

JOURNEY INTO DNA

Go to <http://www.pbs.org/wgbh/nova/photo51/jour-flash.html>

As you journey into DNA, answer these questions in your composition notebook:

- 1) About how many cells are in the human body?
- 2) In what cells is the human genome located?
- 3) What makes red blood cells exceptions to all other cells?
- 4) What does it mean for a cell to be specialized?
- 5) How does an undifferentiated embryonic cell become specialized?
- 6) Why is the cell's nucleus called its control center?
- 7) Where are chromosomes located?
- 8) How many sets of chromosomes make up the human genome?
- 9) How many pairs of chromosomes are there?
- 10) Where do the sets come from?
- 11) How do we understand 97% of the genome?
- 12) In this tutorial, the genome is said to have how many genes?
- 13) In the film, how many genes were said to make up the human genome?
- 14) Speculate about the differences in the numbers.
- 15) When a chromosome looks like an X, what's about to happen?
- 16) This cell division is called?
- 17) How is it different from meiosis?
- 18) What are chromosome bands made of?
- 19) Why, at this cell stage, are there identical chromosome pairs?
- 20) Where are genes located?
- 21) In addition to determining specific traits, what else to genes do?
- 22) What are genes made of?
- 23) If stretched out straight, what is the linear length of DNA in the human genome?
- 24) How does it all fit into the nucleus of every cell?
- 25) What's the name of the 'spring coils' in a gene?
- 26) What is chromatin made of?
- 27) DNA has a slight positive or negative charge?
- 28) What's the name of the protein 'discs' that DNA is wrapped around?
- 29) Why wasn't Rosalind Franklin also awarded the Nobel Prize along with Watson and Crick?
- 30) In order to see 'naked' DNA unobscured by chromatin, what has to be removed?
- 31) Name the four bases in DNA.
- 32) What is a rung on the DNA ladder made of?
- 33) Thymine pairs with...
- 34) Guanine pairs with...
- 35) The sides of the DNA ladder, which the bases attach to, are made of what molecules?
- 36) What are these molecules, together with the attached bases, called?
- 37) About how many atoms are each nucleotide molecule made up of?
- 38) Name the 5 types or elements of atoms.
- 39) There are approximately how many base pairs in the human genome?
- 40) While we now know the sequence of DNA bases that make up the human genome, what don't we know? ...