

THE TECH MUSEUM: DNA

Page 1 of 2 Name _____ Per _____

Central Science → Life Science → Genetics → The Tech DNA

<http://www.thetech.org/exhibits/online/genome/>

A. DNA..... Click on "next" toward the top of the screen. Fill in the blanks as you go....

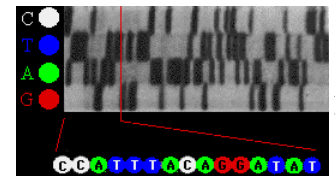
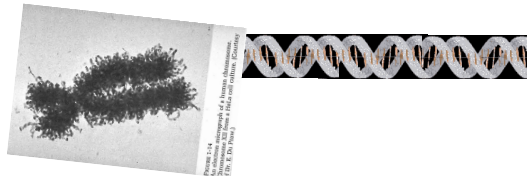
- DNA tells bodies of living organisms how to g_ _ _ and what organism to be.
- You carry b_ _ _ _ _ of copies of the directions, or DNA, to make you.
- You can't normally see the DNA, even with a m_ _ _ _ _ .
- Most of your cells have a DNA in the n_ _ _ _ _ , or control center of the cell.
- The unraveled DNA from ONE cell would be as long as the height of a tall _ _ _ .
- DNA is wound up into structures called c_ _ _ _ _ .
- DNA is not colored, but chromosomes have bands when stained or colored.
- If you could unravel all of your chromosomes from all of your cells you could form a strand from the EARTH to the _ _ _ _ about _ _ _ _ times.
- From an X-ray just over 50 years ago, James Watson concluded that DNA had a s_ _ _ _ _ shape.
- W_ _ _ _ _ and Frances Crick, determined DNA is two spiral strands twisted around each other, connected by short "bridges" or steps, a double h_ _ _ _ .
- Rosalind Franklin took the first useable _ - _ _ _ pictures of DNA.
- DNA dissolves in _ _ _ _ _ so billions of cells' DNA can be in a small tube of water.
- DNA can be broken down into 4 different chemicals called BASES, A, _ , _ & _ .
- The DNA in o_ _ CELL has the complete instructions or Human G_ _ _ _ _ for making a new person.
- When DNA forms, the base A's always line up with _'s. G's line up with _'s.
- Since this presentation was written, scientists have completed the Human Genome. The main part of the Human Genome was completed in the 2000's.
- Use these labels to label the Genetics Timeline:

DNA

Mendel's Work

Human Genome

Chromosome



1860's: _____

1880's: _____

1950's: _____

2000's: _____

The presentation and this worksheet:

Checked on Screen

10 points

Click on "Search for the Sequence". "Find It"

Checked on Screen.

5 points



Ethics: Central Science → Life Science → Genetics → The Tech DNA <http://www.thetech.org/exhibits/online/genome/>

Officially completed in 2003, the **Human Genome Project (HGP)** was a 13-year project coordinated by the U.S. Department of Energy and the National Institutes of Health. The U.K., Japan, France, Germany, and China were some of the countries that cooperated in the huge effort that was finished early

Ethics: Think about the future.

10 points

We are living during extreme advances in genetics. The **Human Genome** is just the beginning. The future includes stopping or curing genetic diseases and/or defects. As scientists learn to change the "Sequence" of the DNA bases, they learn to change traits that we call "diseases" or "defects", such as diabetes. Changing DNA may become as common as cross-pollinating red and white flowers to get pink flowers.

There are many questions. When is it NOT acceptable to change traits? Should a "defect" always be changed? How do you define "defect"? When is a dislike a defect?

Click "Next" and read the Ethics section.

For each of the 5 questions, give your answer, then a one sentence reason.

1. Parent: Answer _____

Reason: _____

2. Doctor: Answer _____

Reason: _____

3. Patient: Answer _____

Reason: _____

4. Judge: Answer _____

Reason: _____

5. Voter: Answer _____

Reason: _____