



ik Digital Labs  
**ESSENTIAL**

jp.ik

inspiring knowledge

# ABOUT US

With more than **30 years** of experience, jp.ik is a Portuguese Company and the business unit for Education of **jp.group**.

From Portugal to the world, **jp.ik** launched in 2008 the world's first national Edtech initiative, in Portugal, democratizing social inclusion and access to education.



**+17M**  
Students



**+110K**  
Equipped  
Schools



**+320K**  
Capacitated  
Teachers



# WORLDWIDE EDUCATION PROJECTS

Angola  
Argentina  
Armenia  
Austria  
Azerbaijan  
Bangladesh  
Belgium  
Benin  
Bolivia  
Bosnia and Herzegovina  
Botswana  
Brazil  
British Virgin Islands  
Bulgaria  
Burkina Faso  
Cape Verde  
Chile  
China  
Colombia  
Comoros  
Costa Rica  
Cote d'Ivoire  
Curaçao  
Cyprus  
Czech Republic  
Denmark  
Djibouti  
Dominica  
Dominican Republic  
East Timor  
Ecuador  
Egypt  
El Salvador  
Equatorial Guinea  
Finland  
France

Gabon  
Gambia  
Georgia  
Germany  
Ghana  
Guatemala  
Guinea Bissau  
Honduras  
Hungary  
India  
Indonesia  
Iraq  
Ireland  
Israel  
Italy  
Ivory Coast  
Jamaica  
Jordan  
Kazakhstan  
Kenya  
Kuwait  
Latvia  
Lebanon  
Lesotho  
Lithuania  
Macao  
Malawi  
Malaysia  
Malta  
Mauritius  
Mexico  
Mongolia  
Morocco  
Mozambique  
Namibia  
Netherlands

Nigeria  
Norway  
Oman  
Palestine  
Panama  
Paraguay  
Pakistan  
Peru  
Philippines  
Poland  
Portugal  
Puerto Rico  
Romania  
Russia  
Rwanda  
Sao Tome and Principe  
Saudi Arabia  
Senegal  
Seychelles  
South Africa  
South Sudan  
Spain  
Sri Lanka  
Sweden  
Switzerland  
Taiwan  
Tanzania  
Thailand  
Trinidad and Tobago  
Tunisia  
Turkey  
Uganda  
Ukraine  
United Arab Emirates  
United Kingdom  
Uruguay

USA  
Uzbekistan  
Venezuela  
Zambia  
Zimbabwe



**+100**  
countries

ik

# DIGITAL LABS

This initiative was born from the **close collaboration** between teachers, students, pedagogues and EdTech Specialists to pave the way for Governments and Public institutions, as well as every single stakeholder to develop Digital skills of school-age citizens or working population.

**Digital** skills are important for **working, studying**, accessing services and buying products, or keeping in touch with friends and **family**.

What are ik

## DIGITAL LABS?

Learning Spaces designed to **stimulate interaction** between students and **make them the protagonists of the process**. It has tools such as computers, a 3D printer, a laser cutter, drill and robotics kits.

Students are stimulated to test hypotheses presented in class and to **develop projects** with the aim of proving them - whether it's understanding the process of an electric current, or creating a robot, from **paper to prototypes**, towards the development of digital skills.

At the same time, ik Digital Labs enhances soft skills such as collaboration, cognitive empathy, and team work.

The training offer:

**MAKER SPACE ESSENTIAL**

**MAKER SPACE ADVANCED**



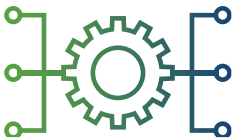
2<sup>nd</sup> and 3<sup>rd</sup> cycle of basic education

Secondary and vocational education

both are **interlinked** and **interconnected** although **independent**



a **human-centered** and inclusive digital environment



more **secure**, **accessible** and **sustainable** digital infrastructures



increased use of **digital skills**



online **public services** for everyone



strengthened **collective** resilience

# MAKER SPACE ESSENTIAL

The setting up of **Maker Space ESSENTIAL** is expected to support schools in the integration of **digital technologies in the teaching and learning process**.

Providing schools with technological equipment for the effective **use of digital technologies** as drivers of innovative, inclusive and accessible teaching practices.

Encourage the transversal integration of technologies into the curriculum from an early age, providing contact with these technologies, which could even help with choices regarding further studies.

