

# DNA Model Instructions

**Your kit contains all the components needed to make a biologically correct DNA model.**

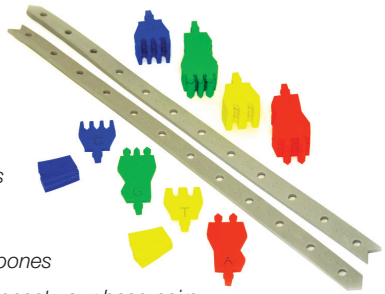
DNA contains four bases, called nucleotides:

- A** is for **Adenine** (ADD-ah-noon) – 6 red foam bases
- T** is for **Thymine** (THIGH-meen) – 6 yellow foam bases
- G** is for **Guanine** (GWAH-noon) – 6 green foam bases
- C** is for **Cytosine** (SY-tuh-seen) – 6 blue foam bases

and **Sugar-phosphate backbones** – 2 gray foam backbones

You'll use 1 bag of 24 blue and yellow sticker bands to connect your base pairs.

Before you begin, remove your bases from their foam sheets and remove the circular tabs in your sugar-phosphate backbones.



## Attach, Assemble & Twist!

### 1. Attach your nucleotides to each other to make base pairs.

The structure of your DNA model is like a puzzle that only fits together one way — just like in nature.

Adenine (**A**-red) always pairs with Thymine (**T**-yellow)

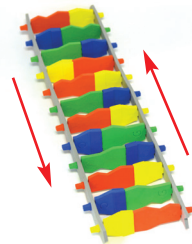
Cytosine (**C**-blue) always pairs with Guanine (**G**-green)

Connect your base pairs together like a puzzle and then add a yellow sticker band on each side of your Thymine (T-yellow) and Adenine (A-red) base pairs and a blue sticker band on each side of your Cytosine (C-blue) and Guanine (G-green) base pairs.



### 2. Assemble your biologically correct DNA. Notice the arrows on your sugar phosphate backbones. To be biologically correct, DNA must be **anti-parallel**, meaning DNA strands in a double helix must run in opposite directions.

Therefore, when you start to assemble your base pairs (in any order you choose) to the sugar-phosphate backbones, make sure the arrows on the outside of the backbones are pointing in opposite directions. Pull each end of a base pair through a hole in each sugar-phosphate backbone until the flared tip pops through.



### 3. To create the biologically correct, right-handed DNA helix, hold your assembled DNA model in front of you, turn your right hand towards you (counter clockwise) and your left hand away from you (clockwise) until the sugar-phosphate backbones touch each other in a tight coil.



Release the model and allow it to relax into its right-handed, anti-parallel, double-helix shape.



**WARNING:**  
CHOKING HAZARD  
small parts. Not for  
children under 3 years.