



Spectrum Journal of Innovation, Reforms and Development

Volume 14, April, 2023

ISSN (E): 2751-1731

Website: www.sjird.journalspark.org

**IN GENERAL EDUCATION SCHOOLS, PRACTICAL AND LABORATORY
EXERCISES IN 8TH GRADE PHYSICS ARE CARRIED OUT USING THE
"CROCODILE PHYSICS" PROGRAM**

S. Davletniyazov

G. Seytmuratova

Assistant of the Department of Teaching
Methods of Physics at NDPI named after Ajiniyaz

ABSTRACT

This article discusses the opportunities for practical and laboratory activities in teaching 7th grade physics using the Crocodile Physics program.

Keywords: Crocodile Physics program, virtual laboratory work, innovative technology, measuring electric circuit current and resistance in various parts of it during laboratory work."

Introduction

The essence of the reforms being implemented in the field of education in our Republic is to computerize all areas and processes of the educational system, introduce modern pedagogical and information communication technologies into the educational process, improve its scientific and theoretical foundations, and increase the practical orientation. At present, the development of the scientific field is rapidly progressing, modern information and communication technologies are widely used, and the knowledge is being constantly updated. Therefore, it is necessary to provide students with regular and independent access to knowledge, as well as to ensure their active participation in the educational process.

MAIN PART

Crocodile physics is a powerful simulator that allows modeling of physics processes and creating and exploring experiments related to mechanics, electric circuits, optics, and wave phenomena in physics. This program can be used to organize interactive lessons through an interactive whiteboard and can also be used as independent work on a personal computer. This powerful program provides the ability to observe physical phenomena, conduct experiments, and model processes of various levels of complexity.

This program has been continuously developed by Crocodile Clips Ltd since 1994. It is widely used in creating virtual laboratory work and conducting demonstration experiments. This program has brought a true revolutionary change in the education system.

This program has been continuously developed by Crocodile Clips Ltd since 1994. It is widely used in creating virtual laboratory work and conducting demonstration experiments. This program has brought a true revolutionary change in the education system.



The program allows working with all areas of physics, providing the ability to deeply understand processes.

RESULTS AND DISCUSSIONS

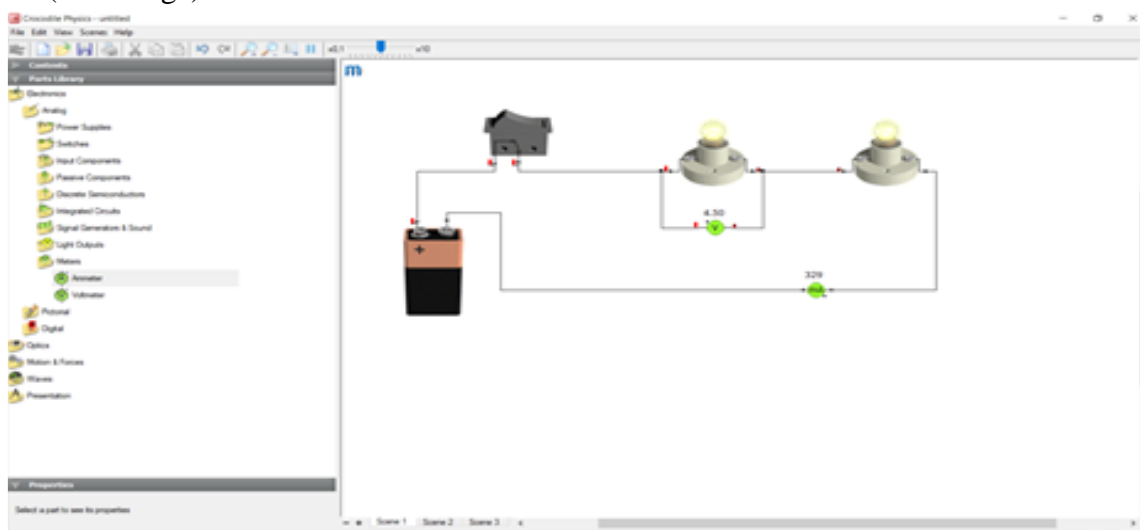
Let's look at the method of conducting the laboratory work on the topic "Collecting an electric circuit, measuring voltage and current in its various parts" for the 8th grade.

The purpose of the laboratory work is to learn how to collect an electric circuit, measure voltage and current in its various parts.

The necessary equipment includes a power source, an ammeter, a voltmeter, two bulbs, wires, and connectors.

To carry out this experiment, we will use the "Crocodile Physics" computer program. This program is given entirely in English, so students need to have computer and English language skills. To start the laboratory work, we first click on the "New model" - "New project" button in the program. Then, we go to the "Parts Library" section and select "Electronics". From the "Analog" section, we select the diagram given in the laboratory work and draw it (Figure 1).

We take the necessary results and fill in the table provided in the laboratory work. Through the program's uniqueness, we learn to apply the knowledge and skills we have gained in performing practical tasks. Using the program, we select the necessary components from the "Pictorial" section and assemble them using the diagram provided for carrying out the practical task. (2nd image)



| N | voltage status (V) | 1-lamp | | 2-lamp | |
|---|--------------------|-----------|------------|-----------|------------|
| | | U_1 (V) | I_1 (mA) | U_2 (V) | I_2 (mA) |
| 1 | 4 | 2 | 20 | 2 | 20 |
| 2 | 6 | 3 | 30 | 3 | 30 |
| 3 | 8 | 4 | 40 | 4 | 40 |

Advantages of the program:

The possibility for students to perform laboratory work at home;

Ensuring the safety of students;

Providing significant assistance in improving students' computer and English language skills;



Providing the opportunity to apply theoretical knowledge in physics and eliminating errors.

CONCLUSION

In summary, when performing the laboratory work mentioned above, we found that it is possible to further apply the knowledge gained from physics using the skills and knowledge obtained from computer science and English language. This type of education provides practical methods to enhance the knowledge and logical thinking skills of students, and helps to develop the education field.

REFERENCES:

- 1.Ergashev A.I., Suyarov K.T., G'afurov N.B., Choriyev R.Q. Methodological manual for conducting laboratory work in physics in secondary schools. - Tashkent: Talqin, 2003.
- 2.P.Q. Habibullayev, A. Boydedayev, and B. Habibullayev. FIZIKA: a textbook for the 8th grade of general secondary schools. Tashkent, 2019.
- 3.Crocodile Physics computer programm.