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Goal 1.5 Reflection

Integrate Physics and Chemistry Concepts into Biological Contexts

When it comes to Biology, there are many other factors and subject matters intertwined within. Two of the main intertwined subject matters include Physics and Chemistry. Physics is used to understand how the universe behaves, chemistry is the study of matter and its properties and biology is the study of life. Essentially biology, physics, and chemistry make up everything a living organism does or can do, including their physical makeup.

Biology 324 – Within Genetics (Biology 324), we used a process known as gel electrophoresis. Gel electrophoresis is a common experimental technique used in research labs but is a prime example of how physics is intertwined into all of biology. Gel electrophoresis is a laboratory method used to separate mixtures of DNA, RNA, or proteins according to molecular size. In gel electrophoresis, the molecules to be separated are pushed by an electrical field through a gel that contains small pores. This method was used consistently throughout our lab project for Bio 324.

Biology 473 – Within Biomechanics, we performed many different experiments that entailed physics throughout and intertwined within. Our main semester long experiment measured the C-start technique within Zebrafish. To measure this technique, we had to record the fish with a high-speed GoPro camera, and digitize the footage to make a 3D model. Following this analysis, we took the footage and pixelized it, allowing us to measure the velocity and distance the fish traveled while performing their C-start.