Developing digital skills and encouraging further study in **STEAM areas**, promoting equal participation by girls and boys.

Teachers can create/adapt their own scenarios and implement them with their students.



The **Maker Space Essential** is composed by three learning spaces that together develop **STEAM digital skills**.  
Every space has the capacity for **25 students** and each one of the spaces promotes:



### PLAY

encourages exploration,  
without the concern of  
always getting it right



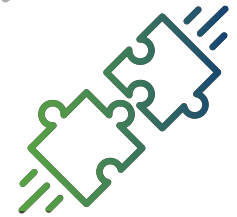
### PASSION

students should work  
with themes that mean  
something to them, within  
their own realities and  
contexts and contexts



### PEER LEARNING

students work in  
groups and learn from  
each other

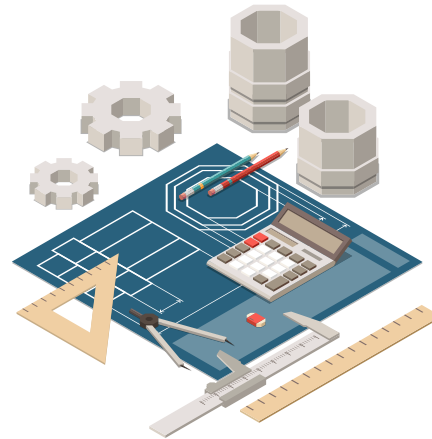
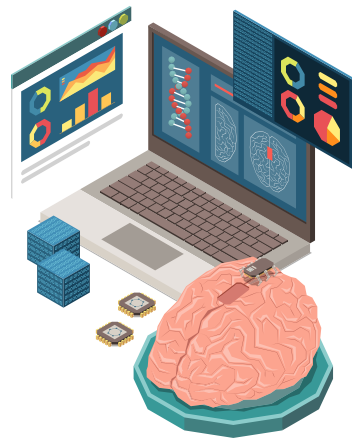


### PROJECT-BASED LEARNING

learning takes place  
through projects

# MAKER SPACE ESSENTIAL

CODING AND MAKER  
ARTS AND MULTIMEDIA  
SCIENCE AND ROBOTICS





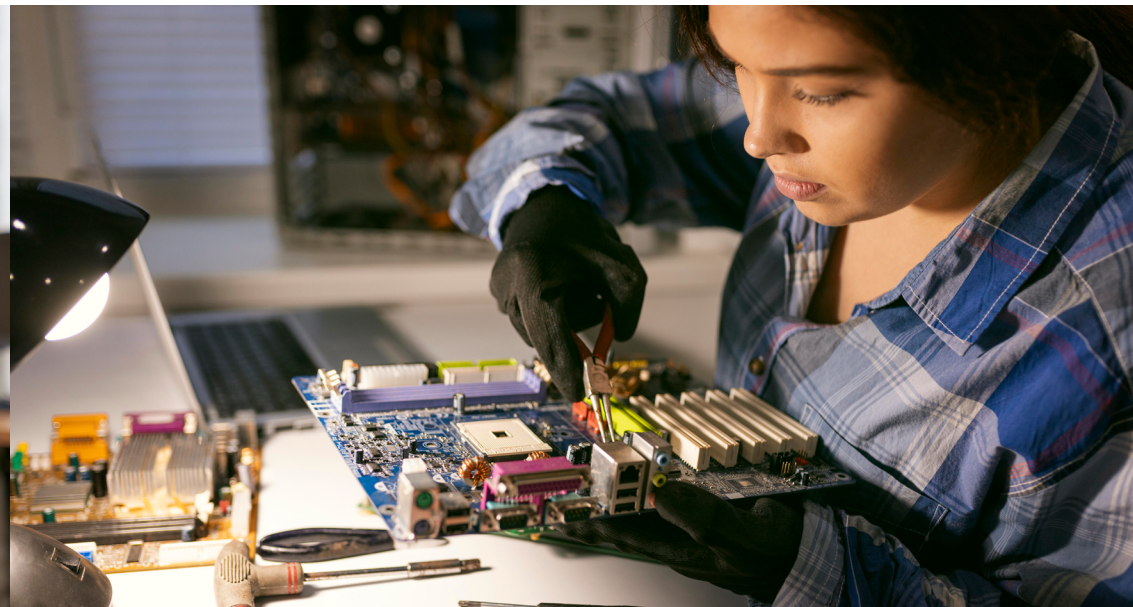
# CODING & MAKER

## MAKER SPACE ESSENTIAL

This space encloses components that make possible to develop projects related to **programming and robotics** in different contexts.

