Where is DNA located?

How long is a DNA molecule?

Describe the basic structure of DNA.

How many bases are in one DNA molecule?

How does DNA communicate with other parts of the cell?

Why does an error in DNA often result in defective proteins?

When was DNA discovered?

1. What is a gene?
2. Explain how an error in a gene can cause a genetic defect.
3. What is the difference between an inherited disease and an infectious disease?
4. What is an allele?
5. Describe the difference between heterozygous and homozygous.
6. What is the difference between phenotype and genotype?
7. What is the difference between a dominant allele and a recessive allele?
8. Blood group B is dominant to group O. If a woman who is heterozygous for blood group B has children with a man who is blood group O, what are the possible genotypes of their children?
9. Thalassaemia is a recessive disorder causing defective haemoglobin.
10. Construct a punnet square showing how two unaffected parents could have an affected child.
11. What is the probability that two unaffected parents would have a normal child?
12. Neurofibromatosis is a dominant disorder that causes tumours in the nervous system.
13. If one parent is heterozygous for this disorder and the other is normal, what is the chance that their first child will have this disease?
14. What is the chance that they will have two affected children in a row?
15. Limb-girdle muscular dystrophy is a recessive disorder causing muscle wasting. If a man with this disorder fathers children with a carrier, what is the probability that they will have two normal children in a row?
16. Blood group A is dominant to group O. Explain how it is possible for two parents with blood group A to have children with blood group O.
17. Achondroplasia is a form of dwarfism that is inherited by a dominant allele. If a person is homozygous for this disorder, would both their parents also have had achondroplasia?