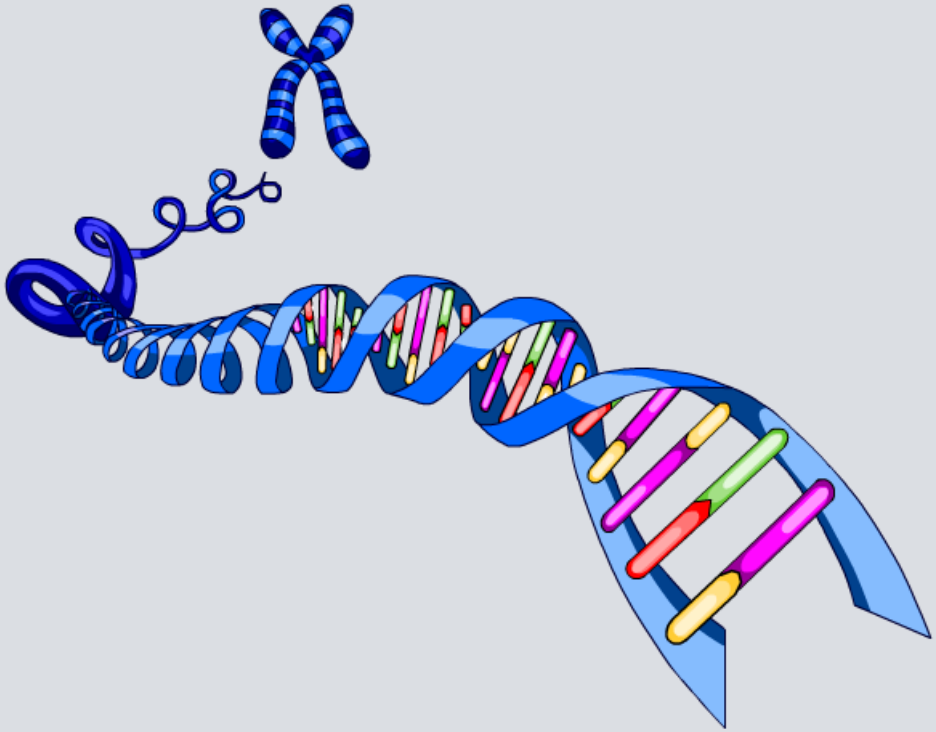
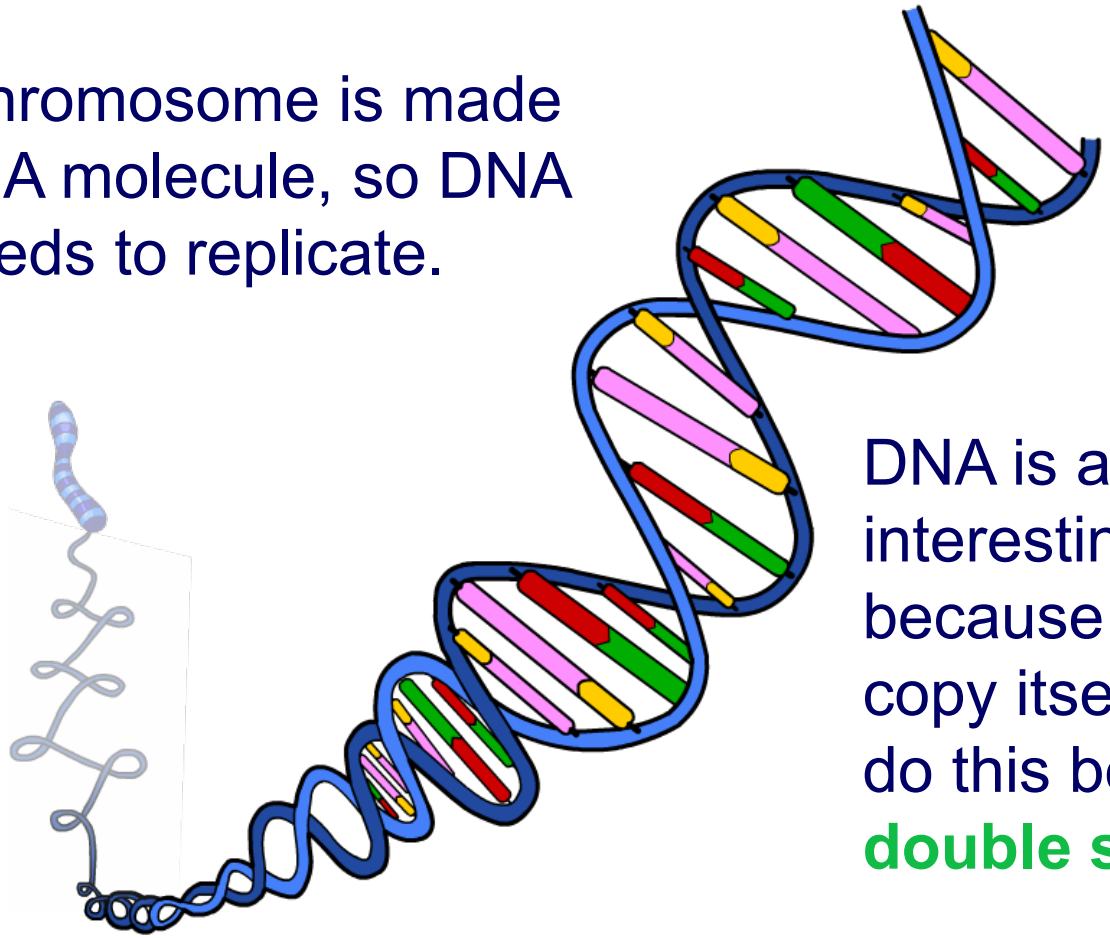
DNA Replication 1



