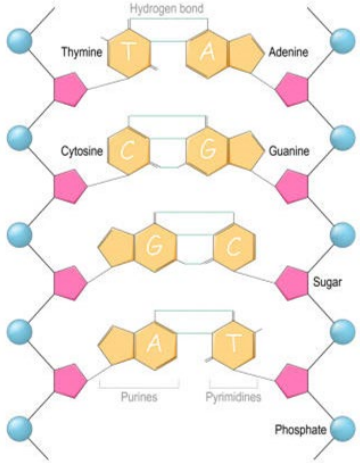
DNA Candy

Rochester City School District School 16
University of Rochester iGEM 2020

What is DNA?

DNA Basics

- Deoxyribonucleic acid
- Tells the cells what to do

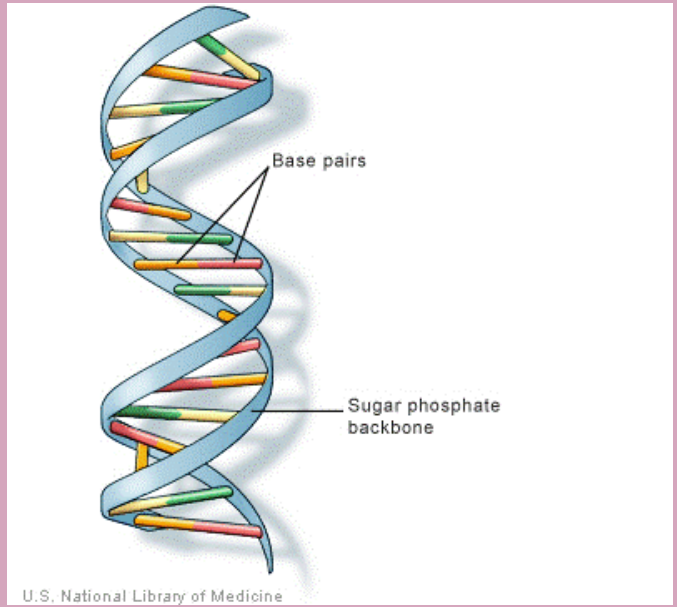


https://www.istockphoto.com/illustrations/nucleotide?mediatype=illustration&phrase=nucleotide&sort=mostpopular

DNA is like a rule book

Nucleotides

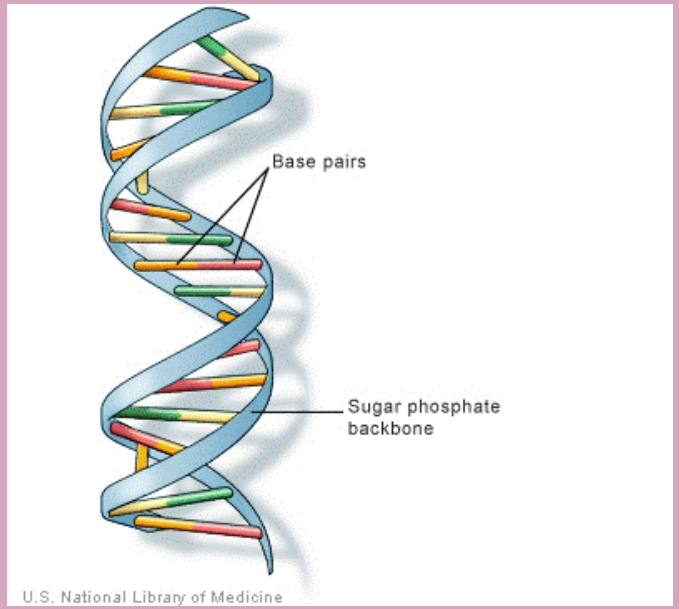
- *Alphabet* of the rule book!



- Function

Nucleotides

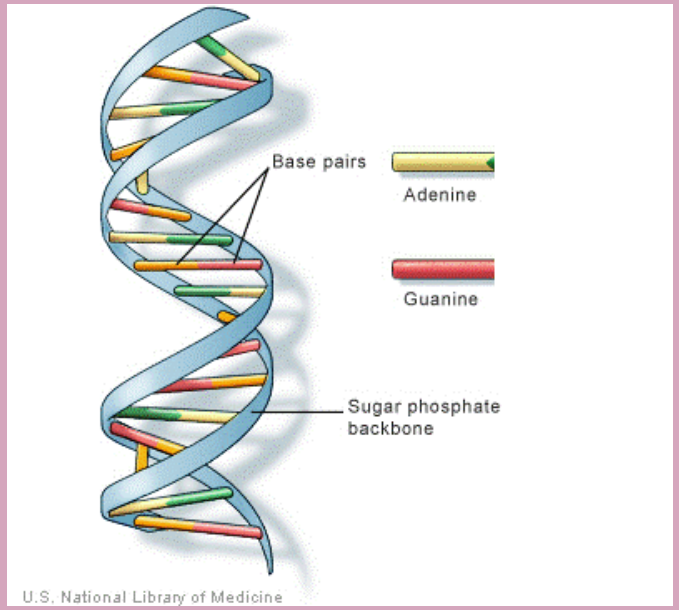
- *Alphabet* of the rule book!
  - A
  - T
  - G
  - C
- Function



