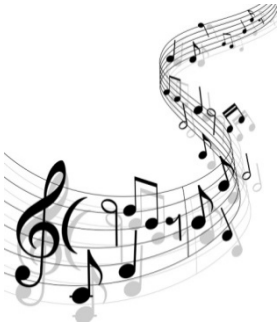
MULTICENTER

MultiCenter
Training Lab



About SES

An Edtech industry leader and innovator**, SES Scientific Educational Systems**, goes above and beyond to supply educators and learners with the best educational systems, including **Neulog, Degem Systems, MultiCenter** and **MagiClass.**

Renowned for their ability to cater to numerous fields, sectors and segments, SES systems spread across a wide spectrum, offering unique solutions in the fields of **electronics, microcontrollers, telecommunication, autotronics, mechatronics, pneumatics, hydraulics, CNC machines, refrigeration and air-conditioning, green energy, computerized systems, science, robotics, logger sensors and STEM.**

Each proprietary SES system and device is perfectly designed and manufactured from the highest quality materials in accordance with all safety requirements and regulations. SES is a quality assured firm with the certification of ISO-9001:2015.

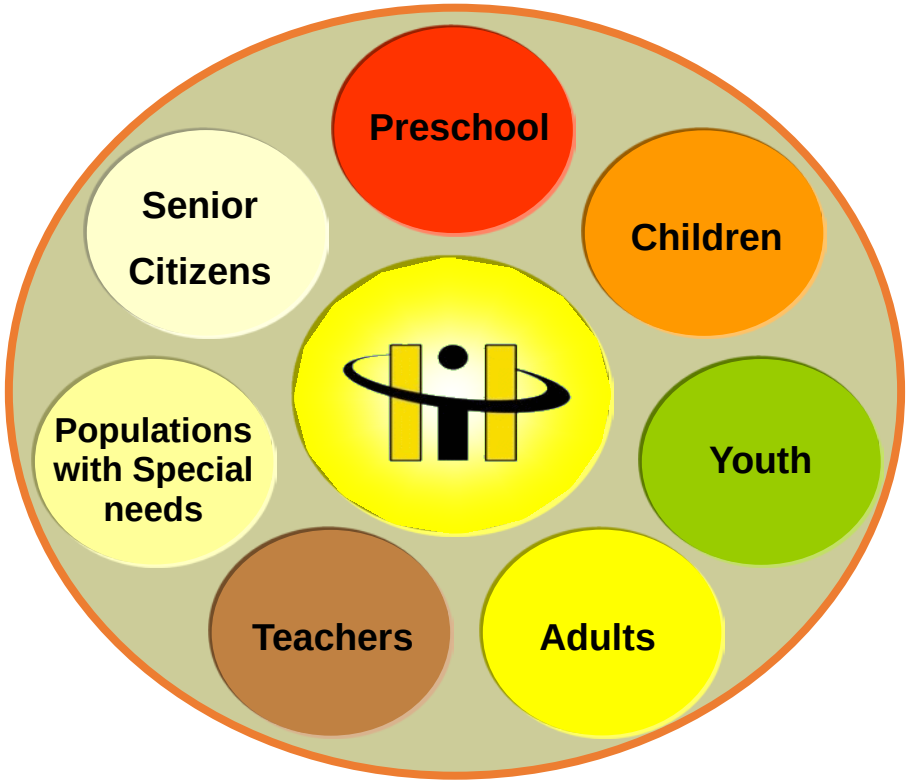
SES solutions are used in over 50 countries worldwide by professional developers for high-level technological commercial products and both governmental and private institutions covering educational programs for universities, colleges, vocational training centers and schools, high schools, junior high schools and primary schools.

The MultiCenter

The MultiCenter is an interactive science and technology learning center.

The MultiCenter offers a variety of selected Interactive Learning Environments, with a large range of topics such as **Science, Technology, Graphic Design, Digital Music, Robotics, Computer Technologies** and much more.

Multicenters run a wide range of courses, classes and activities for all sectors of society, cultures, different socio-economic groups and different age groups – from very young children to senior citizens and training teachers.



The MultiCenter – How it works?

All the training systems and workstations in the Multicenter are independent and aimed for self-practice.

Every training system includes a computer, a courseware, manual and guiding papers and they cover many experiments, activities and the theory behind.

