3d molecular designs
Transforming Science Learning

DNA with a Twist!

Using multiple models to examine DNA

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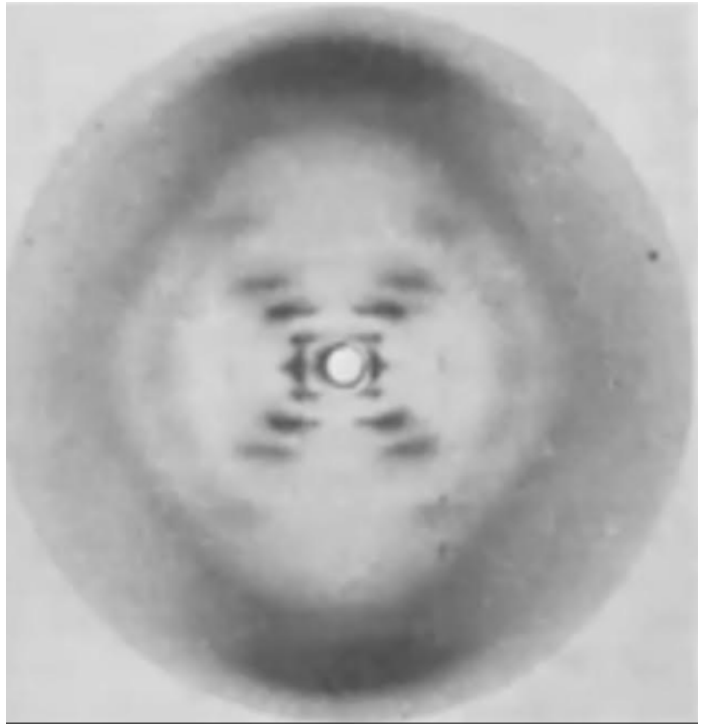
Workshop Learning Goals

1. What makes a good model?
2. What can we learn from various DNA models?
3. What do you find difficult when you are teaching about DNA structure/function?
4. Where do multidimensional models help with this topic?
5. How can you show DNA chemistry, how can we model chemical reactions with this model?

DNA Starter Kit

Dynamic DNA Kit

Photo 51 -Using Data to justify models of DNA.



Materials

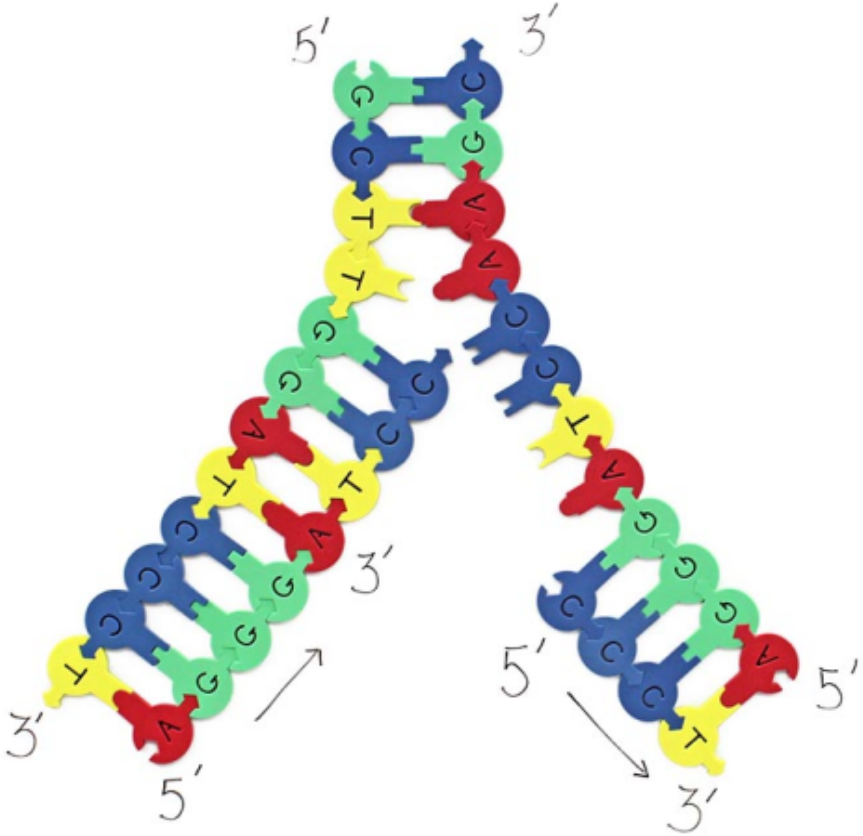
Pauling-triple-helix DNA.pdb
*******dssr.bio.columbia.edu/data/Pauling-triplex-DNA.pdb

