

Reproduction and meiosis

What is the role of meiotic cell division?

Reproduction and meiosis

How many daughter cells does meiosis produce, and how many chromosomes does each have?

Reproduction and meiosis

How many chromosomes are in a human body cell and a human gamete?

Reproduction and meiosis

Are the gametes made by meiosis identical to each other?

DNA and the genome

DNA is a polymer made up of what units?

DNA and the genome

What are the parts of a nucleotide?

DNA and the genome

What shape is a DNA molecule?

DNA and the genome

What joins the two strands of DNA together?

Four daughter cells, each with half the number of chromosomes of the parent cell.

To produce genetically different haploid gametes.

No. They are genetically different.

46 in a body cell and 23 in a gamete.

A sugar and a phosphate group, with one of four different bases attached to the sugar.

Nucleotides.

Complementary base pairs joined by weak hydrogen bonds.

Two strands coiled to form a double helix.

DNA and the genome

Which bases pair together in DNA?

DNA and the genome

Define the genome.

DNA and the genome

Define a gene.

DNA and the genome

Why is detergent used when extracting DNA from fruit?

DNA and the genome

Why is ice-cold ethanol added when extracting DNA?

DNA and the genome

Why is the mashed fruit mixture filtered?

Inheritance

Why do individuals have different inherited characteristics?

Inheritance

Define a chromosome.

The entire DNA of an organism.

A with T, and C with G.

It breaks down the cell membranes to release the DNA.

A section of a DNA molecule that codes for a specific protein.

To remove solid pieces of cell, leaving the DNA in the filtrate.

DNA is not soluble in it, so it comes out of solution as white, stringy strands.

A long molecule of DNA in the nucleus that carries many genes.

Because they inherit different combinations of alleles.

Inheritance

Define an allele.

Inheritance

**Dominant allele or recessive allele:
which is expressed when only one
copy is present?**

Inheritance

**Homozygous or heterozygous: which
has two different alleles of a gene?**

Inheritance

**What is the difference between
genotype and phenotype?**

Inheritance

What are a gamete and a zygote?

Inheritance

**What ratio of phenotypes is expected
from $Tt \times Tt$ (T dominant)?**

Inheritance

**Two parents without a characteristic
have a child with it. What does this
show?**

Inheritance

**Which sex chromosomes do human
males and females have?**

The dominant allele.

A different version of the same gene.

Genotype is the alleles an organism has.
Phenotype is the characteristic that is expressed.

Heterozygous. Homozygous means two identical alleles.

3 showing the dominant characteristic : 1 showing the recessive.

A gamete is a sex cell with half the chromosomes. A zygote is the cell formed when two gametes fuse.

Males XY, females XX.

The characteristic is recessive and both parents are carriers.

Inheritance

What is the probability of a baby being male or female?

Inheritance

How can the outcome of a cross be expressed?

Inheritance

Two carriers (Ff) have a child. What is the probability that it is ff?

Variation, mutations and the Human Genome Project

Do most features depend on one gene or many?

Variation, mutations and the Human Genome Project

What is genetic variation?

Variation, mutations and the Human Genome Project

What is environmental variation?

Variation, mutations and the Human Genome Project

Continuous or discontinuous variation: which has distinct categories?

Variation, mutations and the Human Genome Project

How do you calculate an arithmetic mean?

As a ratio, a probability or a percentage.

50% (a 1 : 1 ratio). The sperm decides, as it carries an X or a Y.

Most phenotypic features are the result of multiple genes rather than single gene inheritance.

1/4, 0.25 or 25%.

Different characteristics caused by an organism's environment (acquired characteristics).

Different characteristics as a result of mutation and sexual reproduction.

Add all the values and divide by the number of values.

Discontinuous. Continuous variation gives a range of values, such as height.

Variation, mutations and the Human Genome Project

What was the Human Genome Project?

Variation, mutations and the Human Genome Project

Give two medical applications of the Human Genome Project.

Variation, mutations and the Human Genome Project

How does extensive genetic variation in a population arise?

Variation, mutations and the Human Genome Project

What effects do mutations have on the phenotype?

Finding genes linked to inherited disorders for testing and risk prediction, and developing treatments matched to genes.

A project that mapped the human genome, identifying the sequence of bases in human DNA.

Most have no effect, some have a small effect, and rarely a single mutation significantly affects the phenotype.

Through mutations.