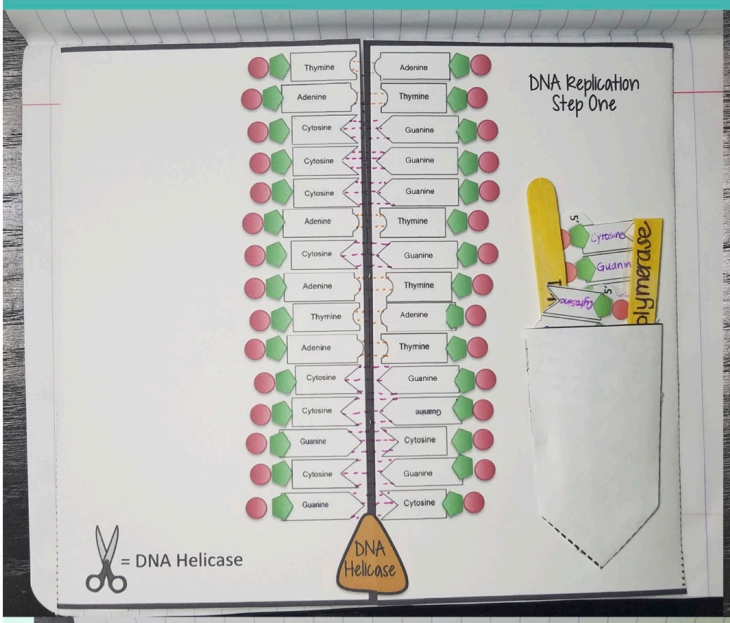
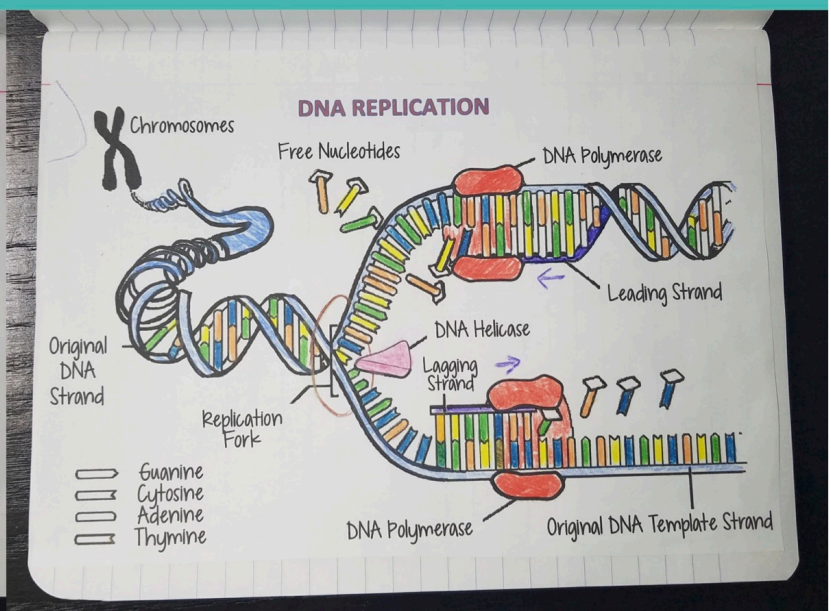
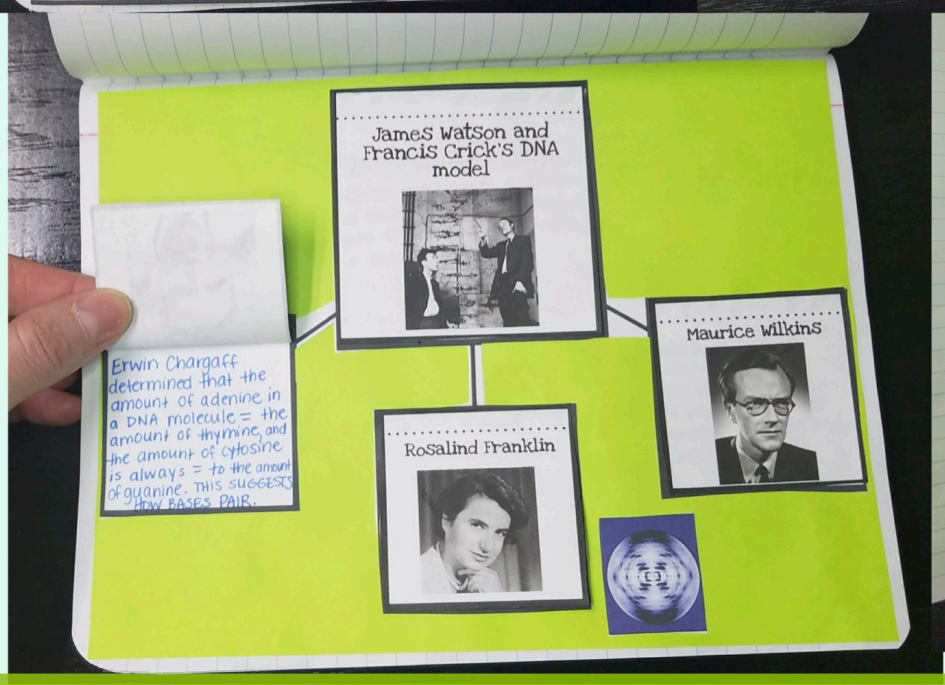
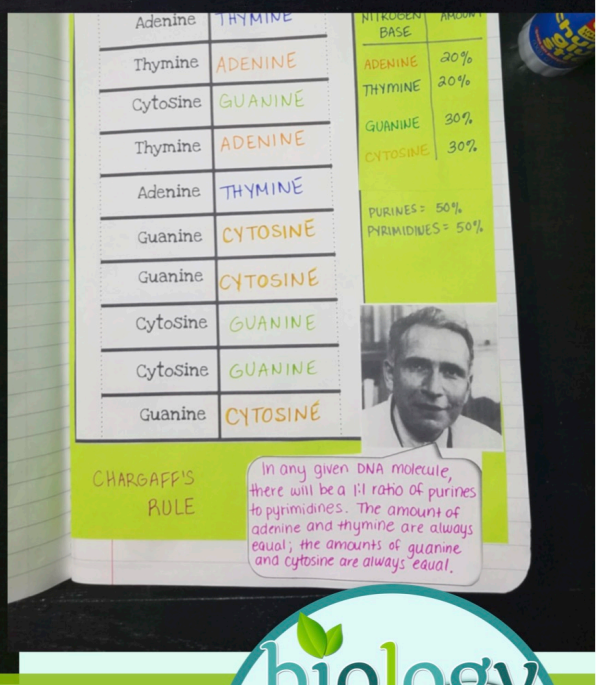
DNA

