**DNA Webquest**

Go to <http://learn.genetics.utah.edu/content/begin/tour>. Take the tour of DNA by clicking on “What is DNA?” and answer the questions below.

1. In what organelle 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 a look at the picture). SUGAR and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

6. G stands for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. A stands for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. T stands for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. C stands for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

7. A DNA strand is made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which make up \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which make up sentences.

8. These “sentences” are called “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”.

Go to <http://learn.genetics.utah.edu/content/molecules/builddna/>.

Click “Start Buliding” and “build” a DNA molecule by using the complementary base pairing rule (\_\_\_ always pairs with \_\_\_, etc). Drag over at least 10 bases to build the DNA molecule and answer the questions below.

9. How many new cells does your body produce every day?

10. What process must first occur before cell division happens?

11. How long does it take for DNA replication to occur in our cells?

12. Where on the DNA strand does replication occur?

13. What type of bonds are represented by the holes on the different nitrogen bases?

Go to <http://www.dnalc.org/resources/3d/23-dna-unzip.html>. Watch the video and answer the questions below.

14. The first step in DNA replication is untwisting the DNA strands. What does the order of the nucleotide bases determine?

Go to <http://www.dnalc.org/resources/3d/DNAReplicationBasic_w_FX.html>. Watch the video and answer the questions below.

15. What is the “whirling blue molecular machine” called?

16. What is its function?

17. One DNA strand (the strand to the right) is continuously being replicated. Why must the other DNA strand be copied backwards?

18. How is the other DNA strand copied?

19. What is the end result?

Go to <http://learn.genetics.utah.edu/content/molecules/gene/> and answer the questions below.

20. What is a gene?

21. What is a gene composed of?

22. Blood cells use a protein called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to capture and carry oxygen.

23. When a gene is changed, it is said to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

24. A mutation in the hemoglobin gene causes what disorder?