Watson-Crick DNA.pdb
**********.rcsb.org/structure/1bna

JUDE or similar molecular viewer
********cbm.msoe.edu/modelingResources/jmolUserDesignEnvironment/#forward

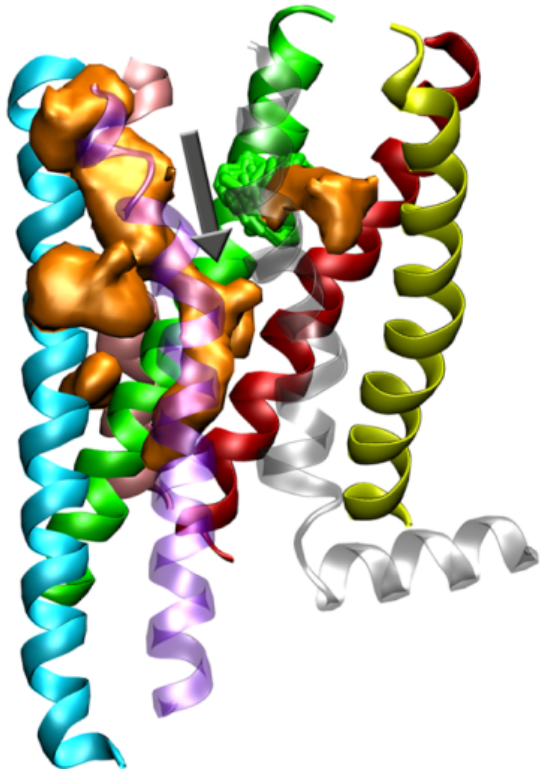
After you have collected your data, we will use Dr. Franklins Data to have a class discussion as to which claim matched the evidence better.

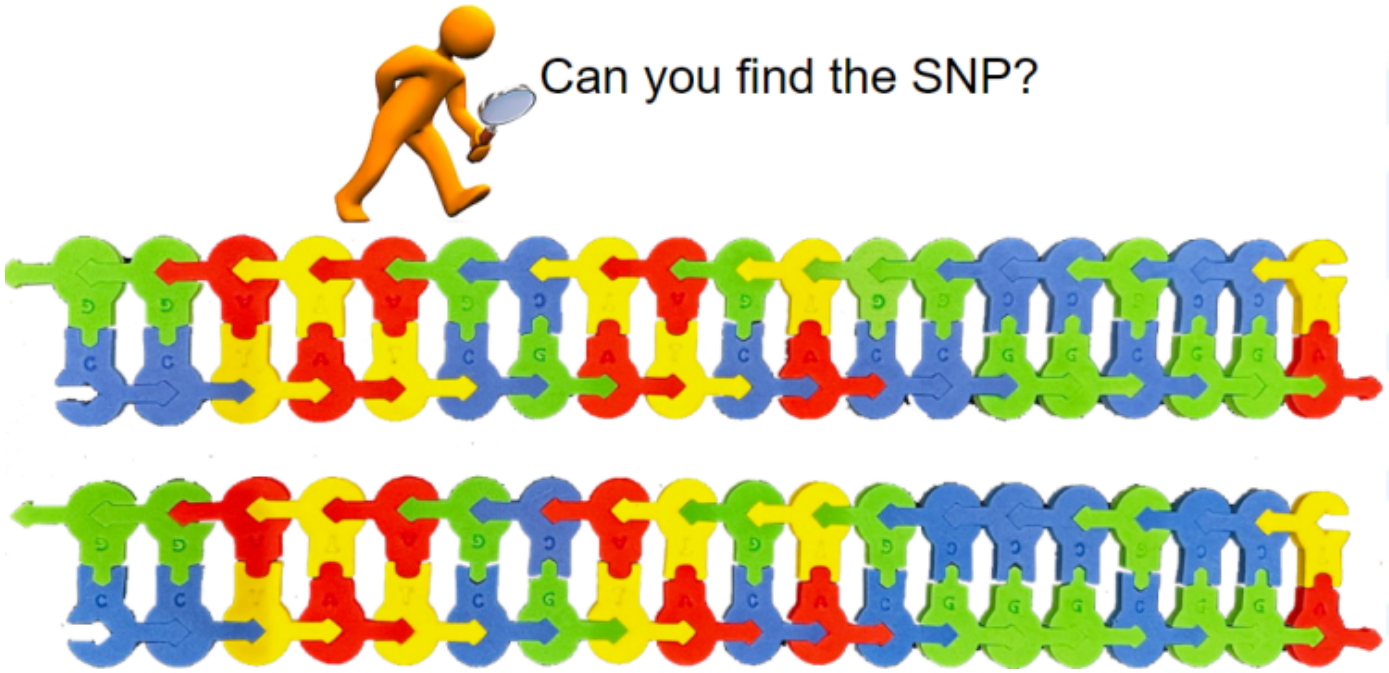
Demo DNA Nucleotides/Replacement Nucleotides (FGIK)



