

The diploma thesis is divided into five chapters. The first chapter is devoted to the history and usage of pendulums with focus on the development of measurement of time and gravitational acceleration. The second chapter deals with the concept of pendulum from a theoretical perspective at all levels of the Czech educational system, including a research in textbooks, collection of questions and problems, and scientific articles. In the third chapter, the results of the research of sources of inspiration for simple real-life experiments, applets and simulations, and laboratory work are presented. The fourth chapter is focused on the theoretical background of the four selected models of pendulums, and the last chapter is devoted to simple experiments with these selected models. For each experiment, a videorecording is available on the enclosed DVD. This thesis is suitable for all physics teachers, as well as for students of teaching physics. However, it may also serve as a motivation for students in optional courses of high school physics.