Interactive Notebook





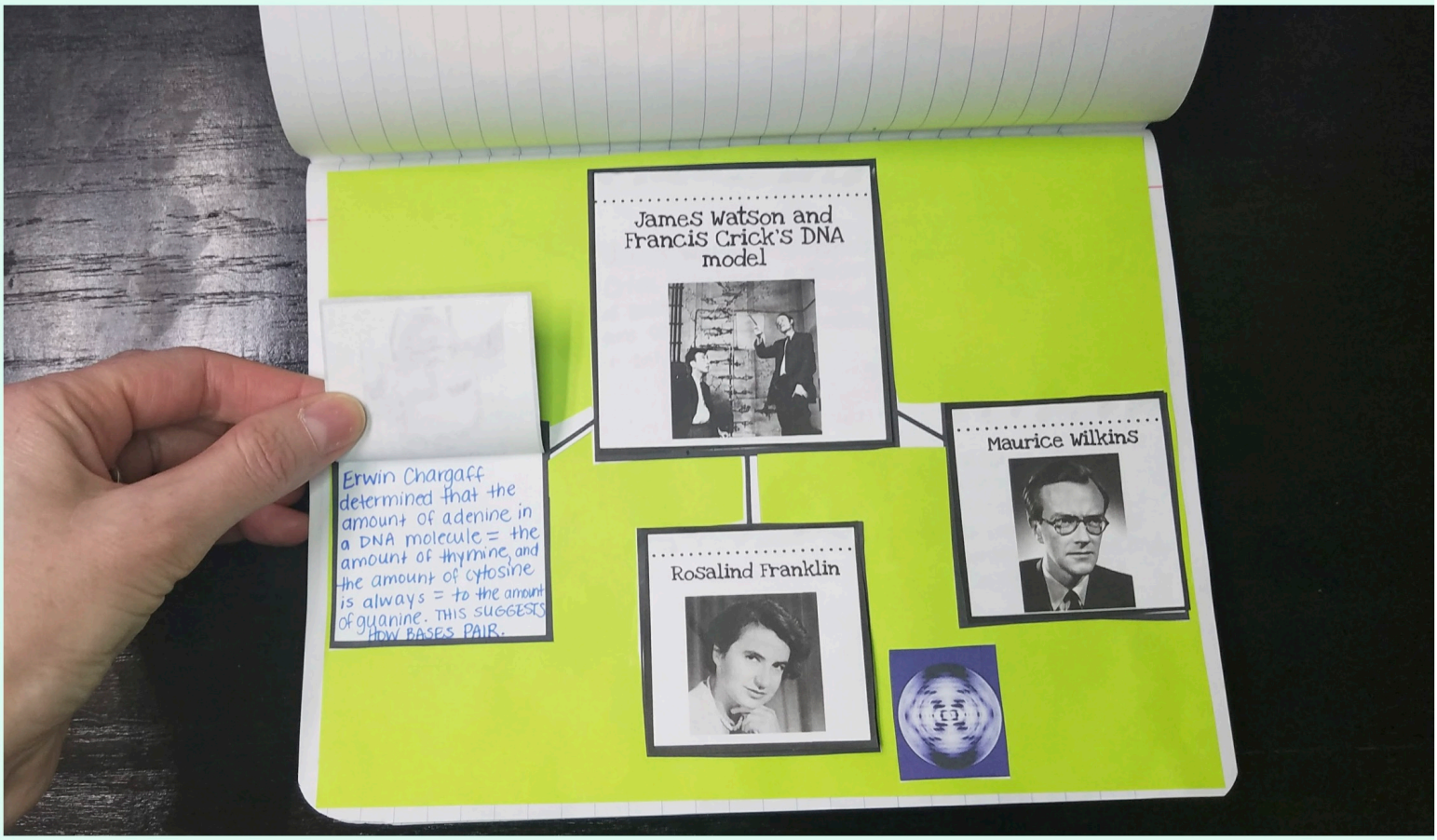


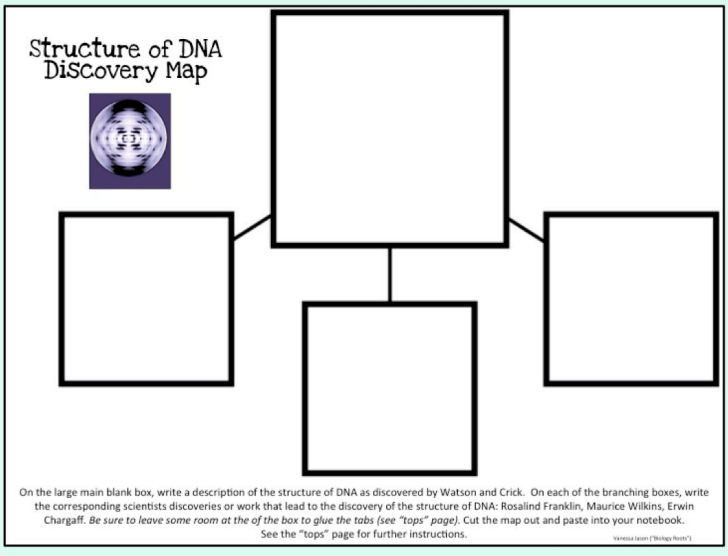


DNA STRUCTURE AND REPLICATION
11 ACTIVITIES TO CHOOSE FROM
GRADES 7-10

biology roots

STRUCTURE OF DNA DISCOVERY MAP

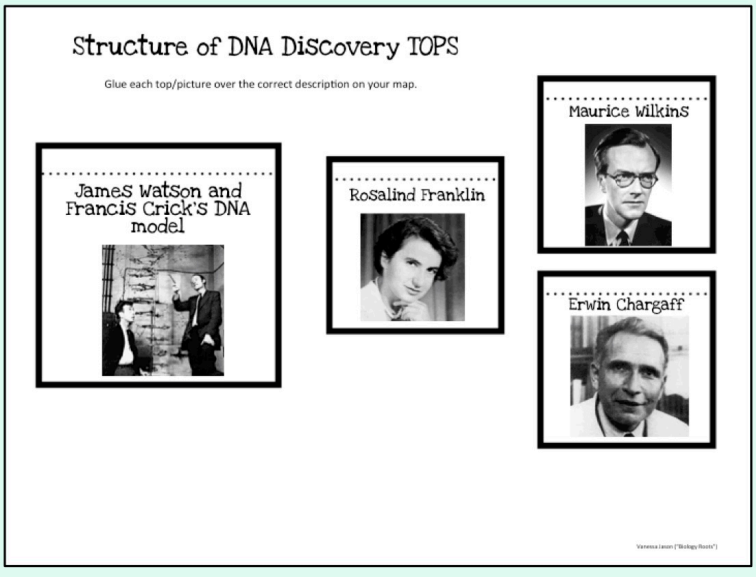




Structure of DNA Discovery Map

On the large main blank box, write a description of the structure of DNA as discovered by Watson and Crick. On each of the branching boxes, write the corresponding scientists discoveries or work that lead to the discovery of the structure of DNA: Rosalind Franklin, Maurice Wilkins, Erwin Chargaff. *Be sure to leave some room at the of the box to glue the tabs (see "tops" page).* Cut the map out and paste into your notebook. See the "tops" page for further instructions.

Vanessa Jason ("Biology Roots")



Structure of DNA Discovery TOPS

Glue each top/picture over the correct description on your map.

