***lac* Operon Simulation**



**Function of Each Part**

*(please note the names of each part may be different between the picture above and the simulation)*

* Promoter for regulatory gene/*lacI* gene
* Regulatory gene/*lacI* gene
* Repressor protein/LacI
* Promoter for structural genes
* Operator for structural genes
* *lacZ* gene
* LacZ protein
* *lacY* gene
* LacY protein

**Make Predications Using the Simulation**

1. Some mutations can disable genes. What might happen if there is a mutation to the *lacI* gene? The *lacZ* gene? The *lacY* gene? Use the simulation and remove each gene from the DNA molecule and record what happens.

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**Next Steps…**

Imagine you and your partner are researchers exploring the roles of the genes from the *lac* operon in prokaryotic *E. coli*. Use photos you cull from the Internet and photos you take of the simulation, along with your knowledge you gained from using the simulation, and create a Prezi. The Prezi should be about the role of each part of the *lac* operon and the effects mutations have on different parts of the *lac* operon. You will make your presentation in front of the class.