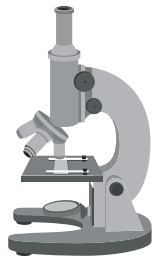
A set of **sensors** along with electronic boards have been integrated to allow the complexity of the projects to evolve. It provides a very fast learning curve and can be programmed graphically by **blocks** or even with more advanced programming languages.

For a more elaborate **programming and robotics** context, Arduino boards have been added, complemented by various **sensors** and development support boards. Arduino boards are known for their ability to support **robotics-related projects** and are a benchmark in the development of intermediate and advanced programming in the areas of electronics, programming and robotics.

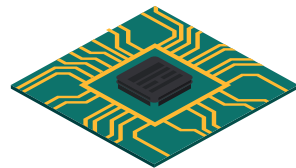


## Some technical specifications:

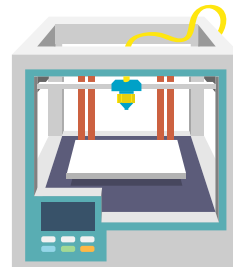
- Complete integrated electronic board with the essential accessories to start programming and robotics projects;
- Set of sensors to be used with the electronic board mentioned above;
- Arduino board compatible with the following components: breadboard, set of different resistors, buzzers, sensors, colored LEDs, pushbuttons, displays, switches, among others;
- Integrated educational programming and robotics kit and Expansion set;
- Integrated educational programming and robotics kit for Arduino.



Microscope



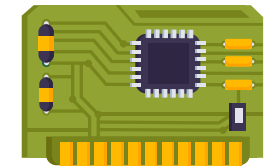
Arduino



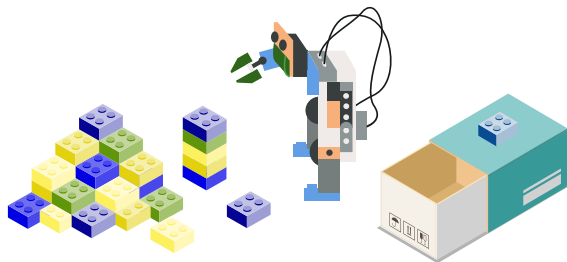
3D printer



Laptops



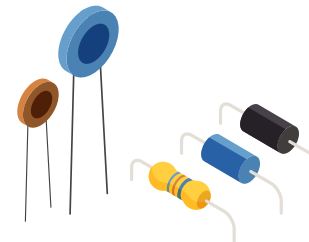
Micro:bit



Robotic Kit and  
Expansion Set



Tools



Sensors



Drones

# ARTS & MULTIMEDIA MAKER SPACE ESSENTIAL

This space allows students to **develop projects** with audio, video, image processing and digital design components. Bringing together text, graphics, digital animation, video, photography, audio and virtual reality to create a range of products that can be delivered on a range of multimedia platforms.

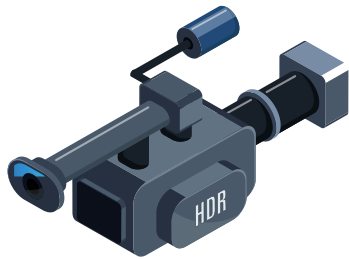
Components include a Chroma Key set with 5 backgrounds, a lighting system, a video mixer with 2 inputs and transitions, a PC video input card, a stream controller for making and production (widely used for live video composition), a set of two speakers, accompanied by an 8-input audio mixer.

It also includes a camera for image work (with 4K video recording capability), and external microphones for cameras. This equipment also features a semi-professional quality video camera for more complex projects, complemented by specific tripods.



## Some technical specifications:

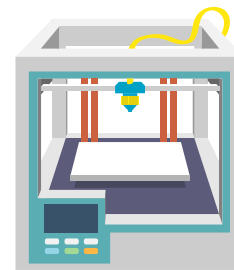
- Photo studio equipment comprising a range of different backgrounds;
- Mixer with switcher, resolution converter, audio processing and video effects, among other features;
- Streaming controller with programmable keys and USB interface;
- High-quality cameras with 4K video recording;
- 4K digitizing tablet with pen, compatible with Windows and Mac systems.