James Watson and Francis Crick's DNA model

Rosalind Franklin

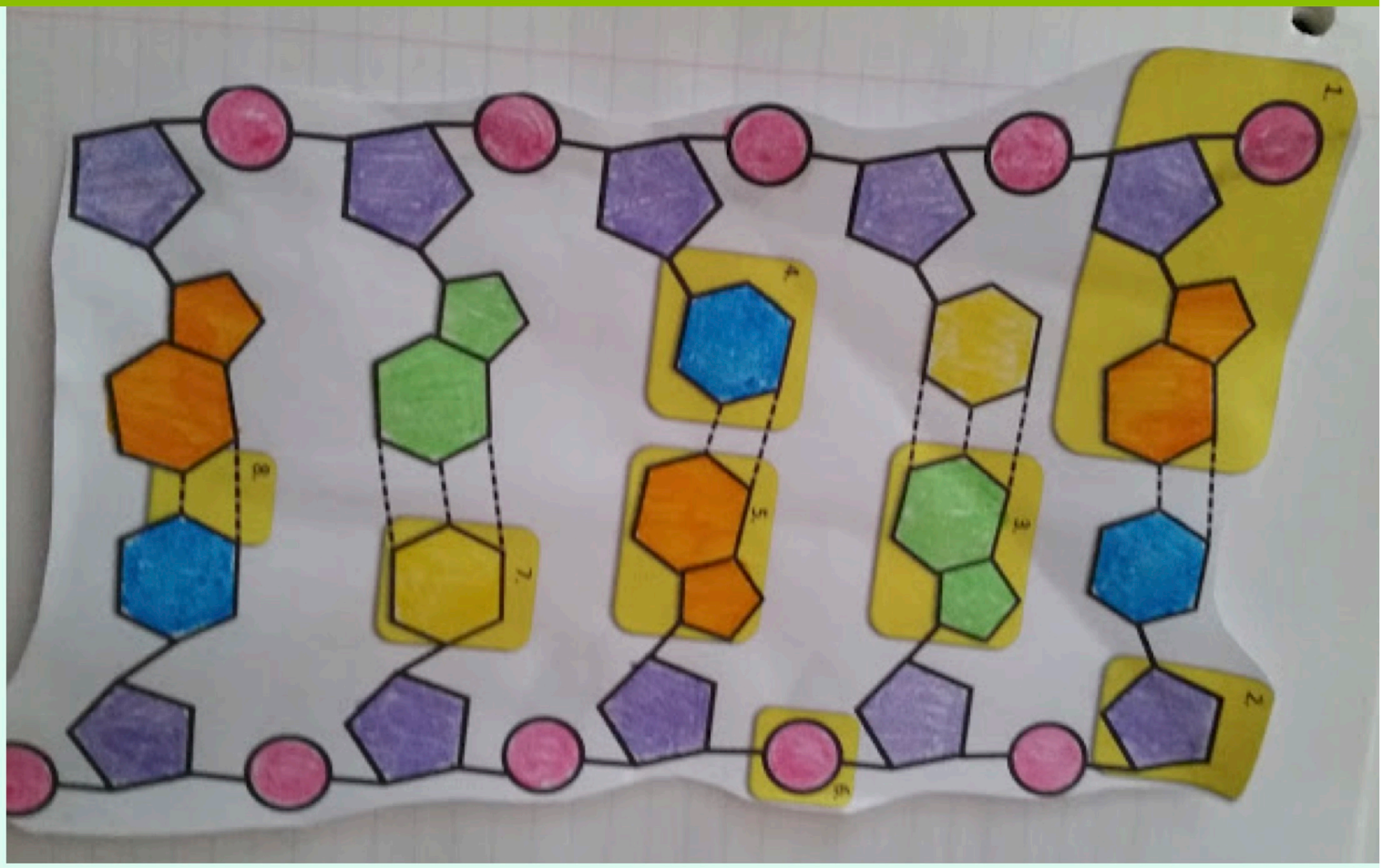
Maurice Wilkins

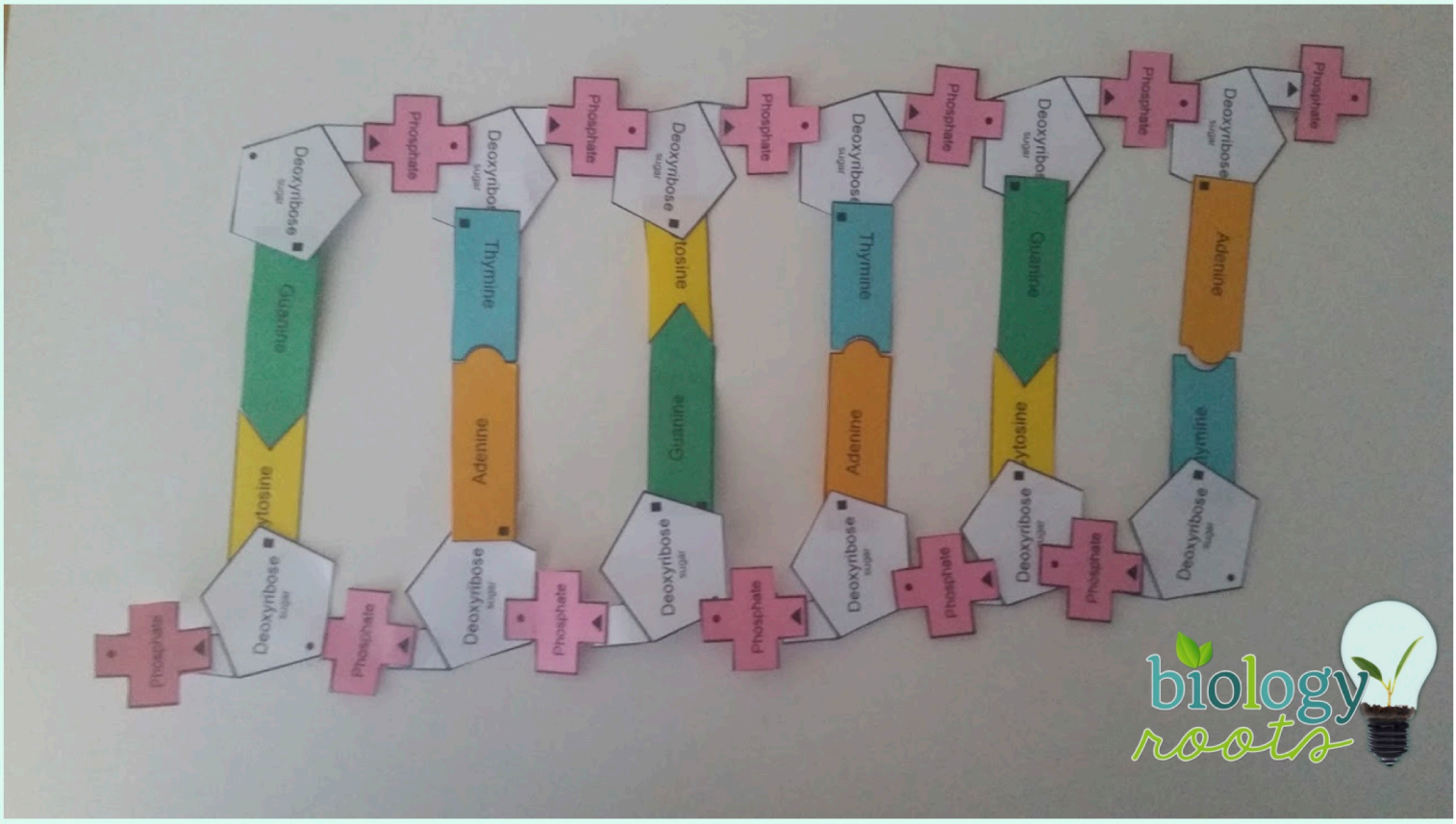
Erwin Chargaff

Vanessa Jason ("Biology Roots")

