

**AP Biology Unit 1**  
**History of DNA WebQuest**

1. Friedrich (Fritz) Miescher

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

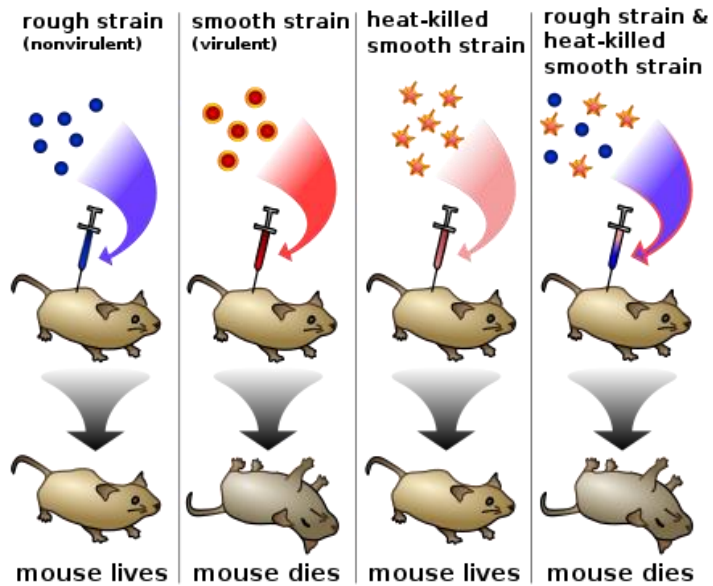
Find Miescher on the timeline and click on the bucket with the Red Cross to watch the animation. In 1869, he extracted a substance from white blood cells that he called nuclein. What do you think he was actually extracting?

2. Frederick Griffith

<http://biology.clc.uc.edu/courses/Bio104/dna.htm>

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.dnaftb.org/17/animation.html>

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

4. Alfred Hershey and Martha Chase

[http://users.rcn.com/jkimball.ma.ultranet/BiologyPages/H/Hershey\\_Chase.html](http://users.rcn.com/jkimball.ma.ultranet/BiologyPages/H/Hershey_Chase.html)

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

5. Erwin Chargaff

<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>

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> - Watch Franklin's X-ray diffraction pattern (You may need to search for this on Google).

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> - Watch the animation.

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

8. Maurice Wilkins

[http://genome.wellcome.ac.uk/doc\\_WTD021049.html](http://genome.wellcome.ac.uk/doc_WTD021049.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>

- 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.