

Genetics

Reproduction and meiosis

Meiosis

Four daughter cells Half the chromosomes Genetically different

Gametes

Haploid Fuse at fertilisation

Human chromosome numbers

Body cell: 46 Gamete: 23 Zygote: 46

Inheritance

Key terms

Allele Dominant, recessive Homozygous, heterozygous Genotype, phenotype

Monohybrid cross

Punnett square Pedigree 3 : 1 ratio

Sex determination

XX female XY male 50% each

Probability

Ratios Fractions Percentages Carriers: 1 in 4

DNA and the genome

DNA polymer

Nucleotides Double helix Two strands

Nucleotide

Sugar Phosphate group One of four bases

Complementary base pairs

A with T C with G Weak hydrogen bonds

Genome

Entire DNA of an organism

Gene

Section of DNA Codes for a protein

Extracting DNA from fruit

Mash Detergent and salt Filter Cold ethanol

Variation and genome

Multiple genes

Most features

Genetic variation

Mutation Sexual reproduction

Environmental variation

Acquired characteristics

Mutations

Most no effect Some small effect Rarely significant

Human Genome Project

Medical uses Testing Treatments