biology roots

DNA LABELING
DNA MINI MODEL





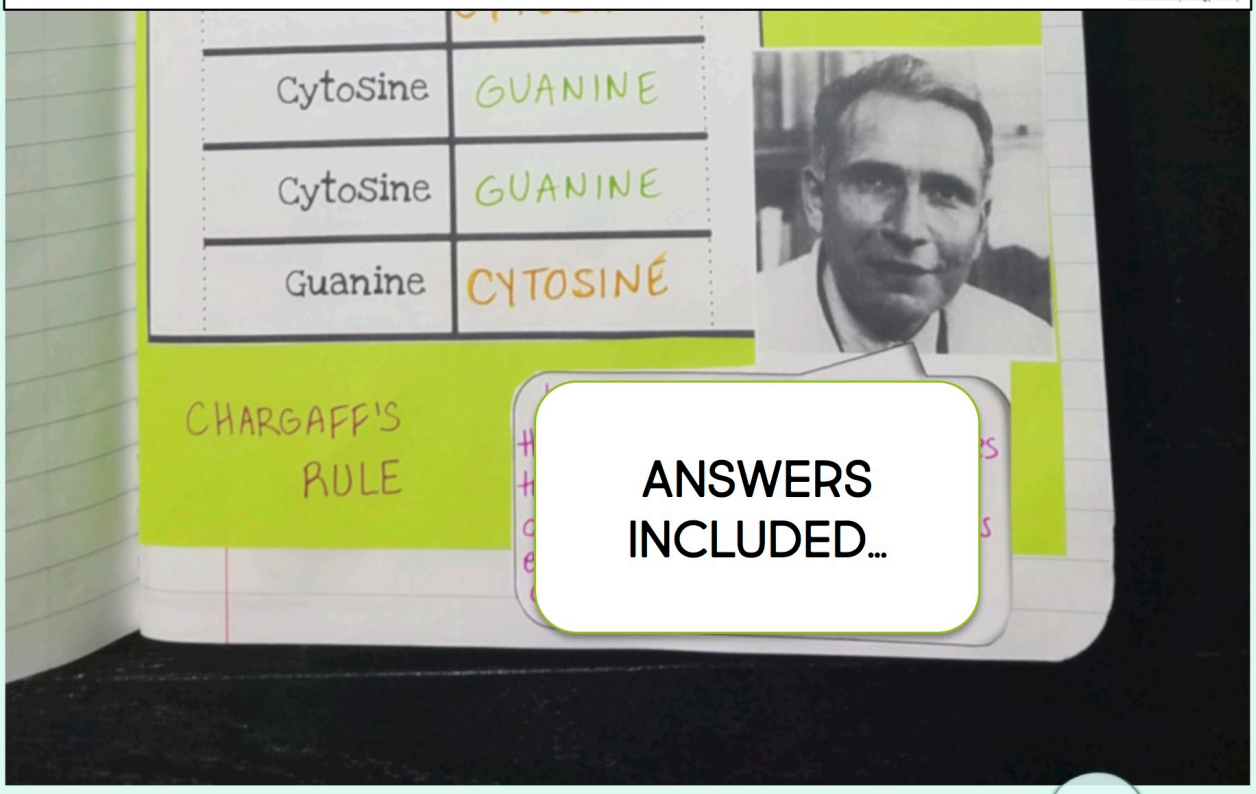
CHARGAFF'S RULE

Adenine	
Thymine	
Cytosine	
Thymine	
Adenine	
Guanine	
Guanine	
Cytosine	
Cytosine	
Guanine	

Base Pairing Rules & Chargaff's Rule Directions:

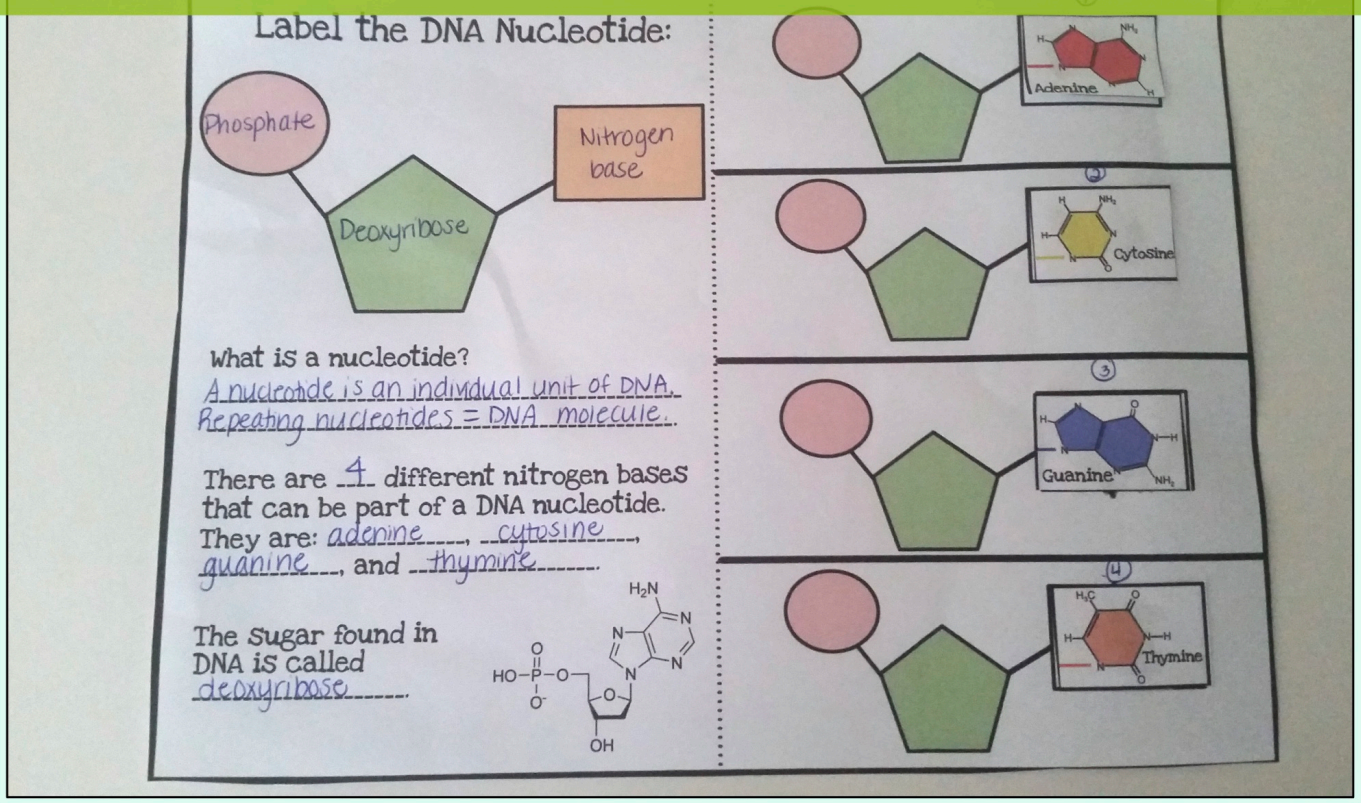
Finish the right side of the nitrogen base pairs by writing in the appropriate nitrogen base to match the left side.
Cut out the double strand of base pairs and glue into your notebook.
Write Chargaff's rule in your notebook (feel free to cut out his picture below to use).
Create a table that depicts the percentage of adenine, thymine, guanine, and cytosine in this model to help enforce Chargaff's rule.