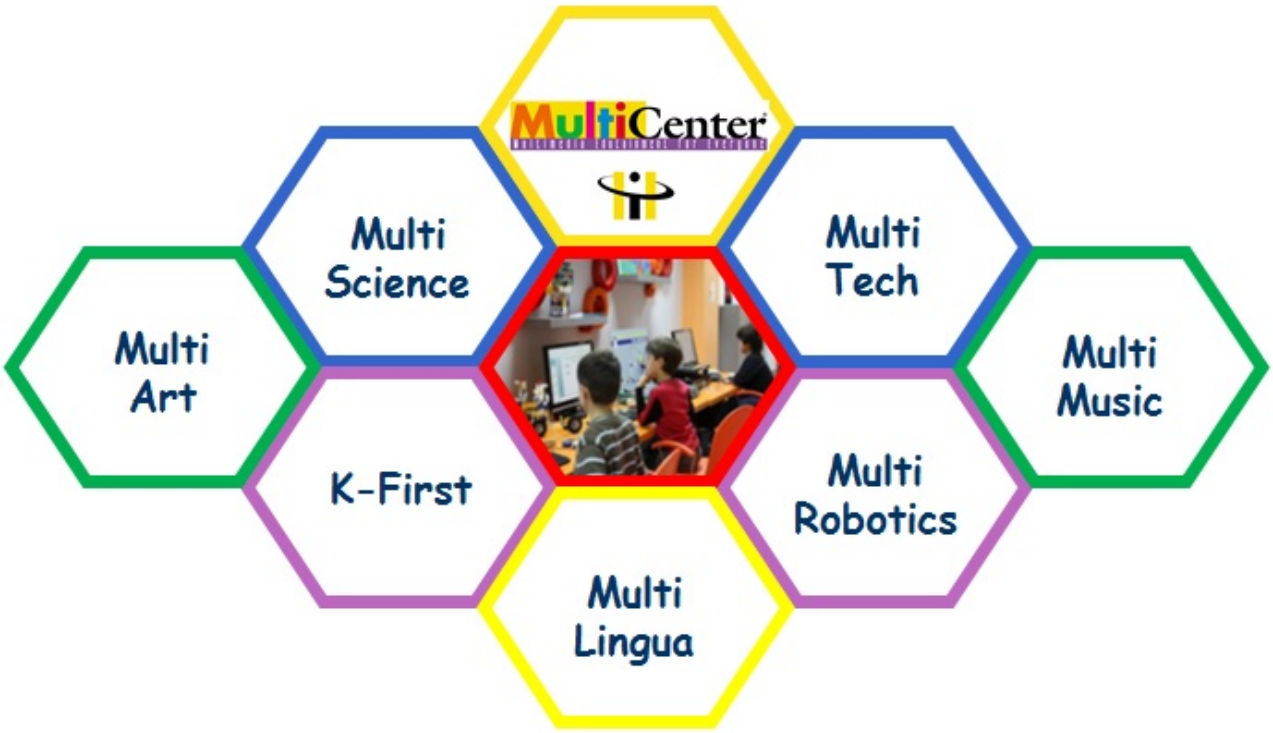
The trainee selects the workstation and the activity and starts working. There is not a mandatory study order, although there is a recommended study order.

The guide in the Multicenter is for help and guiding.

The Multicenter can be a place with the best real quality time for grandparents and their grandchildren.

The MultiCenter content

The syllabus of the MultiCenter consists of large variety of training systems, courses and activities in 8 learning environments:



The Multicenter configuration is flexible and can be created according to the target population type and ages, budget and the Multicenter space.

K-First (age group 5-8)

K-First is a computerized learning environment for children ages 5-8.

Children enrich their basic knowledge in math, science, technology, nature, Arts, Road safety, transportation and much more.

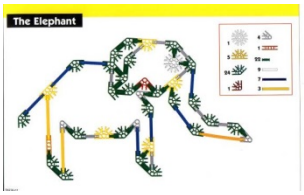
Cognitive and motor skills are developed as they work through activities that stimulate creativity, curiosity, and problem-solving abilities.

Multi-Robotics (age group 5+)

Multi-Robotics is aimed to improve and to develop the knowledge and the skills of the young pupils in primary school through continuous experience with fun.

