KONDLE VENTURES Ltd.
EDUCATIONAL SYSTEMS

SPK100
Student Physics

Mobile Science Laboratory

The SPK100 Student's lab work kits for the study of Physics are part of the P100 Mobile Science Laboratory, dedicated for **student activities only**, where the P100 is dedicated to the teacher activities.
The set of SPK100 includes the following:

1. The Student Mobile Trolley base.
2. The Set of Experimental Laboratory Equipment for students.

The SPK100 equipment is designed for students to conduct experiments, laboratory work in Physics. Complex includes laboratory equipment, instruments, digital instrumentation, interactive learning resources, multimedia and test materials, interrelated and complementary to each other for the experiments and observations on the science didactic program. The student and teacher MSL application platform operates as **ONE uniform** interconnected platform and is a part of **ONE methodological structure** of teaching sciences. The complex is stored in separate trolley which accompanies the MSL cart. The complex ensures the safety of students when working with it.
The **PCB103 application** interconnects the Teacher with the Students in a uniform platform.

Theory presentations with interfaces to any Student Response system or Interactive board, Teacher **Demonstrations**, Lab **Simulations**, **Virtual** measurement simulations, **Data acquisition** applications, **Multimedia** presentations, Student experiments, Student activities and student quizzes and tests jointly provide the most modern platform in Science teaching.
The **PCB103 application** also includes various utilities as **Glossary**, **Instructions** for different devices in the mobile cart, the **Inventory** of the Mobile Lab, the **Software Applications** which are used during the teaching process.

All experiments are conducted either with the conventional measuring devices or with the use of data acquisition system including a variety of sensors and state of the art data loggers. This Digital lab is provided with the separate kits in order for the students to enter in the Digital laboratory Technology. Force, pressure, temperature electromagnetic field, voltage, acceleration, current, light, sound photo gates are some of the sensors provided to the students to conduct their experiments. More than 140 teacher and student activities are provided by the system.

Every subsection of the PCB103 application covers a variety of subjects accompanied with relevant experiments, some to be conducted by the Teacher (**demonstrations**) and others by the Student (**activities**) as well as theoretical presentations for each concerned subject. However, only the Student activities can be done with the SPK100 kits' equipment. All the required equipment for the experiments are granted by the SPK100 kits.

If school requires more than 3 sets of Physics MSL Student kits, they are provided in sets of 2 and are installed in the ST100 laboratory trolley.

PHYSICS MSL STUDENT KITS	*
PS2021 Student Mechanics	3
DLS301 Digital laboratory set	3
PS2031 Student Electromagnetism	3
PS2041 Student Optics	3

** Note: Quantity of sets per MSL cart*

The **Didactic application** also come with **new add-on modules** such as:

1. **Classroom management system.**
2. **Student response system** which supports Android Pad and Smart phone user interface.
3. **Classroom Performance** Evaluation and Statistics.
4. **Teacher** add-on content **Link Interface.**
5. **Voice file** add-on **Annotation** utility.

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SPK100 for Student Physics

Mobile Science Laboratory

The SPK100 Physics kits are dedicated exclusively for student lab work, are located in the P100 MSL (3 sets) and are also driven by the PCB103 didactic application which is firstly divided into topics, each topic is divided into sections and each section to subsection. In each subsection you can find the **Presentations**, related (wherever available) **Multimedia or Videos** and the **Simulations**. Furthermore, there are the **Activities** for the students.
Inside the menu of PCB103 application you can find:

The **Inventory** which contains all the materials from the specific kits that are used in each lesson divided.

The **Glossary** which contains an alphabetical keyboard and by pressing each letter you can find word-meanings and terminology.

The **Application** which has two subunits: the **Simulators** (simulations of experiments and phenomena that are carried out with the help of either the teacher or the student), the **Multimedia** (videos showing a relevant phenomenon in some lessons).

The **Science Support** module which is also divided in two subunits: the **Curriculum** (where there are all the demonstrations and the activities numbered with links that take you to the experiment, and is also mentioned the section or subsection it belongs to) and the electronic **Manuals** (where there are some manuals for the materials used in the experiments which are seen as necessary). The supplied kits and the facilities of the P100 MSL provide all the equipment and support to implement the pedagogical processes in the subject of Physics.

Analytically, the **Physics** topics, sections and subsections supported by the SPK100 kits and the PCB103 application are presented below:

Mechanics
Dynamics - Kinetics
Energy
Work - Energy - Waves - Radiation
Matter & Thermo
Measurements - State of Matter - Thermodynamics
Electromagnetism
Static - Dynamic - Magnetism - Electromagnetism
Optics
Properties of Light - Light phenomena