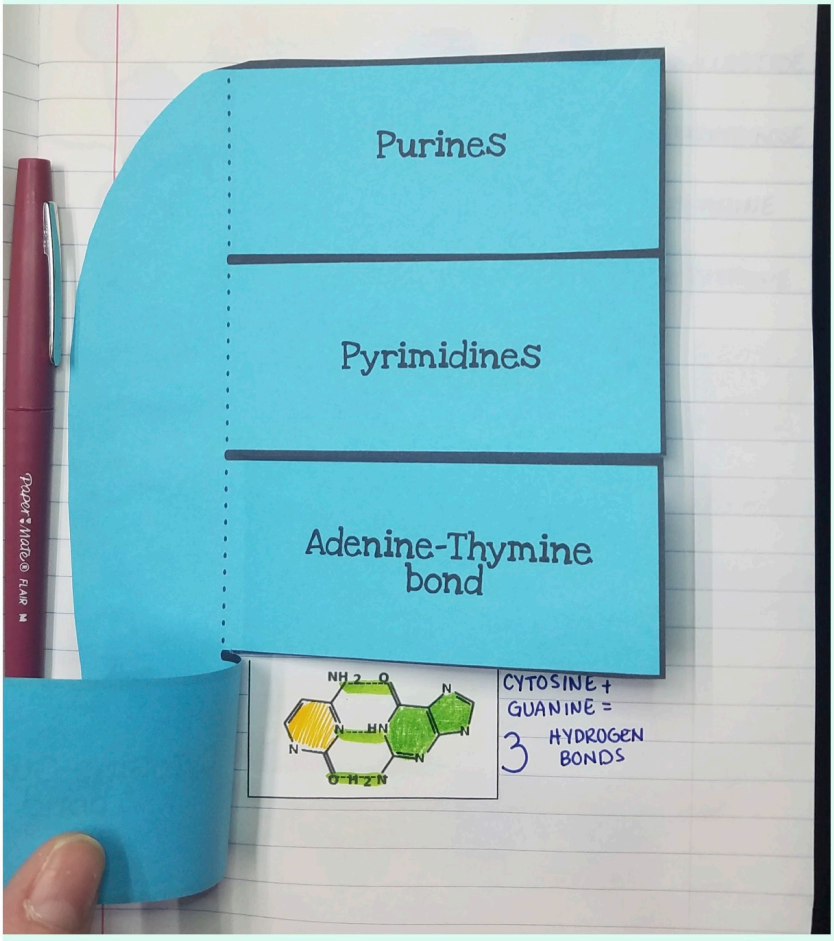


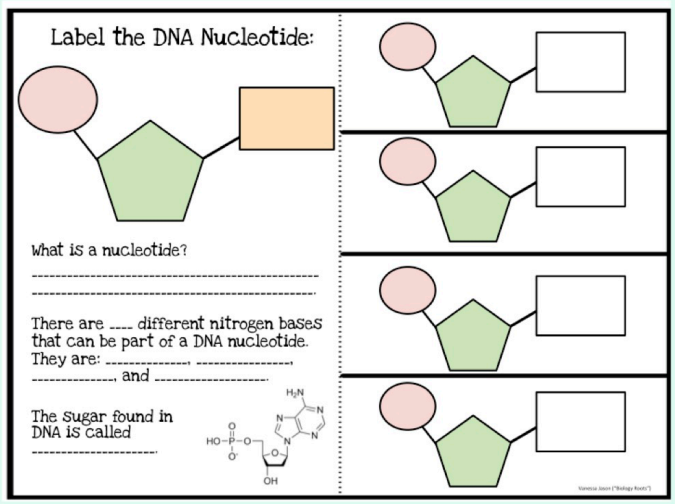


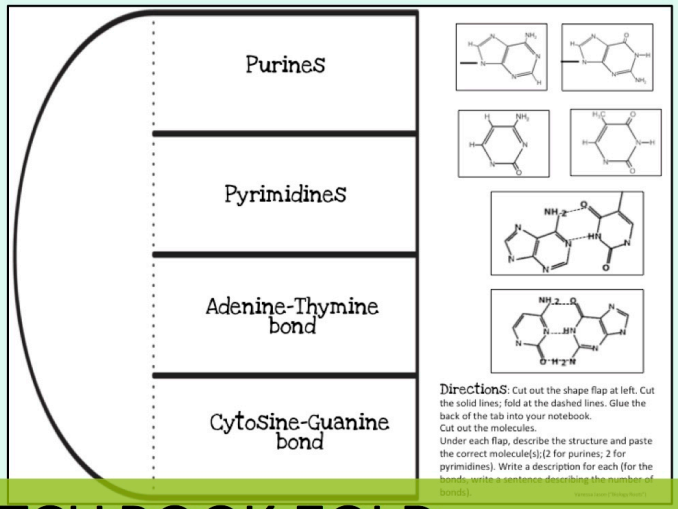
biology roots

NUCLEOTIDE BOOK FOLD

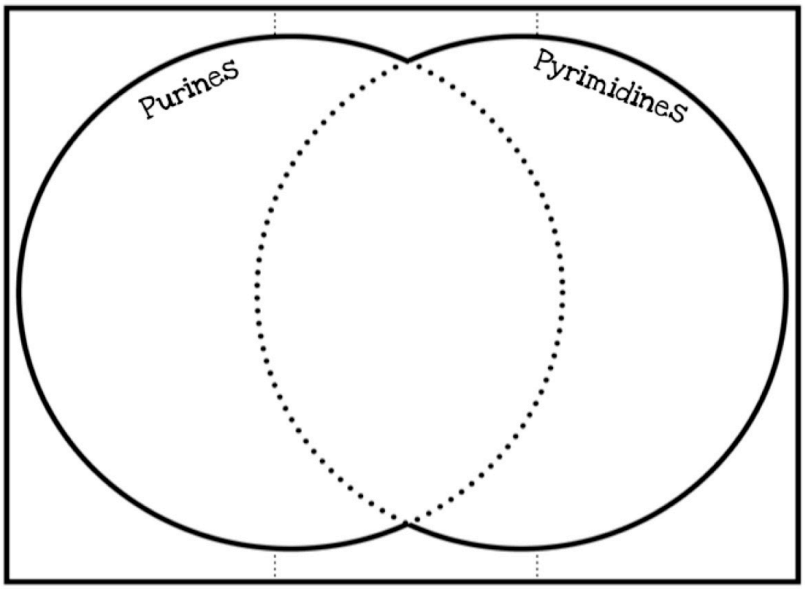