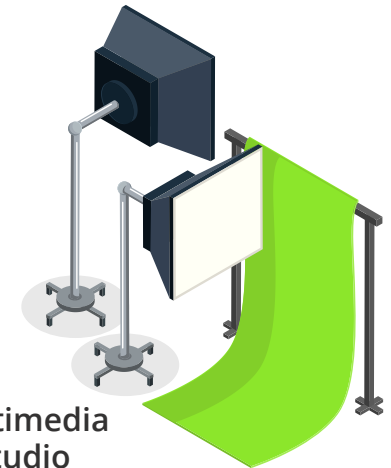
Camera 4k



Laptops



3D printer



Multimedia Studio



Mixer



Tools



Headphones

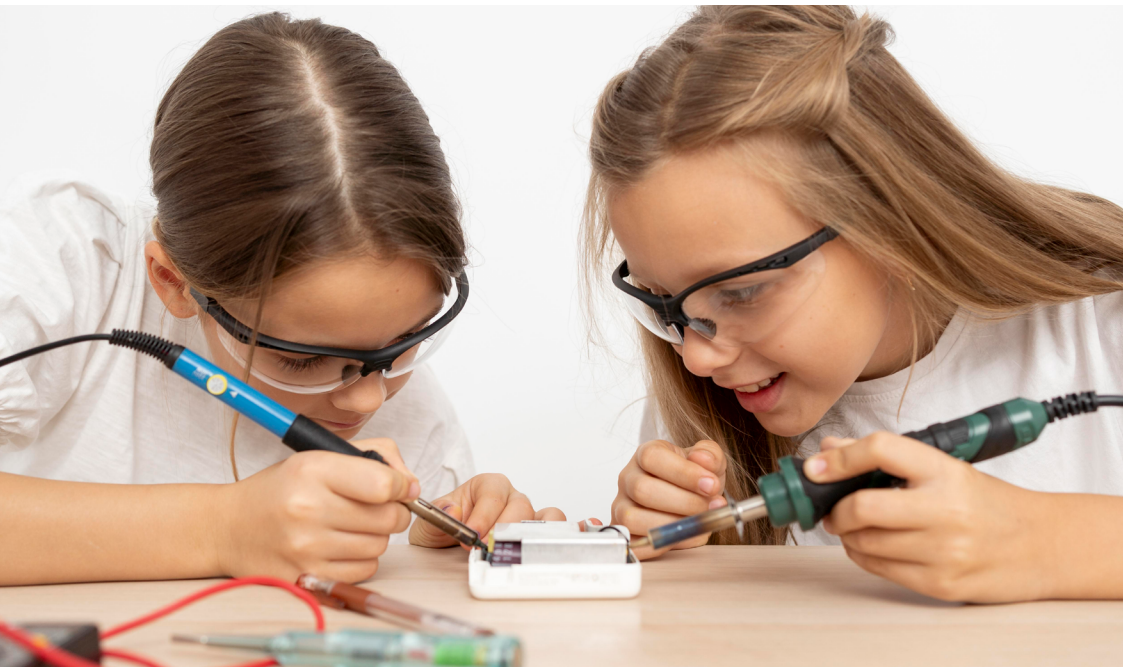
# SCIENCE & ROBOTICS

## MAKER SPACE ESSENTIAL

This space is science, technology, **engineering** and **mathematics** oriented. It includes a ready to use robot and a set of programmable sensors such as sound, gas, temperature, humidity, colour, movement and light.

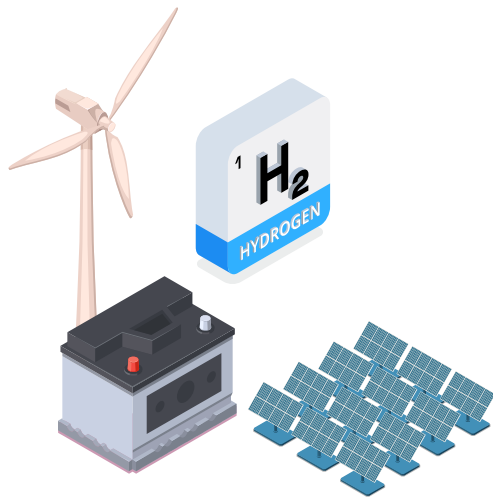
The **STEM** area has a processing board which, by using a scientific calculator, allows programming and creating engineering projects. A **robot** has been added to explore topics and concepts explored of the basic and secondary education curriculum.

