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| **Session 10:** | **The structure of DNA and rna** |

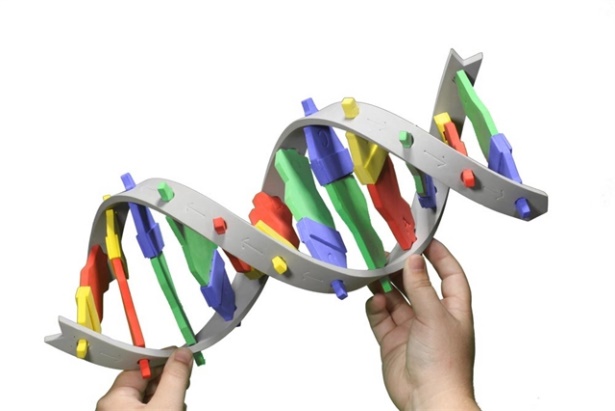
## 

**Skills developed in this session:**

* Making models to understand complex structures

## Assessed criteria

Criterion E: AIE

**Objective**

To understand the structure of DNA and RNA and the process of Transcription and translation by making a model.

**Materials**

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| --- | --- | --- |
| * Piper cleaners of different colours * Scissors * Tape * A laptop |  |  |
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**Method**

Working in pairs

**After reading the notes here below, watch the following clip on how to make a DNA double helix with Pipe cleaners:** [LINK](https://www.youtube.com/watch?v=Knc_CSrZkcU) **IMPORTANT NOTES  
- In the video they use always two the same bases on one side and two on the other side. Try to have all four bases on each side, and randomly ordered.  
- Cut four bases from each pipe cleaner, not 5 as in the video, so they become a bit longer.  
- Instead of using tape to fix the bases to each other, try to fold them around each other.  
- Make sure you have 9 base pairs in total (so 9 complementary bases on each of the strands)**

1. Let the quality of your model be checked by your teacher
2. Take a picture of your model and add it here below:
3. Give each base a specific colour, write them down here:

A: (colour)

T: (colour)

G: (colour)

C: (colour)

1. Watch the following video to understand how the message of DNA (order of the bases) becomes a protein: [[LINK](https://www.youtube.com/watch?v=gG7uCskUOrA)](https://www.youtube.com/watch?v=gG7uCskUOrA)
2. Now choose one of the two strands of your model to be the ‘leading strand’. From this strand you make, with the pipe cleaners, a single RNA strand. Use a different colour if possible for your Uracil. Add the picture here below.
3. Write down the bases of your mRNA:
4. Use the diagram below to figure out which amino acids will be made in the translation of your mRNA strand:

Amino acid 1:  
Amino acid 2:

Amino acid 3:

