sciences/What-is-Dehydration-Synthesis.aspx#:~:text=Dehydration%20synthesis%20is%20the%20creation,as%20carbohydrate%20polymers%20and%20triglycerides.>
- 7) How do enzymes lower the activation energy of a reaction?
[https://bio.libretexts.org/Bookshelves/Introductory_and_General_Biology/Introductory_Biology_\(CK-12\)/01%3A_Introduction_to_Biology/1.18%3A_Enzyme_Function#:~:text=Enzymes%20generally%20lower%20activation%20energy,until%20they%20collide%20at%20random.](https://bio.libretexts.org/Bookshelves/Introductory_and_General_Biology/Introductory_Biology_(CK-12)/01%3A_Introduction_to_Biology/1.18%3A_Enzyme_Function#:~:text=Enzymes%20generally%20lower%20activation%20energy,until%20they%20collide%20at%20random.)
- 8) Explain the process of protein folding and the factors that influence it.
<https://www.news-medical.net/life-sciences/Protein-Folding.aspx#:~:text=Protein%20folding%20is%20a%20very,into%20their%20correct%20functional%20forms.>

The first draft of the Explain/Draw due on Schoology by the end of the class.

The second (completed) draft is due by Sunday evening at 11:59 pm

3) HOMEWORK

- 1) Finish the **Video Notes**.
- 2) Complete the **Explain/Draw**.

Submit your assignment on Schoology as soon as completed.

EXTRA CONTENT

9) How do enzymes achieve such high catalytic efficiency compared to non-biological catalysts?

10) Explain the structural features of alpha helices and beta sheets and their role in protein stability.

11) Discuss the relationship between protein structure and function, providing examples.

12) Discuss the consequences of protein misfolding in the context of human diseases.