

# Create a DNA Model

## Objective:

To create a model of DNA that is at least 10 base pairs long in order to visually see the structure of DNA

## Instructions:

1. Gather the following materials:
  - 2 pipe cleaners that are the **same** colour (the backbone of the DNA)
  - 4 pipe cleaners that are all **different** colours (the 4 bases) – cut these into **five** pieces each
2. Create your DNA model, making sure that the bases are correctly paired based on their colour
3. On your model, be sure to label...
  - a. The **sugar phosphate backbone**
  - b. An example of each of the 4 bases (**Adenine, Cytosine, Guanine, Thymine**)
  - c. Your names

## Questions:

1. What do the letters DNA stand for?
2. The 'backbone' of the DNA molecule is made up of two alternating components, what are these?
3. What is the base-pair rule?
4. The bases are paired by \_\_\_\_\_ bonds along the axis of the molecule.
5. Draw a basic structure of a nucleotide with its three parts.

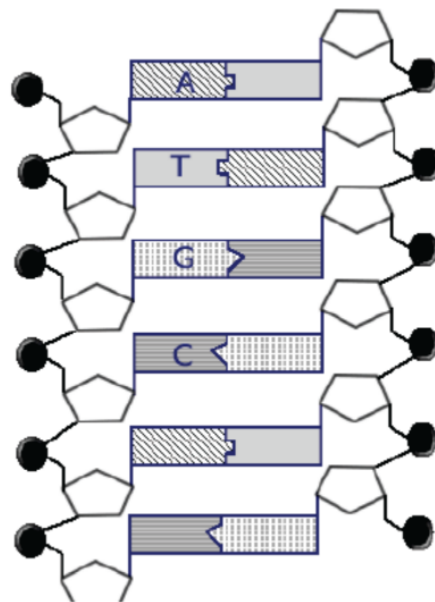
6. Why is DNA described as a double helix?

7. Write the complementary sequence to the following DNA strand:

A A T T C G C C G G T A T T A G A C G T T  
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8. Use the image to complete the following:

- a. Circle the nucleotide
- b. Label the sugar and the phosphate
- c. Label the bases that are not labelled



9. What is the base code for your DNA?

Strand one:

Strand two: