



Educational Topic

Molecular Biologist

Related Job Titles:

Biologist, Life Scientist, Medical Scientist, Geneticist, Biochemist, Physiologist

Job Description:

Molecular Biologists study how genes in cells cause biological characteristics and function in organisms. They study the detailed genetic make-up of plants, animals, humans, bacteria, and fungi. They study nucleic acids (DNA and RNA) for medical testing for disease-causing organisms and to test for inherited human genetic disorders. Molecular biologists are also important in industry for developing new lines of plants, animals and micro-organisms, or aid in the development of new medicines. Molecular biologists often work long hours in traditional environments such as laboratories, offices, or universities where they conduct research and a variety of experiments, write and publish papers, or teach.

Interests / Abilities:

- Do you like to examine things under a microscope?
- Are you good at observing and then reporting what you see?
- Can you clearly communicate your ideas to others?
- Do you like to help other people?
- Do you pay attention to details and enjoy working accurately?
- Are you able to concentrate or work continuously for many hours?

Suggested School Subjects / Courses:

- Biology (biochemistry, genetics, microbiology, immunology)
- Chemistry (organic, physical, inorganic)
- Mathematics
- Laboratory research and fieldwork
- Writing and speech

Education / Training Needed:

The minimum education required for this position is a bachelor's degree in Biology, Microbiology, Biochemistry, or related field from an accredited college or university. This level general does not involve research and generally involves assisting others in testing and observation. A master's degree is required for applied research and managerial positions. A Ph.D. degree is usually necessary for independent research and several years of research and post-doctoral work are generally required.

Areas of expertise:

- *Genetics*: understand the inheritance of genetic diseases and provide counseling to families
- *Criminology*: provide law enforcement with evidence (such as DNA) to help solve crimes
- *Agriculture*: manipulate genetic makeup to breed new crop plants or livestock
- *Pharmaceutical*: study of molecular structure to design new medicines

