Name_____ Date:_____

Making a DNA Model

Lesson Objectives

With the completion of this lab, you will be able to:

1. Describe the main components of DNA.
2. List the bases which appear in DNA and state their relationships.
3. Correctly give the sequence of the bases on one-half of a DNA molecule when given one-half of a DNA strand.
4. Explain how DNA replicates.

Materials

Red and black licorice
Colored marshmallows/gum drops
Toothpicks
String or wire
Needle

Procedure

1. Gather together red and black licorice sticks, colored marshmallows, toothpicks, string (or wire), and needle.
2. Assign names to the colored marshmallows to represent the nitrogen bases. There should be four different colors each representing adenine, thiamine, cytosine and guanine.

Yellow_____ Green_____
Orange_____ Pink_____

3. Assign names to the colored licorice pieces with one color representing the sugar molecule and the other representing the phosphate molecule.
4. Cut the licorice into pieces that are about 2.5cm long.
5. 5. String half of the pieces together lengthwise alternating between the black and red pieces.

Name_____ Date:_____

Making a DNA Model

6. Repeat the procedure for the remaining licorice pieces to create a total of two strands of equal length.
7. Connect the two different colored marshmallows together using the toothpicks.
8. Connect the toothpicks with the candy to either the red licorice segments only or to the black licorice segments only, so that the candy pieces are between the two strands.
9. Holding the ends of the licorice sticks, twist the structure slightly.

<u>Follow-up Questions</u>

1. List the main components of DNA._____
_____
2. In a DNA molecule, which nitrogen bases bond together? How?_____
_____
3. Describe how DNA replicates._____
_____
_____
_____
4. Are the two resulting strands similar or different? Explain_____
_____
_____
_____
5. Why is replication an important cell process? _____
_____
_____
_____
6. Will the two DNA molecules produced, function the same or differently? Explain._____
_____
_____
7. How did you like this lab/activity? Explain. _____
_____
_____
_____