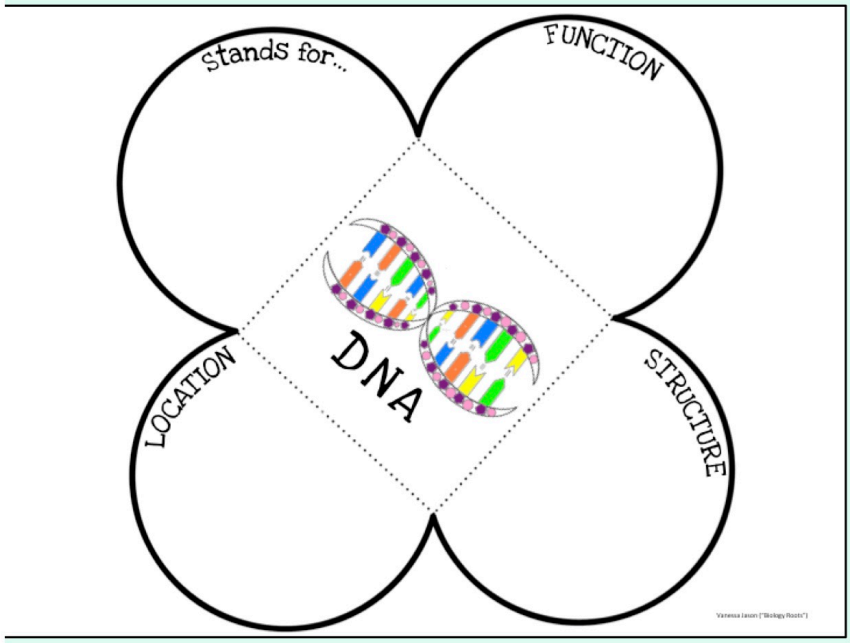
PURINE/PYRIMIDINE MATCH BOOK FOLD

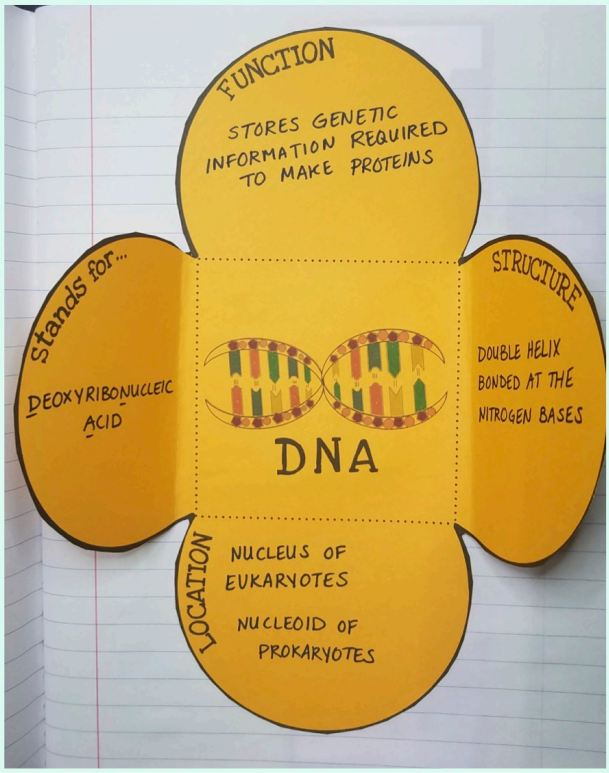


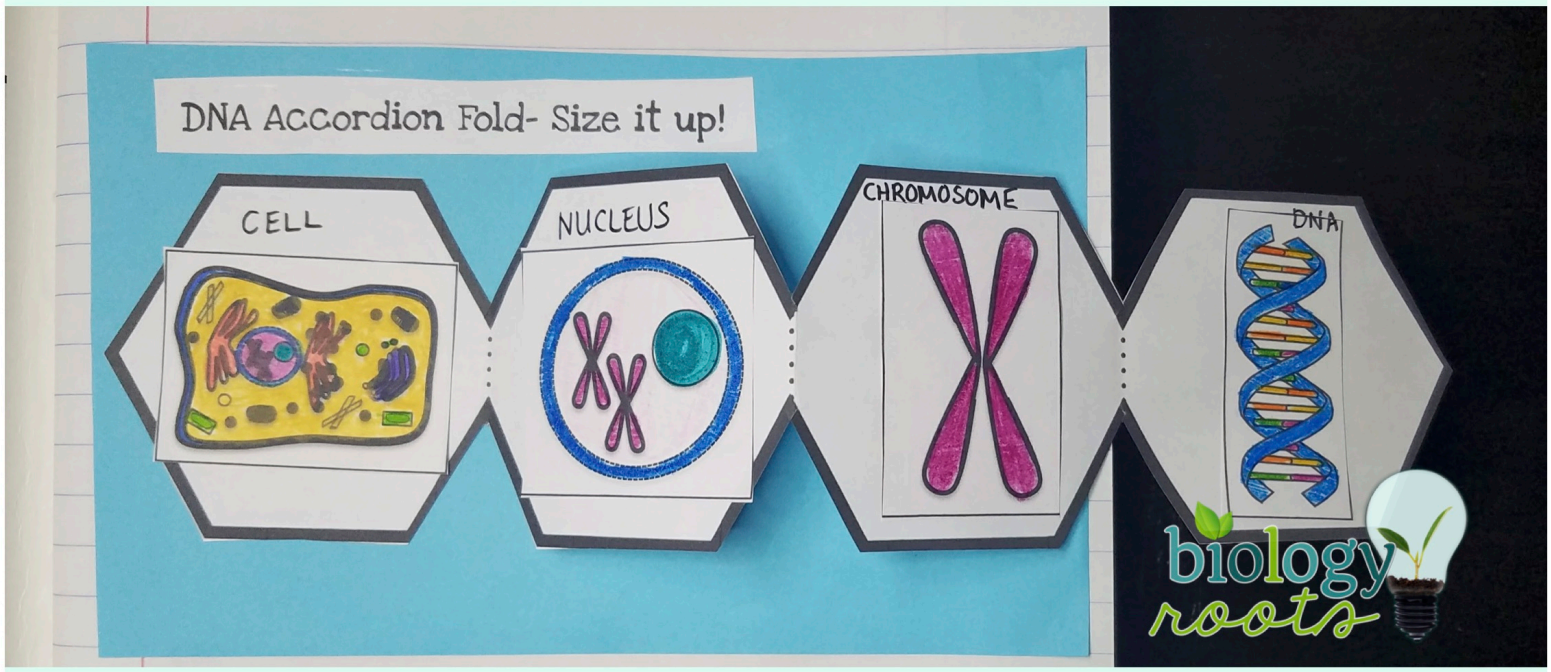
PURINES/PYRIMIDINES VENN DIAGRAM

DNA SHAPE FOLD (STRUCTURE, FUNCTION, LOCATION)

