6.1 Chromosomes & Meiosis

**Gametes have half the number of chromosomes that body cells have.**

You have \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

- Body cells are also called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells.

- \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells develop into gametes.

-Germ cells are located in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

-Gametes are \_\_\_\_\_\_\_\_\_ cells: \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

-Gametes have \_\_\_\_\_\_\_\_\_ that can be passed to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Your cells have autosomes and sex chromosomes.

Your \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ have \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pairs of chromosomes have the same structure.

- For \_\_\_\_\_\_\_\_\_\_ homologous pair, \_\_\_ chromosome comes from \_\_\_\_\_\_\_ parent\*\*

* Chromosome pairs 1-22 are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

\* 1 pair: Sex chromosomes, \_\_ and \_\_, determine \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in mammals

Body cells are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; gametes are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ btw egg & sperm occurs in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_reproduction.

- Diploid (\_\_\_\_\_) cells have two copies of every chromosome. DRAW:

-Body cells are diploid.

-\_\_\_\_\_\_\_\_\_\_\_\_ the chromosomes come from each parent.

- Haploid (*\_\_\_*) cells have one copy of every chromosome. DRAW:

* + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are haploid.
  + Gametes have \_\_\_\_\_ autosomes and \_\_ sex chromosome.
* Chromosome # must be maintained in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Many plants have \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ two copies of each chromosome.

Mitosis & meiosis are types of nuclear division that make different types of cells.

- Mitosis makes more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells DRAW:

Meiosis makes \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells \_\_\_\_\_\_\_\_\_\_ diploid cells. DRAW:

* + Meiosis occurs in \_\_\_\_\_\_\_ cells.
  + Meiosis produces \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

6.2 **During meiosis, diploid cells undergo two cell divisions that result in haploid cells.**

Cells go through \_\_\_\_\_\_\_\_\_ rounds of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* Meiosis reduces \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_ & creates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Meiosis I and Meiosis II each have \_\_\_\_\_\_\_ phases, similar to those in mitosis.
  + \_\_\_\_\_\_\_\_\_\_ of homologous chromosomes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in meiosis \_\_.
  + Homologous chromosomes are similar but \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in meiosis \_\_\_\_.
  + Sister chromatids are copies of the \_\_\_\_\_\_\_\_\_ chromosome. DRAW:

Meiosis I occurs after DNA has been \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* Meiosis I divides \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ chromosomes in \_\_\_ phases.

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* Meiosis II divides \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in \_\_\_ phases.
* DNA is \_\_\_\_\_\_\_\_\_ replicated between meiosis I and meiosis II.

DRAW:

Meiosis differs from mitosis in significant ways.

* + Meiosis has two cell divisions while mitosis has one.
  + In mitosis, homologous chromosomes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pair up.
  + Meiosis results in \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells; mitosis results in \_\_\_\_\_\_\_\_\_\_\_\_ cells.

**Haploid cells develop into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gametes. DRAW:**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the production of gametes.
* Gametogenesis differs between females and males.
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_ become streamlined and motile.
  + Sperm primarily contribute \_\_\_\_\_\_\_\_\_\_ to an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + Eggs contribute \_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to an embryo.
  + During meiosis, the egg gets most of the contents; the other cells form \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

6.3 **Mendel’s research showed that traits are inherited as discrete units.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ laid the groundwork for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

-Traits are distinguishing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

-Genetics is the study of biological \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ patterns and \_\_\_\_\_\_\_\_\_\_\_\_.

-Gregor Mendel showed that traits are inherited as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_.

-Many in Mendel’s day thought traits were \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Mendel’s data revealed patterns of inheritance.

- Mendel made three key decisions in his experiments.

-use of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plants

-control over \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-observation of seven “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_” \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mendel used \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to fertilize selected pea plants.

-\_\_\_\_ generation crossed to produce \_\_\_\_\_ generation

- interrupted/controlled the self-pollination process by removing the \_\_\_\_\_\_\_\_\_\_ flower parts

- then fertilized the female part, or \_\_\_\_\_\_\_\_\_\_\_\_\_, with \_\_\_\_\_\_\_\_\_\_\_\_\_ from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pea plant.

Mendel allowed the resulting plants to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* + Among the \_\_\_\_\_ generation, \_\_\_\_\_\_ plants had \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ flowers
  + F1 plants are \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Among the \_\_\_\_\_\_ generation, some plants had \_\_\_\_\_\_\_\_\_\_\_\_\_\_ flowers and some had \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DRAW

\*\*What is a monohybrid cross?

\*\*Mendel observed patterns in the first and second generations of his crosses.

Mendel drew 3 important conclusions.

1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ are inherited as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_.