It also includes a renewable energy laboratory, which allows a set of modular experiments associated with the operation of clean energies - wind turbines, solar cells and batteries. This lab comes with specific software, as well as manuals and study guides for **collaborative** work.



## Some technical specifications:

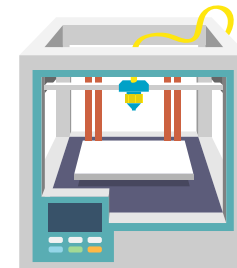
- Explorer Robot Kit, containing a LED matrix, accompanied by a compatible battery;
- Teaching laboratory microscope with integrated digital camera and tablet;
- STEM LaunchPad Board project equipment to complement the functionality of graphing calculators, enabling programming and engineering projects;
- A programmable robotic vehicle for maths, science and programming, complementary to the LaunchPad Board equipment;
- A science kit on renewable energies to demonstrate clean energy production.



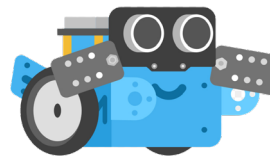
Renewable Energy Kit



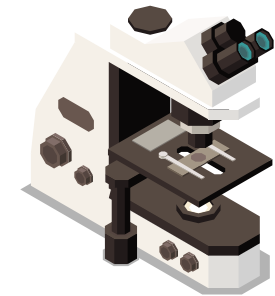
Laptops



3D printer



M:bot



Microscope

# MAKER SPACE ESSENTIAL

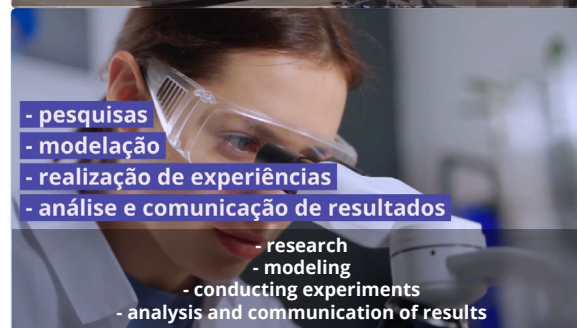
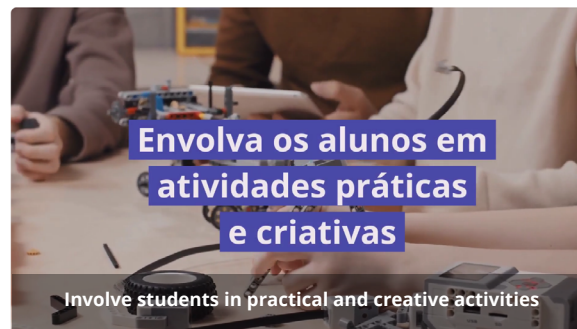
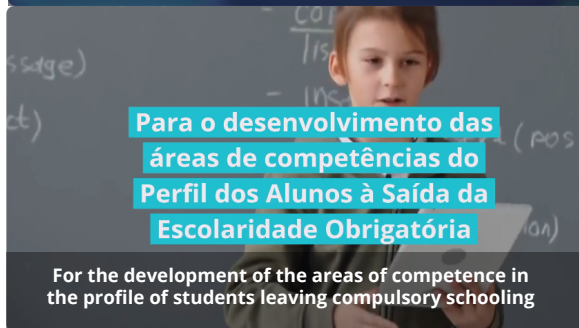
## IN ACTION

Since 2023 the Maker Space Essential has been part of the educational landscape for the 2<sup>nd</sup> and 3<sup>rd</sup> cycle of basic and secondary Portuguese schools.

Today, the school curriculum is complemented and enhanced by these digital laboratories in three areas: Coding & Maker; Arts & Multimedia; Science & Robotics.

The Portuguese educators have now access to a library of content and classroom activities, for a hands-on and heart-on EdTech learning experience.

Over five months jp.ik multidisciplinary team have worked closely to design, develop and deploy the integrated **Digital Labs** solution.



