

DNA History: A Foldable Timeline Activity

Objective:

Create a timeline highlighting the major events that led to the discovery of the DNA molecule and its structure.

Materials: ruler, legal sized blue sheet of paper, tape, cut-out pieces sheet with questions, five pieces of index card, scissors, glue

Instructions:

1. Take your blue sheet of paper and fold over (hot dog style) approximately 8cm from the bottom.
2. Tape the seams neatly. Check out my example.
3. Fold your paper like an accordion (approximately 7 cm) until you have created five even panels with pockets.
4. Now use the reading "DNA and Its Role in Heredity" to analyze the contribution of the five following scientists to the discovery of the DNA molecule and its structure.
 - a. Griffith
 - b. Avery
 - c. Chargaff
 - d. Franklin and Wilkins
 - e. Watson and Crick
5. Once you feel comfortable with their contribution and their experiments, you may start gluing the cut-outs onto your foldable. You will place the picture, name, and date on the lower section of each panel.
6. On the top portion of each panel you will hand write neatly their overall contribution to our understanding of the DNA molecule and its structure.
7. After completing the panel, take a note card and glue the appropriate picture that represents or illustrates the experiments associated with that scientist or the results of their experimentation. Write their name on the bottom of the card. On the back of the card, I want you to summarize their experiment in your own words and record the results of the experiment. There is not much room, so be concise. Use the reading as a resource. Place the card in the pocket of the panel.
8. Once all five scientists have been completed, answer the associated questions that have been written on the cut-out sheet in complete sentences on the back of the foldable (see example).

1 of 5 overall panels

*Overall contribution to our understanding of the DNA molecule and its structure.
(handwritten neatly)*

Name of scientist(s)

Picture of Scientist(s)




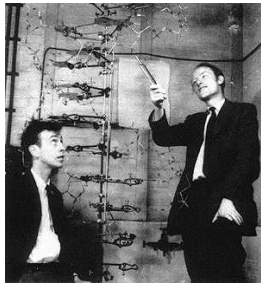
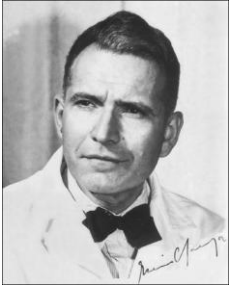


Correct Date of Experimentation

<p>Picture of the experiment by the scientist</p>	<p><i>Summarize the experiment in your own words Record the results of the experiment</i></p>
<p><i>Name of scientist</i></p>	

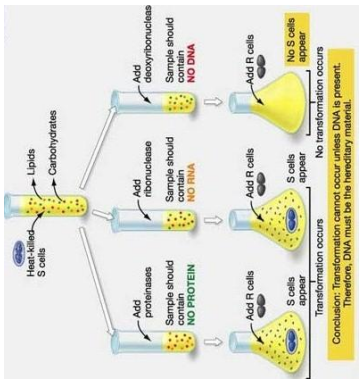
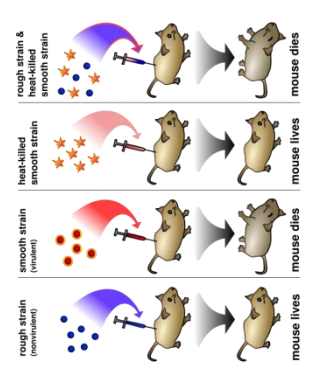
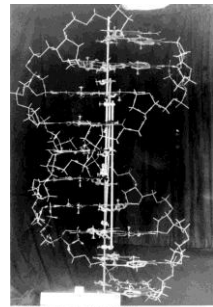
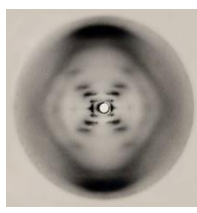
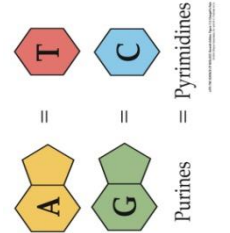
Front of note card (left)
Back of card (right)

Cut-out Sheet and Analysis Questions

Instructions: Cut these out and unscramble in correct chronological order on your foldable.

Oswald Avery	Franklin and Wilkins	Erwin Chargaff	Frederick Griffith	Watson and Crick
				
1953	1952	1928	1950	1944

Use the following pictures and names on the skinny pieces of note card that belong in the pockets of the timeline.

				
Oswald Avery	Franklin and Wilkins	Erwin Chargaff	Frederick Griffith	Watson and Crick

Analysis Questions (please answer on the back of the foldable)

Pre-AP

1. We did not discuss Hershey and Chase's experiment. Describe their experiment and the contribution that they made to the determination of DNA as the transforming material.
2. Why did Hershey and Chase grow viruses in cultures that contained both radioactive phosphorus and radioactive sulfur? What might have happened if they had used only one radioactive substance?
3. Describe three of the functions of DNA that Watson and Crick's model provided an elegant solution for.
4. Why is the word antiparallel used to describe the structure of DNA?