Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**I CAN** describe the basic structure of the DNA molecule.

Period\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Complete a DNA Model of a Gene**

1. Write your code here\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Look on the back of this paper--What protein does your gene code for?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. What does this protein do?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. On the DNA model**, fill in the missing sugars and phosphates with letters S and P.**

5. On your model, make the gene that is coding for the protein on the DNA double helix

 strand. Some of you will only fill out one ladder, others will need to fill out two ladders.

 **Do this by writing your code down one side of the “ladder.”**

6. Now **draw in the shape** that is between the bases. Remember—there are 4 bases, so

 there should be 4 different shapes.

7. **Now fill in the other base**—remember the base-pairing rules A to T and G to C.

8. **Color** all the A bases one color, color all the T bases a different color, color all the G bases another color and all the C bases another color.

9. Then **cut** out the DNA model. Some of you will need to tape the two ladders together.— (do **NOT** cut off the tab***—“glue or tape”)***

10. **Write your name** and period on the back of your DNA model and turn it in with this completed worksheet.

***Look in your book to complete the following: starting on page 128***

11. The structure of DNA is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

12. DNA stands for the words \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

13. The definition of DNA is: (copy from the glossary)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. A nucleotide is a subunit of DNA consisting of one of four bases and



 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

S



 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

P

15. The four bases in DNA are: (page 128—write out the names of the bases)

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which is complementary to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which is complementary to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

GGTCTA

 Tells the ribosome to make the hormone **melatonin, (**meləˈtōnən), which helps regulate sleep and wake cycles.



AATGCCATGATA

* Tells the ribosome to make **myosin**, *(mye-oh-sin)* the main protein that makes up muscle cells

TGCCATCGA

* Tells the ribosome to make **hemoglobin**, *(hee-moe-glow-bin)* the protein that carries oxygen throughout the body

GGCTATCGA

* Tells the ribosome to make an **antibody** protein, which protects the body from infection

GGATCC

* Tells the ribosome to make **pepsin**, a protein that speeds up digestion of food

GTACTGACGACC

* Tells the ribosome in a plant cell to make **ethylene**, *(eth-i-lean)* a protein which makes fruit ripen faster

TAACTG

* Tells the ribosome in a plant cell to make **auxin**, *(ox-in)* a protein which makes the plant turn towards the sun

GTCATC

* Tells the ribosome to make **serotonin**, *(sare-uh-toe-nin)* a hormone protein which scientists think helps people feel happier

AACTGAAGC

* Tells the ribosome to make **cortisol**, *(kore-ti-sol)* a protein that regulates changes in the body due to stress (for example, cortisol helps lower blood pressure when it starts to rise from a stressful situation)