3.6: DELICIOUS DNA
ANSWER KEY

Build a DNA Model

DNA Sequence:

Model DNA Sequence	
Coding Strand	**Complementary Strand**
A	T
T	A
G	C
C *	G *
C	G
G	C
A	T
A	T
T	A

* These answers will vary.

Candy Color Key:
There are no right answers for the candy color key! As long as there is a different color to represent each base, you are on the right track!

Key	
Base	**Candy Color**
Adenine (A)	Answers will vary
Thymine (T)	Answers will vary
Cytosine (C)	Answers will vary
Guanine (G)	Answers will vary

Investigation Reflection

1. What are some strengths of this candy and toothpick model?
   Here are some strengths of this model:
   - The model is one way to represent a structure that is too small to be seen with the naked eye.
   - The model shows that bases pair up in a specific way on the "steps" of the DNA ladder.
   - The model shows that the coding strand determines what bases will be on the complementary strand.
   - The model shows that the order of the bases is important.
   - The model shows that the DNA backbone holds the DNA together and can twist into the double helix structure.

2. What are some limitations of using this candy and toothpick model to represent DNA?
   There are lots of different answers, but here are some limitations we wanted to share with you:

- The model does not stay in the double helix shape by itself.
- The model shows the structure of DNA, but it does not help us understand what DNA does or how it works.
- The model is much shorter than the actual DNA.

3. Imagine that the DNA model you built is a section of DNA that gives unicorns their fur color. Also, imagine that another student picked a different base to fill in the blank on the DNA coding strand. Do you think these two DNA sequences would result in unicorns with the same fur color or different fur color? Why do you think this?
   Answers will vary. This is a chance for you to record your current thinking about the relationship between DNA and physical traits. You will learn more about this in the upcoming modules.

4. How could scientists use a real DNA sequence to learn about a person or an organism?
   Answers will vary. This is a chance for you to record your current thinking about DNA, physical traits, and genetic engineering. You will learn more about this in the upcoming modules.