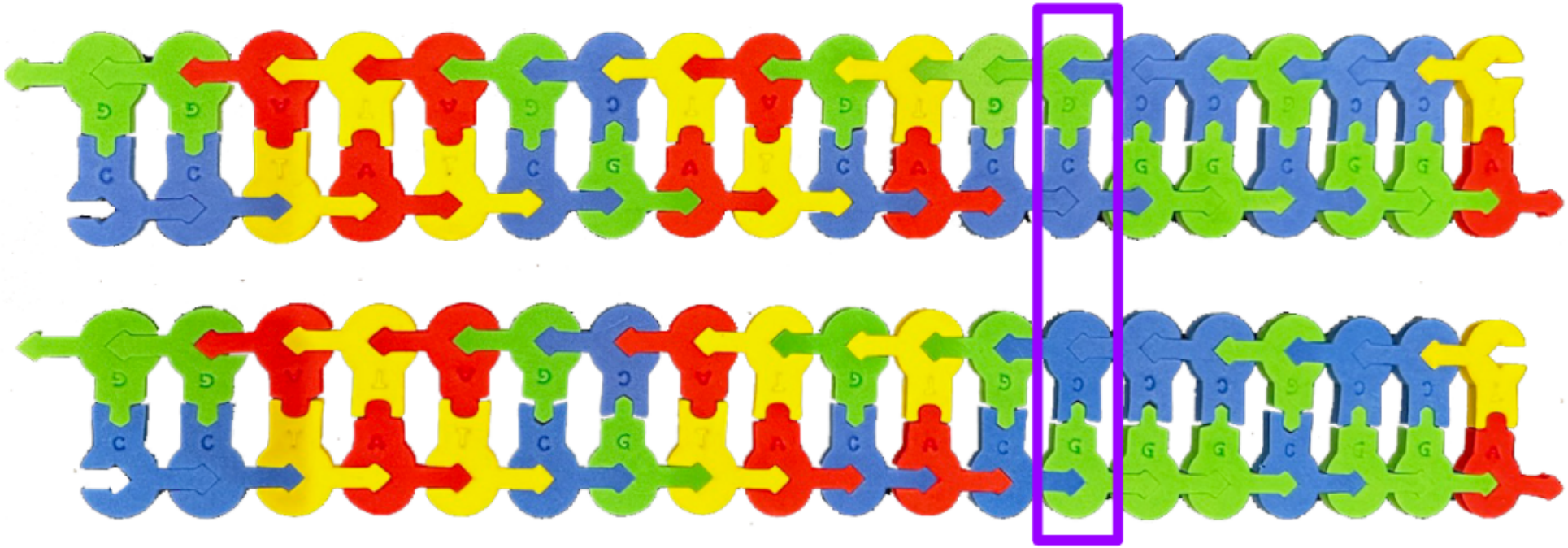
Explore ANY Sequence!

TAS2R38 bitter taste receptor gene/protein





TAS2R38 bitter taste receptor gene/protein



Workshop NGSS Connections (and/or other applicable standards)

SEPs	CCCs	DCIs
Asking Questions and Defining Problems	Patterns	LS1.A: Structure and Function
Developing and Using Models	Cause and Effect: Mechanism and Explanation	
Constructing Explanations and Designing Solutions	Scale, Proportion, and Quantity	
Engaging in Argument from Evidence	Structure and Function	
Analyzing and Interpreting Data	Stability and Change	

Thank you!

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Summer Courses!

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THANK YOU!!

Remember the conference discount code: **FC23**

SURVEY

DNA with a Twist Tomorrow
Canandaigua Room at 3:15

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