Multi-Robotics is Machines and Mechanisms kit with K'NEX components. The K'NEX kits are suitable for all ages. The method of connecting the components is very simple, thus even very young children (5 years old and up) can manage them.

The study is based on aural guiding of the teacher. It also helps to build the pupil's conversation skills.



1. **Two-Dimensional Shapes** – For improving coordination and motor skills, creativity, numbers and counting, colors and shapes, sorting, team work.

2. **Three-Dimensional Models** – For improving coordination and motor skills, creativity, numbers and counting, colors and shapes, sorting, building a 3D construction out of a two-dimensional image, learning scientific aspects from building and observing, observing details, acquiring report habits.

3. **Simple Machines and Bridges** – For the first meeting mechanics laws, the three types of levers, pulleys, wheels and axles, tooth wheels, force gain, movement gain.

4. **Coding with a mobile robot** – For converting robot tasks/movements into robot instructions using icon base programming software adapted to young pupils (5+).

5. **Basic Robotics** – For understanding and implementing a robotic system which includes mechanical parts, a control unit, sensors and actuators (motors, lamps etc.) operated according to the sensors and the control unit internal program.

Multi-Art (age group 7+)

Here pupils are introduced to the world of digital graphics, image processing and animation.

The pupils become acquainted with different artistic concepts and **develop a visual** language and self-expression.

Multi-Music (age group 9+)

Here pupils learn to compose, arrange and record their own music. Through the interactive software and by using the midi keyboard, they learn about musical instruments, musical composition, and how to record and create songs in teams.

The pupils also learn about various musical styles and structures. Newly composed melodies are saved and uploaded to the internet.

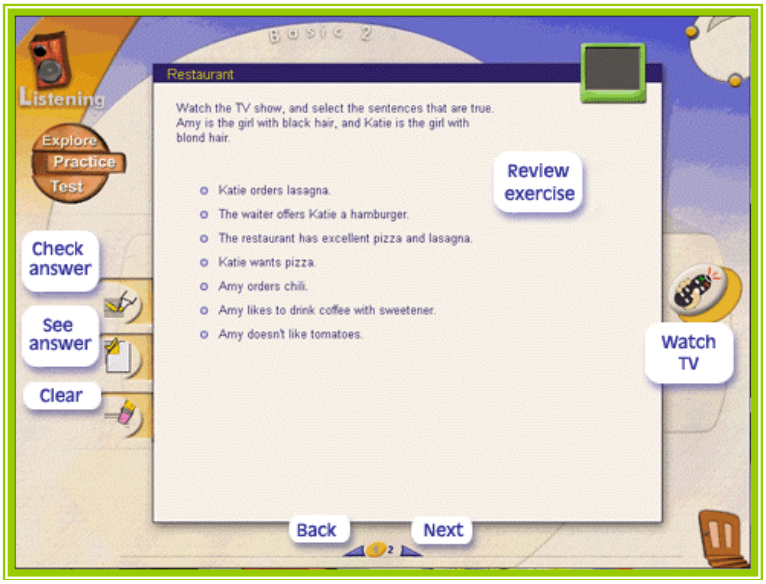
Multi-Lingua (age group 10+)

A computer learning environment dedicated to the study of the English language.

The Multi-Lingua environment offers a total learning solution for:

- A wide range of ages – elementary school up to high school.
- Beginner to advance levels and correlated to international standards.

The learning software includes: video and audio, text, pictures and games and much more.

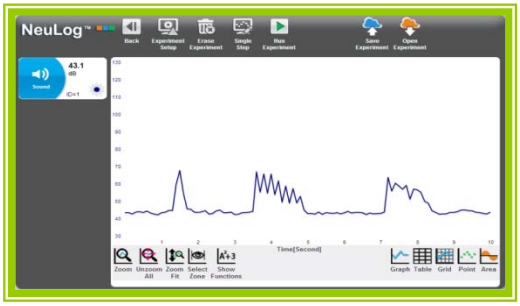


Multi-Science (age group 7+)

In this learning environment pupils will perform online and offline experiments with a verity of digital sensors and the NeuLog™ controller.

After performing the experiments, the pupils will analyze their experiments results with the NeuLog™ software.

Multi-Science environment is a highly effective educational solution for improving the pupils' understanding of nature rules and fulfilling their natural curiosity instinct.