What happens to DNA in cell division?

Before cell division takes place, the chromosomes duplicate. How does this affect DNA?

Each chromosome is made of a DNA molecule, so DNA also needs to replicate.



DNA is a very interesting molecule because it is able to copy itself. It is able to do this because it is **double stranded**.

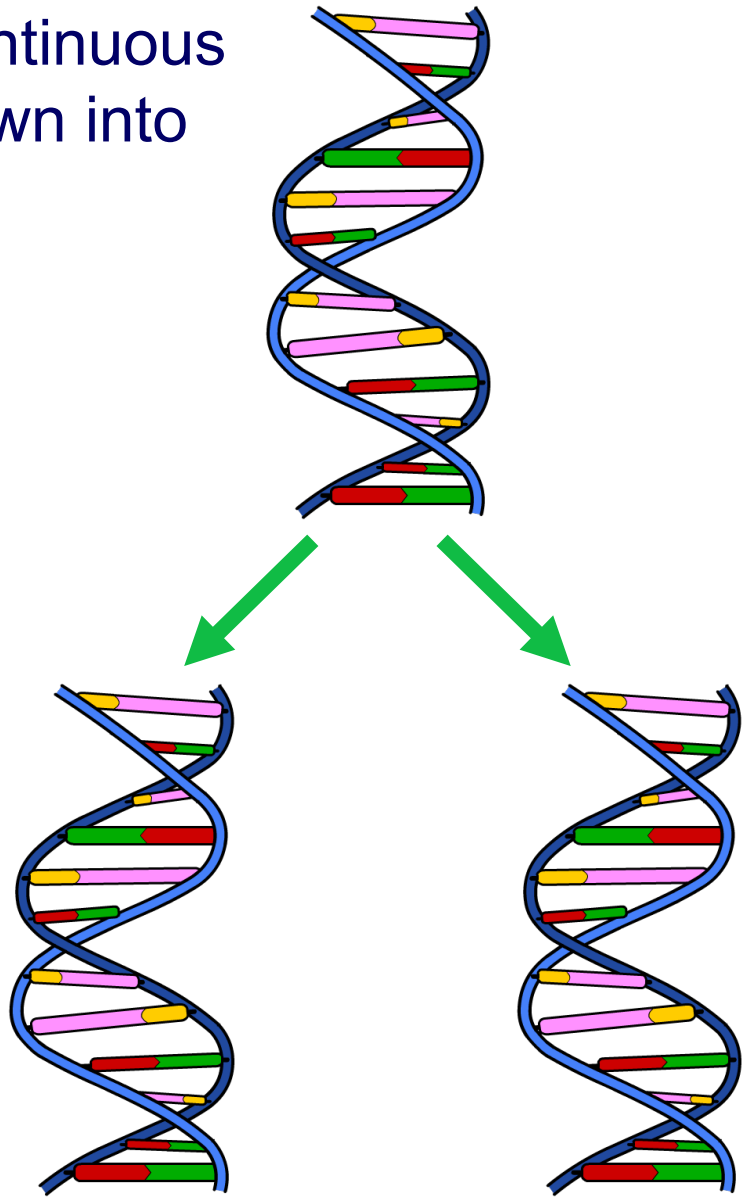
What is the structure of DNA?

Build your own DNA molecule

How does DNA replicate?

The replication of DNA is a continuous process but can be broken down into several stages:

- The DNA helix unwinds.
- The two strands separate.
- New bases bond to each strand, creating two new molecules of DNA.
- Each molecule of DNA winds up again, creating two new helices.



How does DNA replicate?

What happens during DNA replication?

Before a cell divides, its chromosomes need to replicate. This means that DNA needs to replicate too.

Click the chromosome or "**play**" to find out how DNA replicates.

Mutation!

DNA is able to copy itself very accurately – for every 1 billion bases replicated, only 1 will be wrong!

Sometimes, however, mistakes do happen. When this happens, it is called a **mutation**.

Most mutations are harmful and many have no effect, but sometimes a mutation results in a new, beneficial characteristic for the individual.

How important are mutations in natural selection and evolution?