



# Scientix, the community for science education in Europe

## Scientix Moodle courses

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# SCIENTIX

The community for science  
education in Europe

Moodle courses on Scientix European Network  
Panagiota Argyri, Mathematician Model High School of Smyrna, Scientix Ambassador  
2.12.2017, Athens,  
MoodleMoot 2017, 1<sup>st</sup> National Conference





European Schoolnet is a **network of 30 European Ministries of Education**, based in Brussels, Belgium.  
As a not-for-profit organisation, we aim to bring innovation in teaching and learning to our key stakeholders:  
Ministries of Education, schools, teachers, researchers, and industry partners.

[European Schoolnet](http://www.european-schoolnet.org)

*Under the framework of EuropeanSchoolnet, **Scientix promotes and supports a Europe-wide collaboration among STEM (science, technology, engineering and maths) teachers, education researchers, policymakers and other STEM education professionals.***

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# WHAT IS SCIENTIX



## SCIENTIX

The community for science  
education in Europe

Scientix, the community for science education in Europe, promotes and supports European collaboration in STEM (science, technology, engineering and maths) teaching, research and policy.

[www.scientix.eu](http://www.scientix.eu)



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## WHAT CAN I GET AS A TEACHER

Scientix is among the top  
100 innovations in education  
in the world according to

**HundredED**

### Inspiration

Explore the Scientix repository for teaching materials.

### Partnership

Discover science projects, get involved and build networks!

### Workshops

Face-to-face exchange with your peers across Europe at events.

### Multilingual

Free translations on your demand of your favourite teaching materials.

### Connection

Opportunities to attend online training courses free of charge, such as webinars and MOOCs.

### Support

Scientix Ambassadors and National Contact Points are here to help you!

- **Browse through the Scientix resources repository and find inspiration for your classes**
- **Get involved in European STEM education projects via our matching tool**
- **Participate in national and European workshops and professional development courses**
- **Download all presentations, videos and materials from our conferences, and stay tuned for future ones**
- **Participate in online training, webinars or communities of practice**

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- **Scientix workshops at other events**
- **Scientix presentations at international conferences**
- **Scientix webinars**
- **Scientix Moodle** 
- **Networking events for Science Education projects**
- **Online meeting room**
- **COMMUNITIES OF PRACTICE**

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- **The Scientix Moodle was designed as a peer learning platform for exchange of good practices among STEM teachers.**
- **The most recent courses on the Moodle platform were developed by teachers from a variety of national backgrounds, who shared from their experiences of using different tools and pedagogies in their classrooms.**
- **The courses are self-paced and can be accessed by anyone, at any time. Users do not need to create a Moodle account to follow them.**
- **The Moodle courses are translated and uploaded in all the 24 official languages of the European Union.**

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- ▼ **Scientix Courses 2017 - 2019**
  - ▶ **STEM Tools for teachers**
  - ▶ **ICT Tools for teachers**
- ▼ **Scientix Courses 2013 - 2016**
  - ▶ **STEM Tools for teachers**
  - ▶ **ICT Tools for teachers**
  - ▶ **Classroom management lessons**
  - ▶ **Courses in Your Language**
- ▼ **Scientix Courses 2010 - 2012**
  - ▶ **A-STEM Tools for Teachers**
  - ▶ **B-Office Tools for Teachers**
  - ▶ **C-Web2 Tools for Teachers**
  - ▶ **D-Moodle training**
- ▼ **Other courses**
  - ▶ **SPICE**
  - ▶ **Extra courses**



- STEM tools for teachers
- ICT tools for teachers
- Classroom management lessons
- Office tools for teachers
- Web2 tools for teachers
- Moodle training

<http://moodle.scientix.eu/>

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Scientix Courses 2017 - 2019 / STEM Tools for teachers

Κατηγορίες μαθημάτων:

Αναζήτηση μαθημάτων:

Μεταβείτε

### Doing math as researchers do it

Teacher: Ariana-Stanca Vacaretu

This course gives guidance to teachers who intend to develop math research workshops for students. The workshops encourage students to engage in and eventually learn math by discovering and researching it. The math research workshop develop students' creativity, initiative, critical thinking, problem solving skills, etc., and give students the chance to exchange ideas by working in groups both within their workshop and with students from a different math research workshop.