Kid-Science is a science kit based on the Panda module, aimed for young pupils.

Kid-Science uses environment experiments in order to distinguish between sensing to measurements of light, temperature, sound, humidity, etc.

Multi-Tech (age group 10+)

Participants in this module encounter "problems from real life" and search for scientific-technological solutions, using both theoretical and tangible means. Pupils are exposed to a variety of applications utilizing computer-aided systems within a techno laboratory.

This module contains the following components: simulations, programming, mathematical equations, graphs, games, scientific terminology, and unique computer.

Multi-Tech Training Systems

Solar Energy

Process control

Wind Energy

CNC Lathe Machine

Hydro-electric Energy

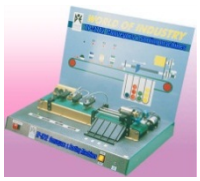
CNC Milling Machine

Solar Water Heating Energy

Basic Electronics

Polar Robot and Principles of Robotics

Basic communication



Conveyors and Sorting Machines

Basic pneumatics

Cartesian Robot and Computerized storage

Basic hydraulics

The MultiCenter UN Recognition

In 1998 The United Nations, launched the "Narrowing the Digital Divide" project with the emphasis on creating equal opportunities for the entire World's children.

The goals of this project, operated in conjunction with MultiCenter, are to bridge the social gaps in the community, to build bridges for peace through education and technology, to create mutual respect between different populations and to bridge the technological gap between the communities of the world.

In the framework of this project, MultiCenter was selected as the enterprise to be responsible for closing the digital gap and for creating equal opportunities for all the children of the world to study technology.

The United Nations acts as a go-between the donor countries and the less privileged countries. It means that the donor countries funded the establishment of MultiCenters in the less privileged countries.

UNITED NATIONS

ALUMNI SUPPORT

WAFUNIF

THE WORLD ASSOCIATION OF FORMER
UNITED NATIONS INTERNES AND FELLOWS, INC.

The MultiCenter in Public Libraries

The establishment of MultiCenters in public libraries proved to be the most successful operational model.

Numbers and facts:

In Poland and Lithuania there are 11 Multicenters established in public libraries.

The first public library MultiCenter in Poland was established in the town of Olsztyn in 2007.

Between the years 2007-2012, more than 30,000 pupils participated in Olsztyn multicenter activities!

A certificate was given to the city of Olsztyn (Poland) by the European Union, for their multicenter project.

The initial goal of the project was to increase the level of ICT (Information and Communication Technologies) education in the two small provincial towns by introducing unconventional methods of e-learning in the libraries of Olsztyn (Poland) and Marijampolė (Lithuania).

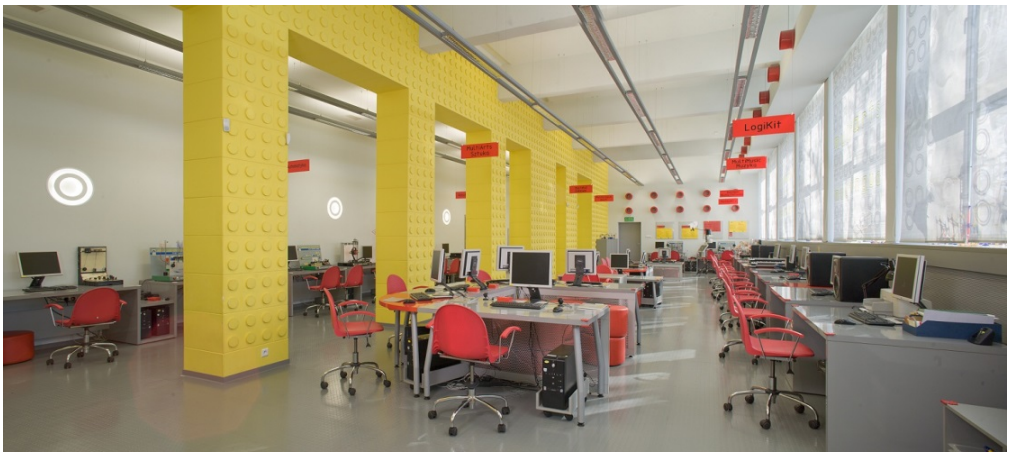
This model can be copied to **community centers**.

