

Assembly Instructions for LEGO® DNA

Here is how to assemble your LEGO® DNA set. You will also need the spiral booklet “BASIC Student Instructions.” NOTE: These instructions assume that you are assembling one LEGO® set. If you have a classroom pack, please be sure to use the Teacher’s Guide for the best method for assembling multiple DNA sets. DNA class sets need to have matching polarity. *

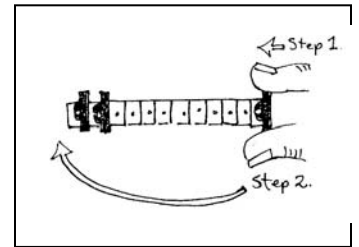
1) Organize the two bags of LEGO elements.

- Carefully open the bags onto a cleared tabletop.
- It will help to have all the same color pieces together.
- Collect the magnets into one long column.

2) Build the magnets into the holders.

The black magnet **holders** cannot be put on all magnets in same way. Half will go on one side of the magnets, and half on the other side.

- Divide the magnet column evenly into two stacks, called column A and column B.
- Push each magnet holder onto the end magnet in column A as shown in the figure. Then move the assembled magnet and holder to the end of the column as shown. This method will verify that all magnets and holders in column A have the same polarity.
- Then do one magnet in column B. This time however, push the magnet onto the holder from the opposite magnetic direction.
- Test the first assembled magnet holder from column B against column A. When these pieces are brought together with their magnets facing each other, they should attract.
- Complete the rest of the column B with magnet holders in the correct orientation.



3) Attach the magnet holders to the colored pieces in the following way

- Attach all yellow 2X2 bricks and all green 2X2 plates to magnet holders from the Column A stack.
- Attach all 2X2 blue bricks and all 2X2 red plates to magnet holders from the Column B stack.
- Note: There should be 6 brown 2X2 plates. The 6 brown plates should be attached to magnet holders from the Column B stack.

4) Check the polarity of the pieces again. When the following pieces are brought together with their magnets facing each other, they should attract.

- Red and yellow attract
- Blue and green attract
- Brown and yellow attract.

5) Follow the Assembly Instructions in “BASIC Student Instructions” (p. 2 & 3). Complete the nucleotides. You should have 12 DNA nucleotides of each type and 6 RNA nucleotides of each type (p. 4 & 5). If you wish to create the advanced DNA set, refer to the “ADVANCED Student Instructions” booklet for Step 6.

*To maintain LEGO® DNA universality, the north pole of a bar magnet should attract column A (above.) The Column A magnets are placed on the Yellow and Green **LEGO®** elements.)