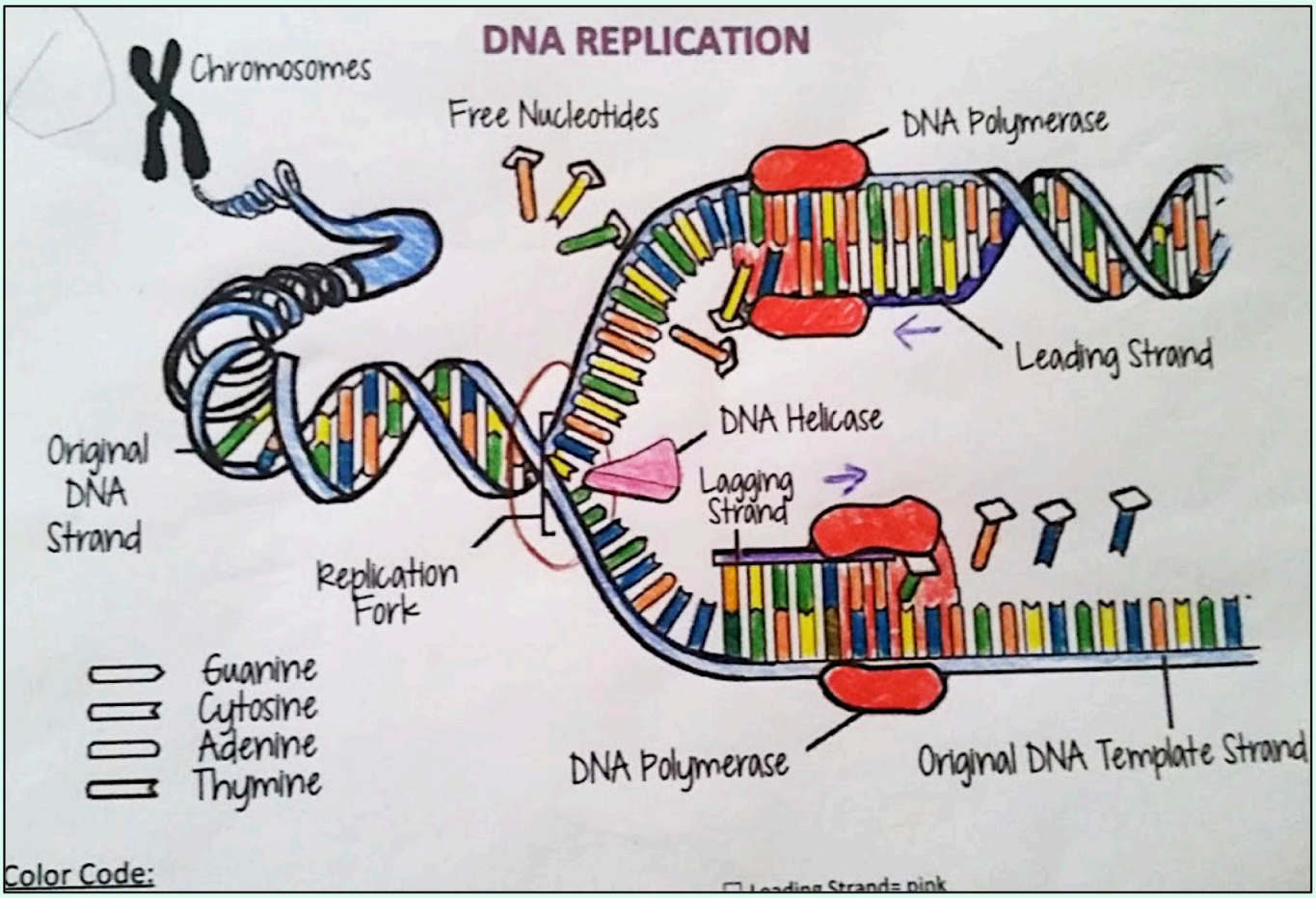
SIZE ACCORDION

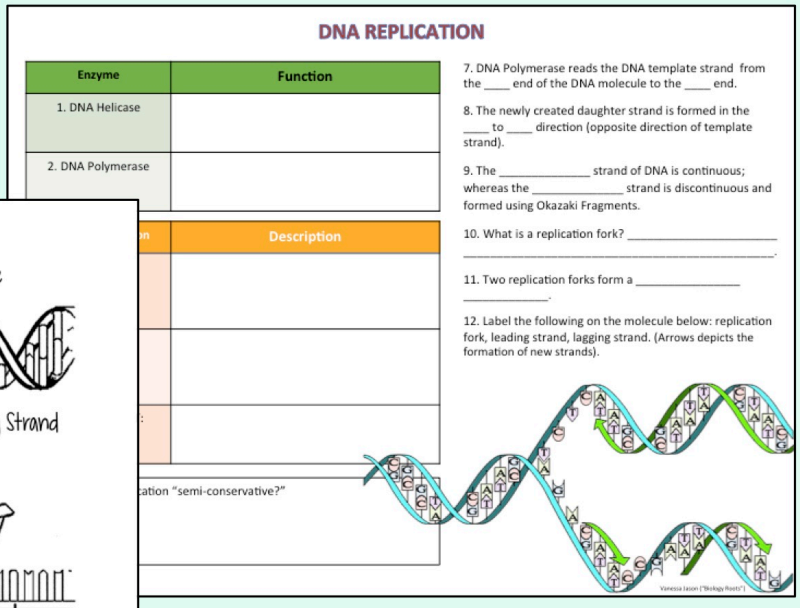


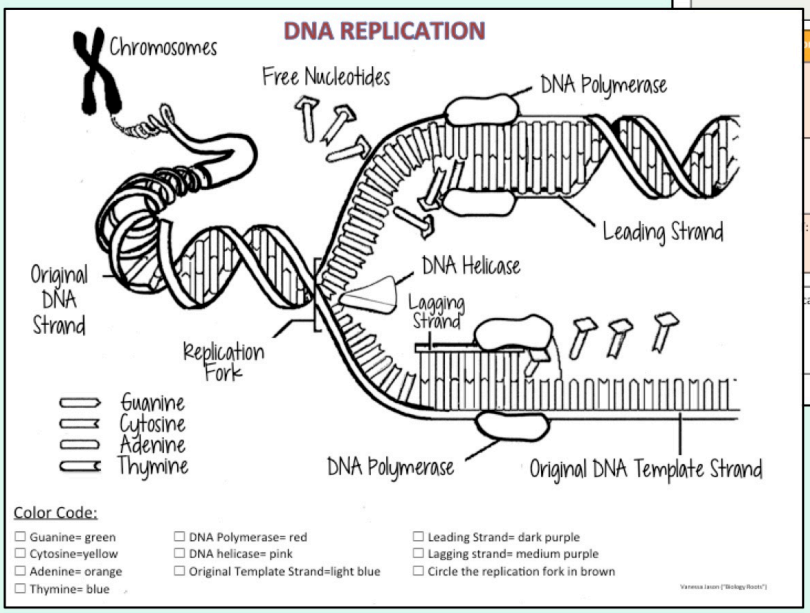




DNA REPLICATION COLORING AND QUESTIONS

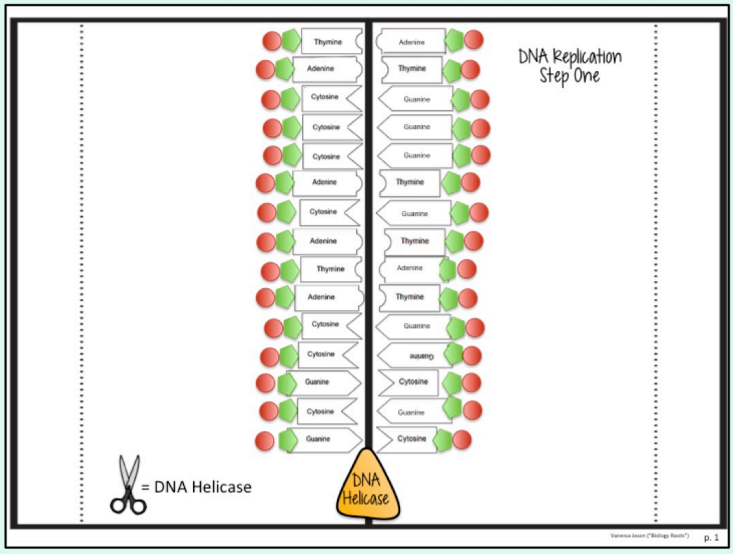


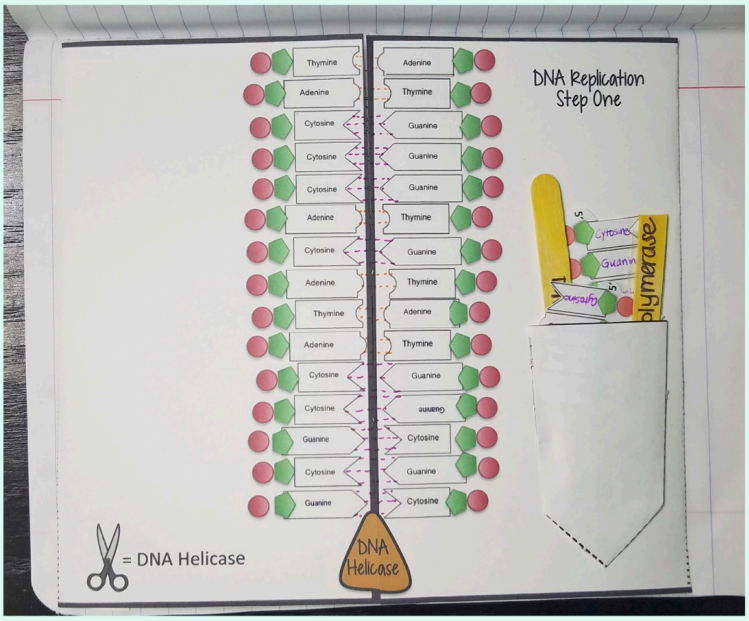




biology roots

DNA REPLICATION DOUBLE DOORS





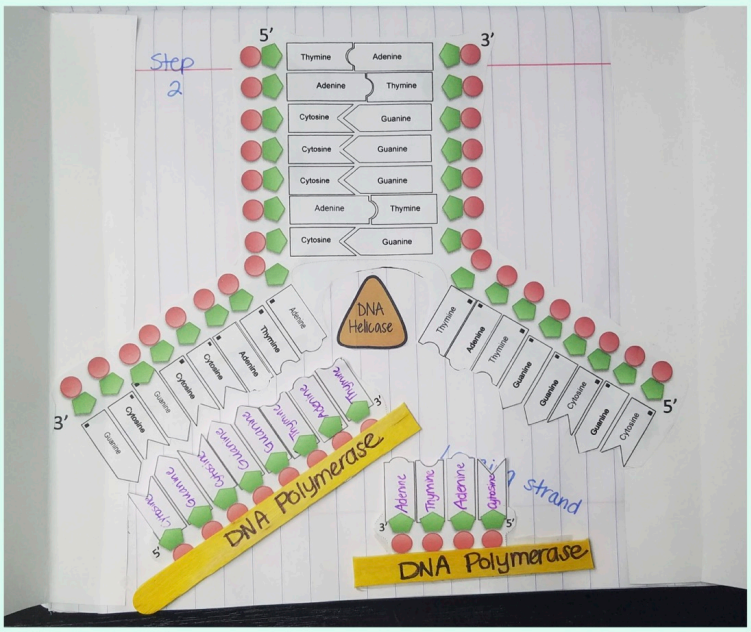
DNA Replication Questions Name:_____

1. The function of DNA helicase is to _____.
2. The function of DNA Polymerase is to _____.
3. DNA Polymerase reads the original template strand from the ____ end of the DNA molecule towards the ____ end.
4. During DNA replication, newly formed DNA is built starting at the ____ end and moving towards the ____ end.
5. The leading strand of the newly synthesized DNA goes (circle one) [towards | away from] the replication fork.
6. The lagging strand of the newly synthesized DNA goes(circle one) [towards | away from] the replication fork.
7. Lagging DNA is built using _____ fragments.
8. Why does the lagging strand run into "trouble" when replicating? _____
_____
_____.
9. Why are the terms "continuous" used to describe the leading strand and "discontinuous" used to describe the lagging strand?
_____
_____.
10. The result of DNA replication results in two molecules of DNA, which in total consists of 4 strands of DNA: two original strands and two new strands. We call this "_____-_____" replication.

Connecting Concepts

11. Why is DNA replication important? _____
_____.
12. Do you think DNA replicates before or after cell division? Why? _____
_____.

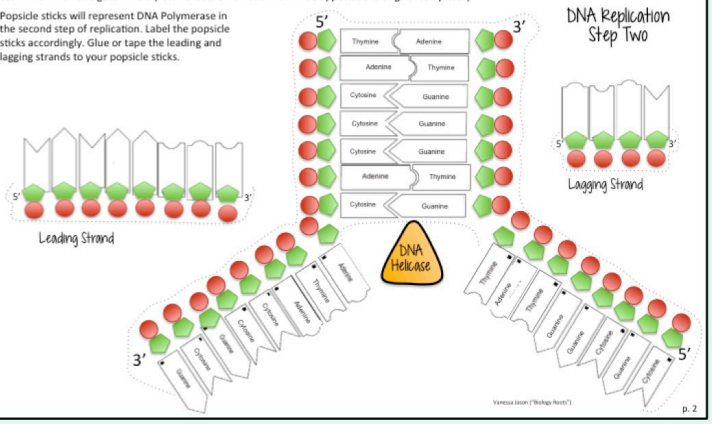
Vanessa Jason ("Biology Roots")



Interactive DNA Replication Fold (Eukaryotic DNA)

Directions: One page 2, cut out the double doors on the outer solid edge. Glue the tabs into your notebook.
Using your scissors to represent DNA helicase, cut down the solid line in the middle of the double doors. This represents helicase breaking the bonds between the nitrogen bases.
