

DNA Self-Teach

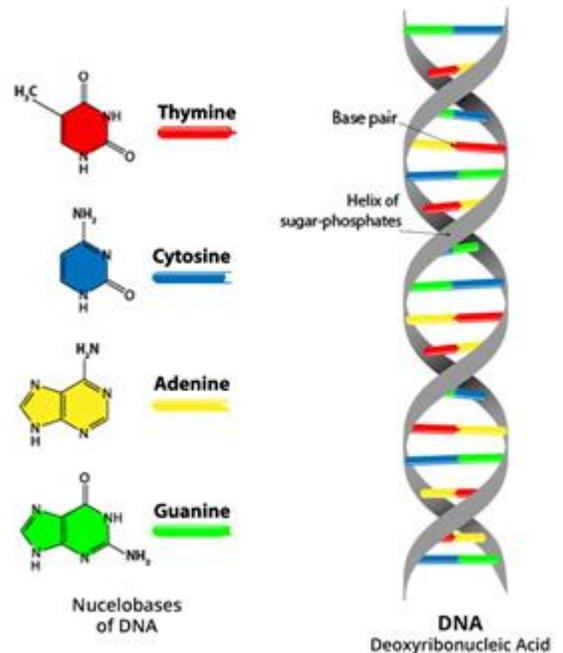
Directions:

1. Go to www.gatelyscience.com
2. Scroll over "Resources"
3. Scroll over "High School"
4. Click on "DNA Self-Teach"
5. Follow the directions below while using the links online.

Part A: DNA Structure

Link 1: Coloring DNA

1. Use the computer image to color-code the picture HERE → Use colored pencils to color.
2. How many "rings" are in Thymine & Cytosine? ____
3. How many "rings" are in Adenine & Guanine? ____
4. Which bases pair together? (write the full name)
 - a. _____ with _____
 - b. _____ with _____
5. What do you notice about the number of rings in the bases that pair together?



Link 2: DNA Structure Information

1. What is the "backbone" of DNA made out of? _____ and _____
2. *Zoom in to the words under the "Backbone" heading...*
3. DNA is a polymer made up of units called _____
4. These are made of three components:
 - a. _____
 - b. _____
 - c. _____
5. *Zoom in under the words "What holds DNA together"...*
6. DNA is held together by _____ between bases.
7. *Zoom in under the words "From DNA to Proteins"...*
8. Bases on a single strand of DNA act as a _____. The letters form three letter _____, which code for amino acids- the building blocks of _____.

Link 3: Build a DNA Molecule

1. Enable Flash and click "Start Building". Pair the correct bases together, A-T & C-G, until a box comes up.
2. The box says: "**At this rate, you will need to work day and night for _____ to transcribe the gene in one human cell.**" Therefore, DNA replication is very (fast or slow). ← *circle*

Name: _____ Date: _____ Block: _____ Score: _____

Part B: DNA Replication

Link 4: DNA Replication Animation

1. The initial picture is not clickable. Scroll down until you see the animation... Enable Flash if needed.
2. Press "Unzip" the DNA, which means to "unwind" the double helix.
3. Read the text under the **Replication** heading.
4. What type of molecule unzips the DNA? (carbohydrate or lipid or protein/enzyme) ← circle one
Note: It's called "helicase" (what does "-ase" mean again?!)
5. What must break in order for the DNA strands to separate? _____
6. The region of DNA (place) where the strands separate is called the _____.
7. Click "Ok" and read the text.
8. Name the enzyme that builds the new DNA strands: _____
9. Add the correct bases on the diagram.
What are the matching pairs? _____ - _____ & _____ - _____
10. You and the enzymes have just made parts of two _____. When replication is complete, they will be two separate molecules.
11. The process of making new DNA is called: _____ (Hint: What's the title of the text?)

Part C: DNA Overview

Link 5: Edpuzzle

1. Click the link and sign in with your Framingham gmail.
2. Complete the Edpuzzle titled "**DNA Structure & Function**" for regular credit.
Record your score here: _____/100
3. Once finished, you may complete the Edpuzzle titled "**Rosalind Franklin, the unsung hero of DNA**" for EXTRA CREDIT that will boost your overall Edpuzzle scores for the term.