Nucleotides

- *Alphabet* of the rule book!
  - A = Adenine
  - T = Thymine
  - G = Guanine
  - C = Cytosine

- Function



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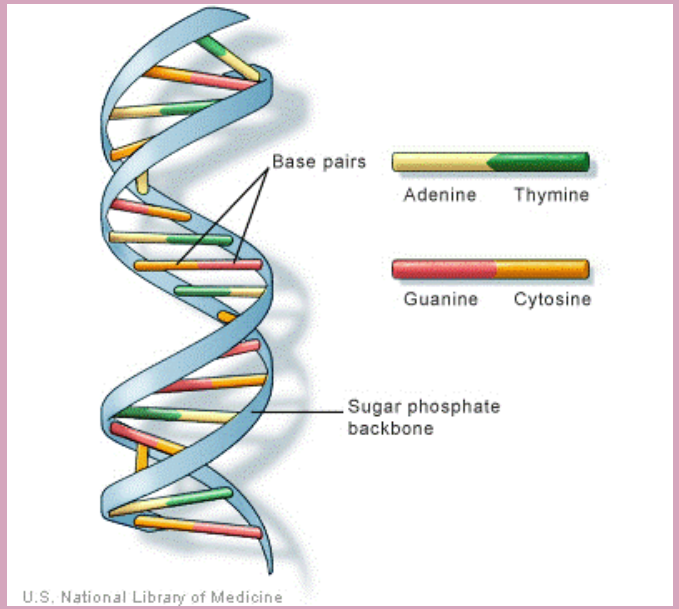

Nucleotides

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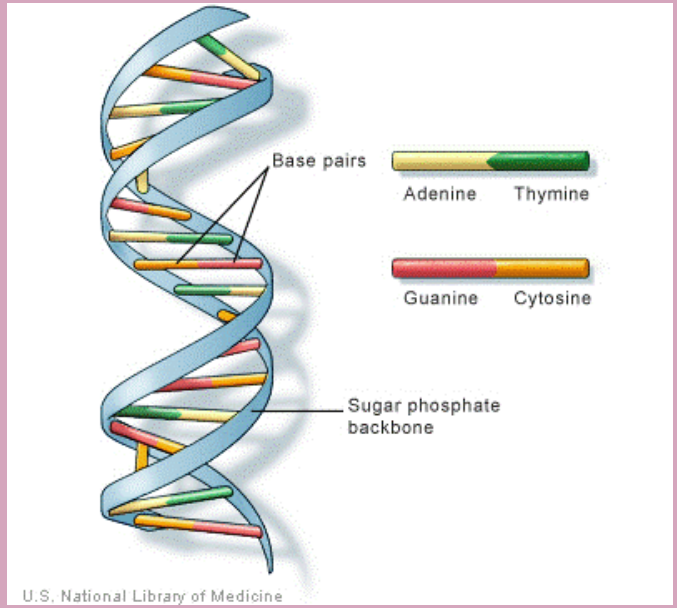
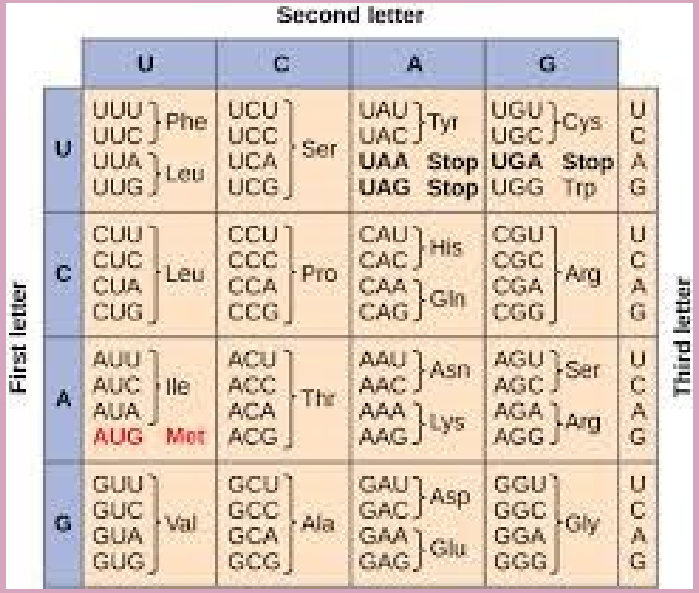
- Function
  - Building blocks of DNA



Codons

- ***Words*** **of the rule book!**
  - Made up of 3*letters*
- **Function**
  - Transcribed to make amino acids (the building blocks of proteins)



