



HOMESCHOOL SCIENCE

MAKING A MODEL OF DNA

— with Candy and Toothpicks —

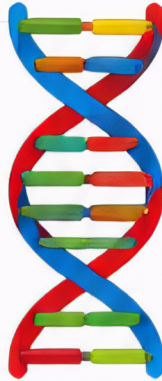
Name: _____

Date: _____

Lesson/Unit: _____

BACKGROUND

DNA (deoxyribonucleic acid) is the molecule that carries genetic information in living things. It is shaped like a double helix, which looks like a twisted ladder. The sides (or "backbone") are made of repeating units of sugar and phosphate. The "rungs" of the ladder are pairs of nitrogen bases. The base pairs always match: A with T and C with G.



MATERIALS

- Red licorice twists (2)
- Toothpicks
- Small gumdrops or jelly candies in 4 colors (one color for each DNA base)
- Scissors (adult use)
- Paper and pencil



Note: You can choose any 4 colors you like. Just be consistent with your base pairs!

PROCEDURE

1. Lay the two licorice twists parallel to each other. These will be the sugar-phosphate backbones.
2. Choose a sequence for your DNA. Remember: A always pairs with T, and C always pairs with G.
3. Build each "rung" of the ladder:
 - Poke a toothpick through a candy for the left side base.
 - Add the matching base on the other end of the toothpick.
 - Example: If you put A (yellow) on the left, put T (green) on the right.
4. Gently twist the two licorice backbones in opposite directions to form a double helix.
5. Check your model. Make sure all the base pairs match (A with T, C with G).
6. Display your model and label the parts.



SAFETY FIRST: Do not eat your model during the experiment. Wash your hands before and after.

CONCLUSION

What did you learn from this experiment?

One new thing I learned: _____

HYPOTHESIS

What do you think the DNA model will look like?
What does DNA do in living things?

RESULTS

Draw your DNA model below. Label the backbone, base pairs, and the ends.

ANALYSIS & QUESTIONS

1. What do the sides of your model represent?

2. What do the rungs represent?

3. Why do you think A always pairs with T, and C with G?

4. What is the job of DNA in living things?

5. If the order of the bases changed, what do you think might happen?

★ **DID YOU KNOW?** The human DNA molecule is about 2 meters long when stretched out!