### Rock Detective

This course aims to explain how to recognize a rock type starting from its characteristics.

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### Teaching Robotics with EV3

Teacher: Gloria Drel

This Introductory Robotics course uses the LEGO® MINDSTORMS® EV3 Education Core Set (hardware referred to as EV3) and EV3 Education Edition Programming Software (free download) to teach the first steps on STEM Robotics to middle school students.

The course goals are: learning to build, to program, and to test solutions relatives to STEM problems.

This course is divided into the following arguments:

1. Opening the EV3 kit
2. Learning the EV3 Programming SW
3. Building your first mobile robot
4. Moving your robot.

### Using the Maker approach in teaching Science

Teacher: Nádori Gergely

Technological changes in the past decades made it possible for everyone to make instruments, devices of a complexity undreamed of before. Rapid prototyping, programmable microcontrollers, cheap sensors and the open source libraries of creations led to the Maker movement, a technology enriched enhancement of the DIY approach.

This movement can be put to work in teaching by a creative Science teacher. You can design and make your own tools, and also make and use the ones others designed. The students can also be makers designing and building devices during a Science class.

<http://moodle.scientix.eu/course/index.php?categoryid=141>

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**Well structured and friendly environment**

<http://moodle.scientix.eu/course/view.php?id=873>



## Using the Maker approach in teaching Science

Αρχή ► Μαθήματα ► Scientix Courses 2017 - 2019 ► STEM Tools for teachers ► SATC36

### THE AUTHOR

This course was created by [Gergely Nádori](#), Scientix Ambassador for Hungary, a Science teacher at the Alternative High School of Economics at Budapest. Apart from Scientix he worked in the MELT and the Mindcrafter 1-2-3-4 projects. His [blog](#) is popular among teachers in Hungary. He has also hosted Scientix webinars on 3D printing, on using technology in field trips, and on 1:1 education.

### ΔΙΑΧΕΙΡΙΣΗ

- ▼ Διαχείριση μαθήματος
- Εγγραφή στο μάθημα
- Competencies

### ΠΛΟΗΓΗΣΗ

- Αρχή
- Η αρχική μου
  - Σελίδες ιστοτόπου
  - ▼ Τρέχον μάθημα
    - SATC36
      - Συμπληρώσεις
      - What you need to start making?
      - Resources for making
      - The teacher as a maker
      - The student as a maker
      - Done?

## Using the Maker approach in teaching Science

Technological changes in the past decades made it possible for everyone to make instruments, devices of a complexity undreamed of before. Rapid prototyping, programmable microcontrollers, cheap sensors and the open source libraries of creations led to the *Maker movement*, a technology enriched enhancement of the *DIY approach*.

This movement can be put to work in teaching by a creative Science teacher. You can design and make your own tools, and also make and use the ones others designed. The students can also be makers designing and building devices during a Science class.

Makerspaces can be the physical places where such work is done. It can be a club in the school, or even a corner in the library. If you do not have one in the school, you can try to cooperate with the local FabLab or with other making oriented institutions. Remember, making is more of mindset than a collection of tools and devices!

## What you need to start making?

What you really need is a *maker mindset*, the desire to make something for yourself. There are some tools that can help you in this. Some of them require greater investment, but the benefits are really huge. Here are some of the things you might find useful:

### 1. Basic electronics stuff

A soldering kit, breadboards, wires, resistors, LEDs, motors, microswitches. All this can be ordered online from a lot of suppliers; if you can wait with shipping, the cost can be quite low.

### 2. Microcontrollers

There are two kinds you can think about, the *BBC Micro:bit* and the *Arduino* family. The *micro:bit* has a wonderful ecosystem and is really teaching friendly. The *LED-matrix* is perfect for the students to get into programming for it is easy to program and is very spectacular.

The *Arduino* is more versatile, but you need some basic knowledge in electronics and programming to start working with them. Not much though, in a couple of hours you can get the basics. One of the strengths of *Arduino* is the community built around it; you can easily find tutorials and others to help you if you need it.

### 3. 3D printer

3D printing gave a huge momentum to the maker movement and if you can have a 3D printer, you really should. It can be used for prototyping and to design your own objects. A 3D printer is more costly, but if you have some expertise you can assemble your own. There is another Scientix Moodle course about that [here](#).