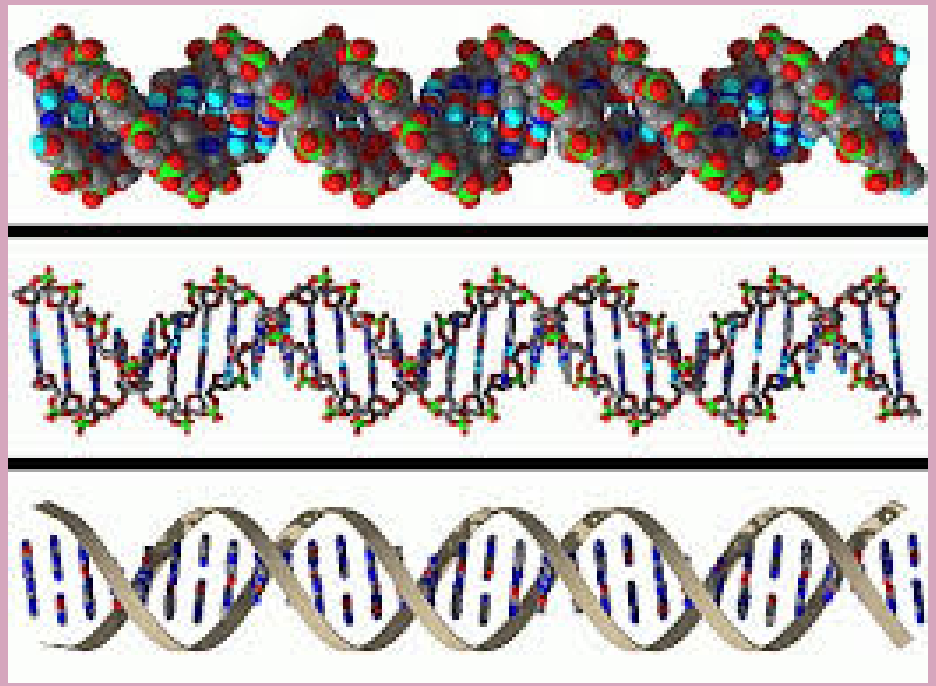
https://s3-us-west-2.amazonaws.com/courses-images/wp-content/uploads/sites/110/2016/05/02185922/Figure_15_01_04.jpg

Gene

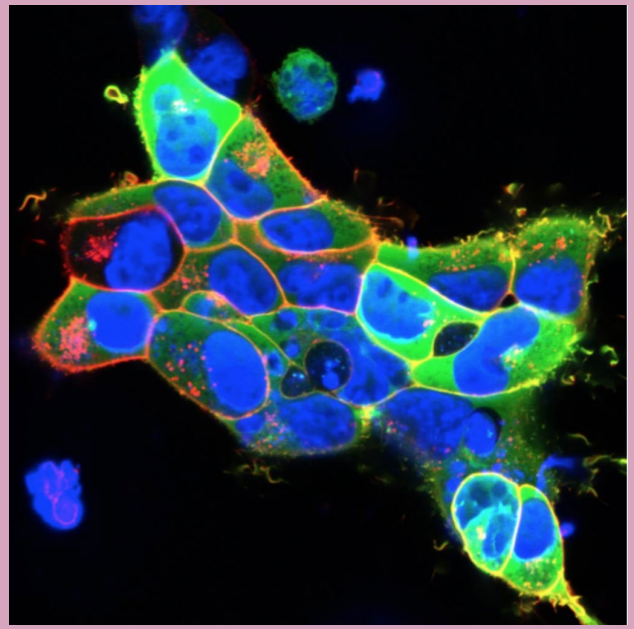
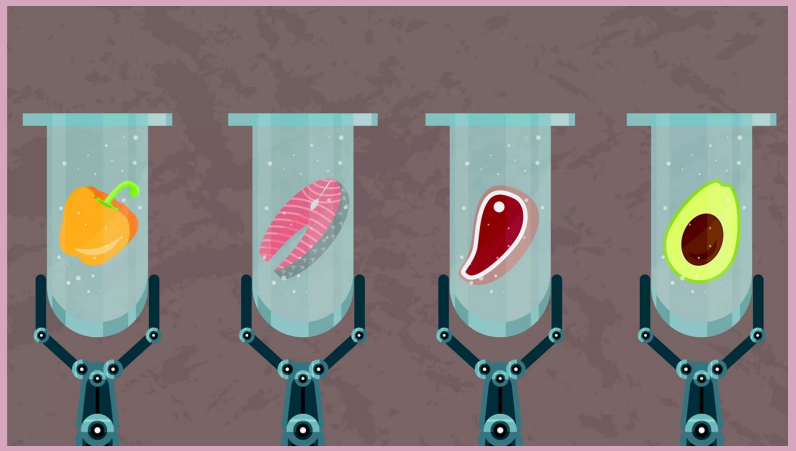
- *Sentence* of the rule book!

- Function
  - Encodes a protein
  - Proteins carry out functions that follow the DNA rule book

Double Helix



https://www.wired.com/wp-content/uploads/archive/news/images/full/dna_models_f.jpg

What if we want to make the rules?

Synthetic Biology!