Inheritance *Checklist*

What is Inheritance? (* = Credit outcomes)

1. Features which help identify an organism are known as **characteristics**.

2. Characteristics are **inherited** ie. pass from parent to offspring.

3. Characteristics have different forms known as **phenotypes**.

4. Examples of phenotypes are red or white eye colour in fruit flies, tall or dwarf stem size in pea plants and male or female sexes in humans.

5*. A **true breeding** organism, when crossed with another of the same type, always produces offspring with the same type of phenotype.

6. Characteristics are controlled by **genes** carried on **chromosomes** found in the nucleus.

7*. Genes have different forms called **alleles** eg the tongue rolling gene has two alleles - roller and non - roller.

8. Alleles are always present in pairs.

9. One allele is usually **dominant** to the other. The other allele is said to be **recessive**, eg the tongue roller allele (R) is dominant to the tongue non - roller (r).

10. The combination of alleles in an organism is called the **genotype**.

11. Each body cell has **two matching sets** of chromosomes.

12. The number of chromosomes is **reduced to a single set during gamete formation**.

13. **Sex cells** are called gametes.

14. Gamete formation is when **eggs and sperm** or **ovules and pollen grains** form.

15. Each gamete carries **a single set** of chromosomes.

16. Each gamete carries one allele of the gene.

17. At fertilisation, when a male gamete and a female gamete fuse together, the double set of chromosomes is restored.

18. A **family tree or pedigree** shows how alleles of a gene are passed down from parents to offspring. An offspring gets **one** allele from each parent. A parent only passes on **one** allele at a time. These are passed on in the gametes.

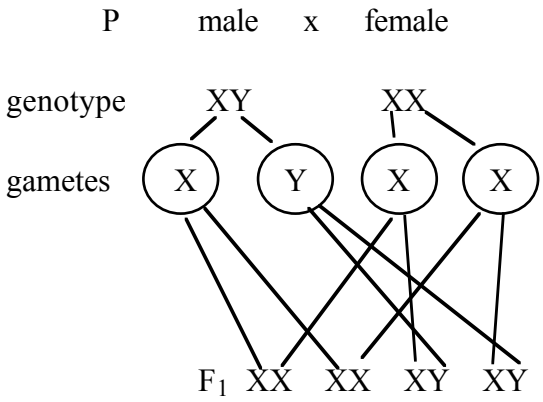
19*. In a **monohybrid cross** one characteristic is studied as it passes from parents (the **P generation**) to the offspring (the **F_1 generation**) and then to their offspring (the **F_2 generation**).

20*. The offspring of a cross can be **predicted** by discovering all the ways that an allele (carried in a gamete) from one parent can join with an allele from another parent. This is done using a **punnet square**.

21. Observed numbers may differ from predicted figures since **fertilisation is a random process**.

22. Genes are carried on chromosomes and the chromosomes are present as pairs. Each one of a pair carries one of the pair of alleles of a gene. Humans have **46 chromosomes** in each body cell. These are present as **two sets** of 23.

23. One pair of chromosomes are called the **sex chromosomes**. Males are **XY** and females are **XX**. Females can only pass on an X chromosome while males can pass on an X or a Y chromosome. This means that the **male determines the sex of the child**.



Equal numbers of males and females.