

Abstract

The work is focused on creating new teaching materials to support the teaching topics of nucleic acids in secondary schools, specifically in high schools.

The theoretical part of the work contains an analysis of the topic in curricular documents shaping the form of teaching in the Czech Republic. Subsequently, an analysis of the treatment of the topic in secondary school textbooks and other study materials dealing with the biochemistry of nucleic acids is included. This analysis reveals that most of the available materials do not offer many ways to activate students and did not focus on developing their key competences.

Based on these findings, new materials were developed to improve students' experience and acquired skills. Materials include didactic games, three worksheets containing problem tasks, and 3D visualizations of nucleic acids. These new materials are intended as an introduction to the issue of nucleic acids and are intended for teaching chemistry, biology, and science-oriented seminars.