MultiCenter Labs Photos

Warsaw, Poland:

Designed by ReaDesign Sp. z o. o

Wrocław, Poland:



Designed by ReaDesign Sp. z o. o

Jawor, Poland

MultiCenter Labs Photos

Moscow, Russia:

Guatemala city, Guatemala

The MultiCenter – Equipment

Item	Description	Qty per Lab	Computers required
K-First	Computerized Learning Environment for children	10	10
Multi-Robotics	Included: TPS-3744 – Machines and mechanisms SENSE-KIT – Autonomous robot coding TPS-3739 – Basic robotics and engineering	10	10
MultiArt	Computerized Creative Art Studies	10	10
MultiMusic	Computerized Music Study and Composition	10	10
MultiLingua	Computerized English Language Study and Practice	10	10
Multi-Science	Computerized Science Experiments	10	10
TP-3701	Solar Energy Training System	1	1
TP-3702	Wind Energy Training System	1	1
TP-3703	Hydro Energy Training System	1	1
TP-3704	Solar Water Heating Energy Training System	1	1
TP-3711	Polar Robot and Principles of Robotics Training System	3	3
TP-3712	Conveyors and Sorting Machines Training System	3	3
TP-3713	Cartesian Robot and Computerized storage Training System	3	3
TP-3714	CNC Lathe Machine Training System	3	3
TP-3715	CNC Milling Machine Training System	3	3
TP-3716	Process control Training System	3	3
TP-3721	Basic Electronics Training System	3	
TP-3722	Basic communication Training System	3	
TP-3723	Basic pneumatics Training System	1	1
TP-3724	Basic hydraulics Training System	1	1

SES Training LABs

The training labs are based on learning-by-doing, which makes the pupils learn more quickly and remember what they have studied by performing practical experiments. They provide the pupils high profession skills and the knowledge on how to improve their chance of employment and earning capacity.

The manuals and courseware that accompany each course provide the theory background and experiments.

Electronics Training Lab
This modular laboratory is aimed for the **Electronics** profession, but also for technology disciplines that are also based in electronics, such as: **Electricity, Mechanics, Automotive, Robotics, Automation, Process control**.

Autotronics Training Lab
This modular laboratory is aimed for the five stages that comprise the automotive program: **Basic and automotive electronics, Car sub-systems simulators, Car sub-systems demonstrators, Car diagnostic and troubleshooting methods, Troubleshooting faults in a real car**.

Mechatronics Training Lab
This modular laboratory is aimed for the mechatronics program which includes the following disciplines: **Basic electronics, Pneumatics systems, Hydraulics systems, CNC machines**.

Refrigeration and Air-Conditioning Training Lab
The Refrigeration and Air-Conditioning training lab covers actual components and their interconnection, related functions, operation, diagnosis and repair methods through safe, hands-on practical activities.

Technology Preparation Training Lab
The Technology Preparation (Tech Prep) laboratory is a classroom-integrated laboratory consisting of educational modules covering a wide range of subjects such as: **Green energy, Computerized systems, Basic electronics, Basic communication, Mechanical systems.**

Science Training Labs
These laboratories (for primary, secondary and high schools) introduce the pupils to the computerized sensors world, **nature and industry processes** and **nature laws**. It will help them understand modern technologies such as: **home and medical appliances, wearing sensors, precise agriculture** and more.

Robotics Training Labs
The robotics programs (for primary, secondary and high schools) help pupils to build innovation and creativity skills. The idea is to make the pupils understand how systems work, to believe that they can improve them and be able to realize their ideas.

MultiCenter Training Lab
The MultiCenter offers a variety of selected interactive learning environments, with a large range of topics and activities such as: **Science, Technology, Graphic Design, Digital Music, Robotics, Computer Technologies** and much more for all sectors of society, cultures, different socio-economic groups and different age groups – from very young children to senior citizens.

SES EDUCATION

MULTICENTER

Our Training Labs:

SCIENCE

ROBOTICS

ELECTRONICS

ELECTRICITY

TELECOMMUINCATION

AUTOTRONICS

MECHATRONICS

MULTICENTER

SCIENCE & ROBOTICS

TECHNOLOGY PREPARATION

REFRIGIRATION & AIR-CONDITIONING