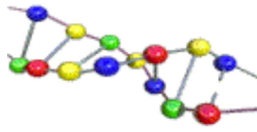


## Introduction to Genetic Algorithms



[Main page](#)  
[Introduction](#)  
[Biological Background](#)  
[Search Space](#)  
[Genetic Algorithm](#)  
[GA Operators](#)  
[GA Example \(1D func.\)](#)  
[Parameters of GA](#)  
[GA Example \(2D func.\)](#)  
[Selection](#)  
[Encoding](#)  
[Crossover and Mutation](#)  
[GA Example \(TSP\)](#)  
[Recommendations](#)  
[Other Resources](#)

[Browser Requirements](#)  
[FAQ](#)  
[About](#)  
[Other tutorials](#)

## II. Biological Background

---

### Chromosome

All living organisms consist of cells. In each cell there is the same set of **chromosomes**. Chromosomes are strings of [DNA](#) and serves as a model for the whole organism. A chromosome consist of **genes**, blocks of DNA. Each gene encodes a particular protein. Basically can be said, that each gene encodes a **trait**, for example color of eyes. Possible settings for a trait (e.g. blue, brown) are called **alleles**. Each gene has its own position in the chromosome. This position is called **locus**.

Complete set of genetic material (all chromosomes) is called **genome**. Particular set of genes in genome is called **genotype**. The genotype is with later development after birth base for the organism's **phenotype**, its physical and mental characteristics, such as eye color, intelligence etc.

---

### Reproduction

During reproduction, first occurs **recombination** (or **crossover**). Genes from parents form in some way the whole new chromosome. The new created offspring can then be mutated. **Mutation** means, that the elements of DNA are a bit changed. This changes are mainly caused by errors in copying genes from parents.

The **fitness** of an organism is measured by success of the organism in its life.

**Sourcing Basic Organic Chemicals?**

You Need The Leading Global B2B Platform



**Alibaba.com**  
Global trade starts here™

[Start Now ▶](#)

---

**Previous**

**Next**

---

[\(c\) Marek Obitko, 1998](#) - [Terms of use](#)