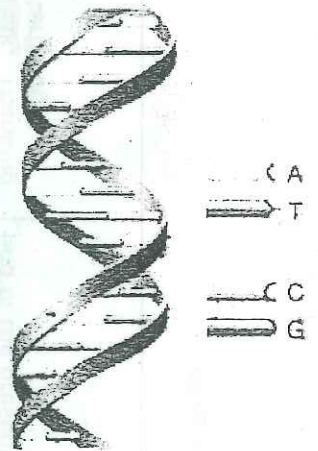


DNA and Heredity

- You have learned that offspring produced through sexual reproduction inherit a Combination of both parents characteristics
- Heredity is the passing on of characteristics from one generation to the next
- A characteristic is a feature such as eye colour or wing shape
- A trait is a variation of a characteristic such as brown versus blue eye colour or long versus round wing shape
- Your DNA is the material that determines how traits are passed from one generation to the next
- When this was discovered, it led to a new question: How could the blueprint for so many different organisms be passed on by what seemed to be the same molecule?
- Solving this problem was one of the greatest scientific achievements and it was 2 scientists by the names of James Watson and Francis Crick
 - o Recall that the DNA molecule has a structure that resembles a twisted ladder, known as a double helix
 - o The sides of the ladder are identical, but the rungs vary
 - Each rung pairs up 2 of the following 4 chemicals: guanine (G), cytosine (C), adenine (A) and thymine (T)



- Guanine can only pair with cytosine, and adenine can only pair with thymine

Eg.



Your genetic code is based on the arrangement of these 4 chemical "letters" into "words"

- o These "words" code for your genes