Cut out the pieces below, which represent the second steps of DNA Replication. Cut as close to the edge as you can along the nitrogen bases, and follow the dashed lines as a general guideline for the bottom portion. Paste the separated DNA molecule behind the double doors into your notebook. Then, write the appropriate complementary nitrogen bases on the leading and lagging strands. Use the 5' and 3' numbers to help determine which one goes where (recall that the new strands will be opposite the original templates).

Popsicle sticks will represent DNA Polymerase in the second step of replication. Label the popsicle sticks accordingly. Glue or tape the leading and lagging strands to your popsicle sticks.



biology roots

biology roots

Classroom resources to promote *scientific literacy* and curiosity.

Thank you so much for supporting biology roots

I am so excited that you will be using my resources to *benefit* your classroom. Listed below are some categories of products that I offer in my TpT store:

Digital Interactive Notebooks	Complete Units- No prep!
Paper Interactive Notebooks	Super Duper Science Sub Plans
Captivating Presentations	Terrific Task Cards

Copyright Notice and Terms of Use © Vanessa Jason ("Biology Roots")

All rights reserved by author. This product is to be used by the original purchaser only. This purchase grants one license for personal use. Duplication for other classes or by other teachers or for use in school wide distribution is strictly forbidden. Posting Biology Roots products on the internet in any form is strictly forbidden and violates the DMCA. Not for public display, including ANY websites. Violations are subject to the penalties of the Digital Millennium Copyright Act.



It IS Okay to...	It is NOT Okay to...
Use this for *personal use only* in your classroom as often as you would like, every year!	• Share this resource with your coworkers or friends unless you buy additional licenses, • (1 per each additional teacher), which are offered at a discount. • Post this item to your school website, personal website, file-sharing website, ANY website, without consent from the author, Vanessa Jason.

biology roots

Sign up for my newsletter to receive exclusive offers.