You can check the video on youtube:

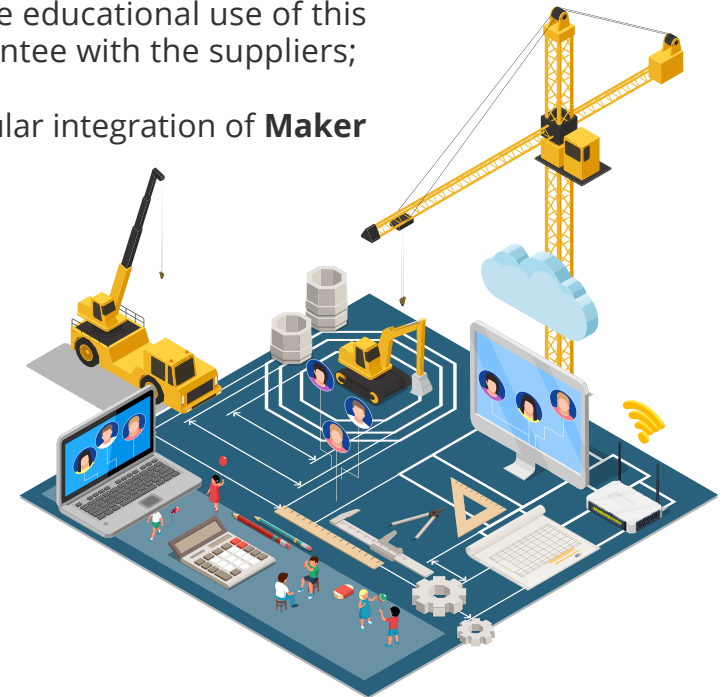


# SCHOOL OPERATIONAL REQUIREMENTS

The schools must gather the following physical and human resources:

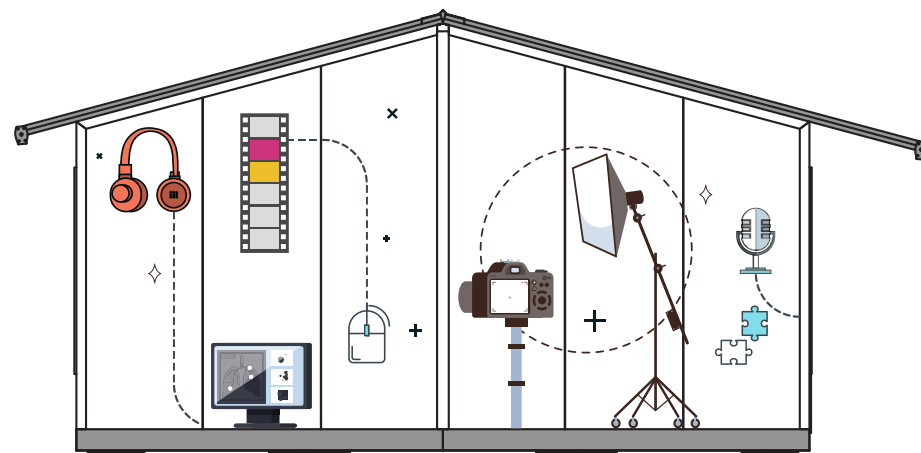
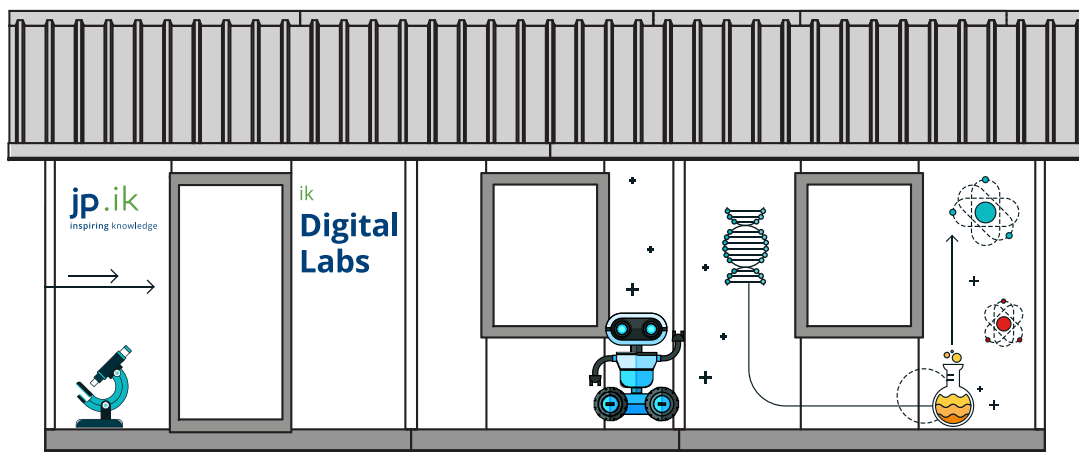
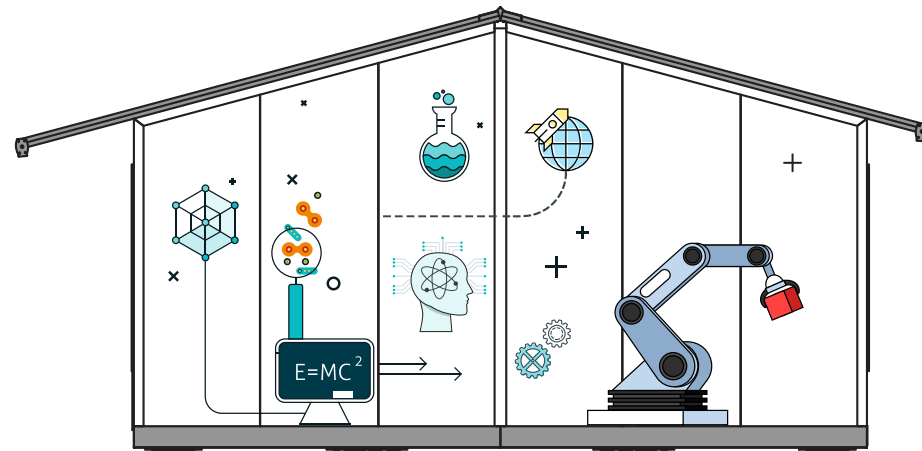
- Provide a space to host the **Maker Space Essential** equipment. This space may or may not be exclusive but needs to have the technical and organisational conditions to allow students and teachers to use it properly and safely;
- The **Maker Space Essential** space should be permanent and be clearly marked on the school's floor plan. jp.ik may provide a physical facility ready to accommodate the infrastructure and learning spaces;
- These dedicated spaces should also be prepared with the **network** and **electrical infrastructure**;
- The **Maker Space Essential** Champion will be the contact person appointed by the school, responsible for receiving, checking, and installing all the equipment delivered and making the educational use of this equipment profitable. It must ensure the applicable procedures regarding guarantee with the suppliers;
- Additionally, each school should set up a working team responsible for the curricular integration of **Maker Space Essential's**, including representatives of the various departmental groups.

