

Arduino CTC101 Program

Kit + Online Training



A state of the art platform with superb online training content...

Overview

Creative Technologies in the Classroom 101, or CTC 101, is a 5 modules STEAM program, tailored for students ages 13 to 17. It is the flagship Arduino Educational Program for schools. CTC 101 uses “project-based” learning methodology. Students are introduced to the foundations of programming, electronics, and mechanics through a series of playful, well-documented projects and easy-to-assemble experiments.

CTC 101 has been certified by the Finish Kokoa Education Standard™ that guarantees high educational value and robust pedagogical design on global learning.

What Does It Include?

TOOLBOX: Boards, shields and components for a class of up to 30 students, and for educators to get trained. More than 700 components for a class.

ONLINE PLATFORM: Access to the Arduino Education Learning Management System with step-by-step instructions and lessons for 26 experiments based on themed modules.

SUPPORT: Self-administered training, onboarding webinar, and forum monitored by Arduino Education experts.

Link for Product Video: Click [here](#)

Contents of the kit



More than 700 components and parts:

- **Six Arduino 101 boards:** one of the most powerful Arduino boards for Education, it includes wireless communication (Bluetooth) and an integrated IMU (Inertial Measurement Unit). They are programmable, able to read inputs (e.g., light on a sensor) and capable to control outputs (e.g., activating a motor).
- **Six Arduino Education shields:** add-on boards that connect to the Arduino 101 and UNO boards to extend their functionality. The Education Shield is a custom-made shield designed by Arduino Education specially tailored for

educational purposes to enable quick and easy learning while building projects.

- **More than 10 mini breadboards:** used to make circuits easier to build. They can be either attached on top of the Education Shield or used separately to connect other components.
- **Set of electronic components:** used to create interactive electronic circuits, includes resistors, potentiometers, LEDs, push buttons, capacitors, and diodes.
- **Set of plug and play modules:** sensors and actuators that include the necessary components onboard so they can be connected to the Education shield board directly. Modules include a joystick, light and tilt sensors, and an infrared array.
- **Set of sensors and actuators:** sensors include light, knock, touch / capacitive, and infrared. Actuators include, standard and continuous servo motors.
- **Set of batteries:** includes both 9 V and 1.5 V batteries, and 4-slot and 8-slot battery holders.
- **Media and storage:** includes webcam, SD-card and a speaker. The Education Shield has an SD card reader and an audio connector.
- **Set of cables:** include all the cables needed such as USB cables, jumper wires, module cables, battery snaps, alligator cables and single core wires.
- **MDF parts:** project building involves laser-cut MDF parts. There are more than 10 different projects that can be built with this set of parts.
- **Storage and sorting boxes:** electronic components can be sorted inside boxes according to their functions and sizes. After MDF parts are removed from their frames, they can be stored in the resealable storage bags to keep them organized for later. The sorting box with dividers can be used to organize small components.

Online Platform

Each CTC 101 purchase includes user access to the online platform. Up to 3 educators are granted access, subsequently they will manage student access with a 30 slot limit per toolbox. See demo [here](#).

The online platform runs on an custom-made Learning Management System (LMS), this platform helps students get started with programming, electronics and build fully-functional, interactive projects with the guidance of educators. Currently available in English, Spanish, Italian and Catalan.

Educators are granted access before students so they can prepare and adapt their lesson plans with more engaging and creative techniques so that they take full advantage of the latest technologies to integrate them into their curriculum.

The content and class dynamics are specially designed to enhance the students' problem-solving and teamwork skills in a collaborative environment.

Student Activities

Module 1: programming and basic coding.

Module 2: introduces Arduino boards and digital signals.

Module 3: introduces analog signals and serial communication.

Module 4: introduces robotics, power systems and motors.

Module 5: introduces wireless communication via Bluetooth and advanced sensors.

Moreover, the platform has a:

Reference section: extra material and exercises for troubleshooting and further learning.

Educators section: self-administered online training, materials for class preparation, teacher guides and resources.

By the end of the course, the students will have the possibility to prepare and create their own projects and share them with the Arduino Education

community. * Note that CTC 101 program duration is flexible and based on the amount of lessons the students take per week (two to three lessons per week are recommended).


