**History of DNA WebQuest**

**1.     Friedrich (Fritz) Miescher**

[**http://www.dnai.org/timeline/index.html**](http://www.dnai.org/timeline/index.html)

Find Miescher on the timeline and click on the bucket with the Red Cross to watch the animation.  In 1869, he extracted a substance from white blood cells that he called nuclein.  What do you think he was actually extracting?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2.     Frederick Griffith**

<https://www.dnalc.org/view/16375-animation-17-a-gene-is-made-of-dna-.html>

Frederick Griffith’s famous experiment was conducted in 1928.  In his experiment, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ smooth virulent bacteria plus live rough \_\_\_\_\_\_\_\_\_\_\_\_\_\_ bacteria killed mice.  His experiment demonstrated that DNA was the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ material.

**Griffith’s Famous Experiment: Transformation**

 

 **3.     Oswald Avery**

<http://www.dnai.org/timeline/index.html>

Click on the “Transforming Factor” animation

In 1944, what did he discover that DNA is responsible for?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **4.     Alfred Hershey and Martha Chase**

 <http://www.dnai.org/timeline/index.html>

Click on the “Blender Experiment”

a.      In 1952, their experiments showed that \_\_\_\_\_\_ is the genetic material instead of \_\_\_\_\_\_\_\_\_\_\_\_.

**5.     Erwin Chargaff**

[**http://www.dnai.org/timeline/index.html**](http://www.dnai.org/timeline/index.html)

Watch “Chargaff’s Ratios.”  Chargaff used relative proportions of bases in DNA to come up with his rules for base pairing.  What are four sources of DNA that he used?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[**http://fig.cox.miami.edu/~cmallery/150/gene/chargaff.htm**](http://fig.cox.miami.edu/~cmallery/150/gene/chargaff.htm)

Adenine (A) pairs with \_\_\_\_\_\_\_\_\_\_\_\_\_

Guanine (G) pairs with \_\_\_\_\_\_\_\_\_\_\_\_\_

The bases that are purines include \_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_.

The bases that are pyrimidines include \_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 **6.     Rosalind Franklin.**

[**http://www.accessexcellence.org/RC/AB/BC/Rosalind\_Franklin.php**](http://www.accessexcellence.org/RC/AB/BC/Rosalind_Franklin.php)

[**http://www.dnai.org/timeline/index.html**](http://www.dnai.org/timeline/index.html)- Watch Franklin’s X-ray diffraction pattern.

 What is X-ray crystallography (a.k.a. X-ray diffraction)?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 What did she discover about the shape of DNA?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**7.     Linus Pauling**

[**http://www.dnai.org/timeline/index.html**](http://www.dnai.org/timeline/index.html)- Watch the animation.

Linus Pauling proposed a structure for DNA that was incorrect.  Describe or draw it below:

 **8.**     **Maurice Wilkins**

[**http://www.nzedge.com/heroes/wilkins.html**](http://www.nzedge.com/heroes/wilkins.html)

His research, with the help from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, led to the discovery of the DNA molecule structure.  This discovery was made by American biologist, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and British physicist, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**9.     James Watson and Francis Crick.**

[**http://www.dnai.org/timeline/index.html**](http://www.dnai.org/timeline/index.html)

  a.      What did they receive the Nobel Prize for in 1962?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b.     What is the difference between Pauling’s structure and the actual structure of DNA?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **10. DNA Game**

[**http://nobelprize.org/educational\_games/medicine/dna\_double\_helix/**](http://nobelprize.org/educational_games/medicine/dna_double_helix/)

**Play the game and record what three organisms you had:**

**1.**

**2.**

**3**.