Name:_____P.__

DNA WEBQUEST

Instructions: Use headphones or mute the sound before you begin. Then type your answers in red or blue as you explore the Genetics website to find the answers:

PART ONE: STRUCTURE OF DNA
Go to: http://learn.genetics.utah.edu/content/basics/oldtour/
Take the tour of DNA by clicking on "What is DNA?" and answer the questions below:

1. In what organelle (CELL PART) would I find your DNA (YOUR INSTRUCTIONS)? _____
2. What does DNA stand for? _____
3. The DNA molecule comes in the form of a _____ladder and scientists call its shape a _____.
4. The MIDDLE of the DNA MOLECULE is made of bases. These bases will only pair up in a particular way: A always pairs with _____. C always pairs with _____.
5. What makes up the handrails or SIDES of a DNA molecule(have to look at the picture) SUGAR and _____.
6. G stands for _____.
A stands for _____.
T stands for _____.
C stands for _____.

GO BACK TO THE TOUR PAGE AND CHOOSE "WHAT IS A GENE?"

1. GENES are _____manuals for our bodies.
2. GENES are made of _____.
3. A gene or protein called _____is responsible for our RED BLOOD CELLS to carry_____.
4. If our hemoglobin gene is normal, the hemoglobin protein will work fine. But if the instructions in the gene are changed, or _____, changes in the hemoglobin could result in the disorder_____.
5. TRUE or FALSE: YOUR DNA or GENES are responsible for your EYE COLOR. _____

GO BACK TO THE TOUR PAGE AND CHOOSE "WHAT IS A CHROMOSOME?"

1. If you pulled the DNA from one of your cells, it would be how long?

2. How does all of that DNA fit inside your cells? _____

3. _____are storage units for DNA.

4. TRUE or FALSE: Different organisms have a different number of chromosomes inside each cell. 5. How many chromosomes do humans have? _____

6. You received _____of your chromosomes from your _____ and _____ from your dad.

7. Males have _____ and _____sex chromosomes.
Females have _____ sex chromosomes.

8. How many chromosomes does a mosquito have? _____
How many chromosomes does an onion have? _____
How many chromosomes does a carp have? _____

9. GOOGLE: Look up on google.com how many chromosomes ferns have. What is their record number?
_____

10. You decide: Does having more chromosomes necessarily make you a “better” or more advanced organism? Explain your thinking.

PART TWO: DNA DRAMA
Read the following excerpt about Watson, Crick, Franklin & Wilkins:
http://www.pbs.org/wgbh/aso/databank/entries/do53dn.html

Then respond:
Who was right? Was it fair or justified for Wilkins to share Franklin’s work with the other team of scientists, who later went on to win the Nobel Prize for it?

PART THREE: DNA REPLICATION
Go to: http://www.pbs.org/wgbh/aso/tryit/dna/

CHOOSE “DNA WORKSHOP ACTIVITY”
CHOOSE “DNA REPLICATION”

1. _____, the molecule that holds _____, makes an _____ copy of itself whenever _____. In this activity, it's up to you to make the copy.

2. LOOK AT THE LOWER RIGHT HAND CORNER...Where are you located? Paste a print-screen picture here of where you are located:

3. What is the FIRST STEP OF DNA REPLICATION? _____

4. Where does the DNA molecule UNZIP? _____

NOW MATCH THE BASES TO MAKE A NEW DNA STRAND, then answer:

5. A (ADENINE) always goes with _____(THYMINE)
C(CYTOSINE) always goes with _____ (GUANINE)