### 4. Laser cutter

A professional laser cutter is even more expensive, but you can also build your own. Following the instructions [here](#), you can convert a 3D printer to a laser engraver.

### Discussion



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Using Bloom's taxonomy with verbs of teaching phase objective, which Web 2.0 tools do you use or do you think are more appropriate?

[Προβολή](#)
[Επεξεργασία](#)
[Σελίδα](#)
[History](#)
[Map](#)
[Αρχείο](#)
[Administration](#)

ICT (Information and Communication Technology - or Technologies) is an umbrella term that includes any communication device or application: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning.

This course is focusing on ICT tools for STEM education.

There is a plethora of ICT tools, but

- Which ICT tools are appropriate corresponding to the objectives of the teaching and learning approaches?
- In what ways are ICT used and why?
- What strategies have to be implemented for the effective use of ICT?

This course provides a mini guide and a small tool box as supportive material in using effectively innovative ICT tools for different phases of the teaching and learning process.

The content of the course is based on a collection and analysis of the existing bibliography. It is divided into categories and it includes Web 2.0 tools, ICT tools for STEM lessons, many resources that provide useful links and a review of the Scientix repository of teaching materials, of projects and courses about ICT tools.

<http://moodle.scientix.eu/course/index.php?categoryid=142>

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### Using GPS in science education

Teacher: Norbertas Alrošius

This course consists of three linked modules. In first module "Effective GPS application model" we review and determine the success assumptions for effective GPS application in science education. In the next module "Android App for GPS" you will gather the necessary skills to GPS-based research and learning using Android App "GPS Essentials". It also introduces the meter apps. By combining GPS and meter apps data you will get efficient data collection and analysis. In the final module we introduce the teaching scenarios and pedagogical aspects. At the end of the course participants are invited to share the GPS application of science education experiences.

### How to use Virtual Science hub - ViSH

Teacher: Tselta Hristova

- This online course helps teachers to use **Virtual Science hub**, with is a part of GLOBAL excursion project.
- The course gives an overview of Virtual Science hub and how to use its resources as how to register, how to make a trip, flash card, virtual tour, questionnaires, how to use MashMe video conferencing and also presents the capabilities of Virtual Science hub for social network.
- After course teachers following instructions can create himself excursion.

### Use of Augmented reality (AR) in education

Teacher: Daniel Aguilre-Molina

Augmented Reality (AR) is a technology that it's rapidly entering in the Science classes. With this course a brief introduction to the possibilities AR offers are showed. From a simple enrichment of our documents with videos or 3D models until the design of Inquiry experiences where our students will be the main characters is proposed.

The course study the possibilities of using LAYAR and AURASMA in our lessons, and later SKETCHUP with the plugin of AR-Media to design our own 3D Models with AR.

### Socioscientific Issues in Science Education: Examples, perspectives and teachers' role

The course aims to inform teachers about incorporating SSI in Science Education. More specifically aims to explore currently SSIs and relate them to science education standards, discuss several pedagogies related to the teaching of such issues, and give teachers examples of students' discussions so as to point to the several ethical, moral, social and other dimensions, beyond the scientific one, that might emerge in the classroom.

### Making Android Apps

Teacher: Alojz Blazic

In this course you will find a tutorial's about free and very powerful open source platform for making Android App's: MIT App Inventor. Course also contains forum where you can share ideas and ask questions about App Inventor. Platform is designed for very easy to use an it provide a lot of teaching materials which you can use in your classroom.

### Nearpod

Teacher: Nada Stojčević

This course introduces Nearpod, a great tool for presenting educational materials. It can be used on smart phones, tablets, PC and various OS (Android, Windows, iOS). Easy to share, with pdf report this tool saves time and brings interactivity to your classroom.

### Hi Oppia, nice to meet you

Teacher: Nada Stojčević

This course introduces Oppia, an online learning tool that enables anyone to easily create and share interactive activities. These activities, called 'explorations', simulate a one-on-one conversation with an intelligent tutor. During this course you can learn some basics in how to use this tool.

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## As proposal



The Academy is a platform where you can learn about innovation in the school and classroom through **online professional development courses for teachers** in primary and secondary schools.



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