## INFRASTRUCTURE INVESTMENT





# POP-UP DIGITAL LABS



# IMPLEMENTATION ROADMAP



1<sup>st</sup> Stage

**Assessment**

~ 2 weeks



2<sup>nd</sup> Stage

**Infrastructure  
and Logistics**

~ 4-6 weeks



3<sup>rd</sup> Stage

**Setup and  
Implementation**

~ 2 weeks

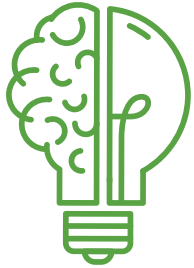


4<sup>th</sup> Stage

**Training Knowledge  
Transfer**

~ 2-3 weeks

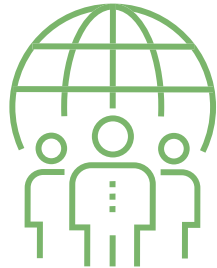
# A GLANCE INTO THE **FUTURE**



## **SKILLS**

ICT Specialists

Basic Digital Skills



## **DIGITAL TRANSFORMATION OF BUSINESS**

Tech up-take: companies using  
Cloud, AI, or Big Data

Innovators: grow scale-ups &  
finance

Late adopters: SMEs reach at least  
a basic level of digital intensity



## **SECURE AND SUSTAINABLE DIGITAL INFRASTRUCTURES**

Connectivity: Gigabit for everyone

Cutting edge Semiconductors: in  
global production

Data - Edge & Cloud nodes

Computing: computer with  
quantum acceleration



## **DIGITALISATION OF PUBLIC SERVICES**

Key Public Services:  
100% online

e-Health: 100% of citizens have  
access to medical records online

Digital Identity: 100% of citizens  
have access to digital ID

# WANT TO KNOW MORE?

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