2) Organisms inherit \_\_\_\_ copies of each \_\_\_\_\_\_\_\_\_, one from each \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

- 2 copies of the same gene are referred to as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

- If they code the same, aka \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

- If they code different, aka \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3) The two copies \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ during \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

\*\*Together 2 & 3 are called the “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”.

6.4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Genes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ proteins that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ range of traits.

The same gene can have many versions.

-A gene is a piece of DNA that directs a cell to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

-Each gene has a \_\_\_\_\_\_\_\_\_\_\_\_\_, a specific position on a homologous pair. DRAW

An \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = any alternative form of a gene at a specific chromosome locus.

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ describes \_\_\_ alleles that are the same at a specific \_\_\_\_\_\_\_\_, and are thus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and code for the \_\_\_\_\_\_\_\_\_\_\_\_ trait.

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ describes 2 \_\_\_\_\_\_\_\_\_\_ that are different at a specific locus, and are thus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and code for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ trait.

Genes influence the development of traits.

- All of an organism’s genetic material is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ refers to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_ a specific set of \_\_\_\_\_\_\_\_\_\_\_.
* A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a trait.

Alleles can be represented using \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* + A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is expressed as a phenotype when at least \_\_\_\_\_\_ allele is dominant.
  + A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ allele is expressed as a phenotype \_\_\_\_\_\_\_\_\_ when \_\_\_\_\_\_\_\_ copies are present.

Dominant alleles are represented by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ letters; recessive alleles by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ letters

* \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_zygous \_\_\_\_\_\_\_\_\_\_inant and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_zygous genotypes yield a \_\_\_\_\_\_\_\_inant \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occur in a range and \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ follow simple dominant-recessive patterns.

6.5 **The inheritance of traits follows the rules of probability.**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ squares illustrate genetic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* The Punnett square is a grid system for predicting \_\_\_\_\_\_\_ possible \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(look at pic: …possible genotypes of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)\_ **DRAW**
  + The \_\_\_\_\_\_\_\_\_\_ represent the possible gametes of \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + The boxes show the possible genotypes of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* The Punnett square yields the \_\_\_\_\_\_\_\_\_\_\_ of possible \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + Genotype = actual \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phenotype = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A monohybrid cross involves \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_.

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ crosses examine the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of only one specific trait.
  + 3 possibilities
    - \_\_\_\_\_\_\_\_\_zygous \_\_\_\_\_\_inant + \_\_\_\_\_\_\_\_zygous \_\_\_\_\_\_essive = all \_\_\_\_\_\_\_\_\_\_\_\_\_\_zygous,, thus all \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ phenotype

**DRAW**

* + - \_\_\_\_\_\_\_\_\_\_\_\_\_zygous + \_\_\_\_\_\_\_\_\_\_\_\_\_zygous = \_\_\_:\_\_\_:\_\_\_ \_\_\_\_\_\_\_\_\_zygous \_\_\_\_\_inant: \_\_\_\_\_\_\_\_\_zygous: \_\_\_\_\_\_\_\_zygous \_\_\_\_\_essive, thus \_\_\_:\_\_\_ \_\_\_\_inant:\_\_\_\_essive phenotype

**DRAW**

* + - \_\_\_\_\_\_\_\_\_\_\_zygous +\_\_\_\_\_\_\_\_\_zygous \_\_\_\_\_essive + \_\_:\_\_ \_\_\_\_\_\_\_\_\_\_\_zygous: \_\_\_\_\_\_\_zygous recessive; thus \_\_:\_\_ \_\_\_\_\_\_inant:\_\_\_\_\_\_essive

**DRAW**

A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a cross between an organism (1) with an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_type and an organism (2) with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_type.

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A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cross involves \_\_\_\_\_\_\_\_ traits.

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ dihybrid crosses with **2** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plants yielded a \_\_\_:\_\_\_:\_\_\_:\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_typic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Mendel’s dihybrid crosses led to his second law, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* The law of independent assortment states that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Heredity patterns can be calculated with probability.

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the likelihood that something \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Probability predicts an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, not an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ number of occurrences.
* Probability = number of ways a specific event \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_

number of \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ outcomes

* Probability applies to \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ such as meiosis and fertilization.

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6.6 **Independent assortment and crossing over during meiosis result in genetic diversity.**

Sexual reproduction creates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_.

Sexual reproduction creates unique combination of genes.

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of chromosomes in meiosis

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fertilization of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Unique phenotypes may give a reproductive \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to some organisms.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ during \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ increases \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Crossing over is the exchange of chromosome \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

-occurs during \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_

-results in new \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_

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* Chromosomes contain many \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ apart two genes are located on a chromosome, the more likely they are to be separated by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_.
  + Genes located \_\_\_\_\_\_\_\_\_\_\_ together on a chromosome tend to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ together, which is called genetic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Genetic linkage allows the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between two genes to be calculated.