

# *Insegnare STEAM con la realtà aumentata*

Grzegorz Karwasz

*Lezione 1: «Realtà aumentata» - definizione,  
qualche esempio*

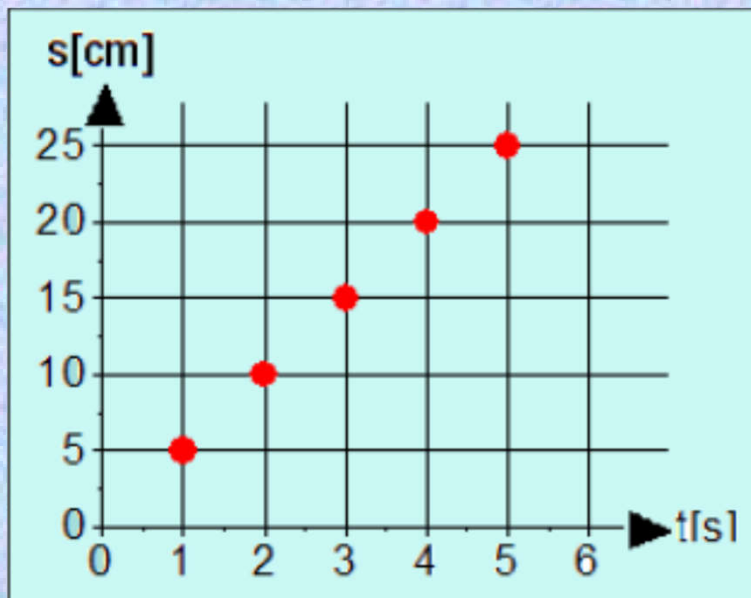
# Che cos'è la realtà aumentata

Per **realtà aumentata** (abbreviato **RA** o **AR** dall'inglese *augmented reality*), o **realtà mediata dall'elaboratore**, si intende l'arricchimento della percezione sensoriale umana mediante informazioni, in genere manipolate e convogliate elettronicamente, che non sarebbero percepibili con i cinque sensi.<sup>[1]</sup>

Il cruscotto dell'automobile, l'esplorazione della città puntando lo smartphone o la chirurgia robotica a distanza sono tutti esempi di realtà aumentata.

# Il cruscotto

Come viene misurata la velocità dell'automobile?



oppure...





# Il cruscotto



# Il cruscotto



Assistente di parcheggio





# La didattica AR



The image is a screenshot of a web browser displaying the Zumoko website. The browser's address bar shows the URL [zumoko.com/augmented-reality-in-education/](https://zumoko.com/augmented-reality-in-education/). The website header includes the Zumoko logo, contact information (+381(0) 60 4040826, info@zumoko.com), and social media icons for LinkedIn, Facebook, YouTube, Vimeo, Instagram, and Twitter. A navigation menu contains links for ZUMOKO CAD DT, INDUSTRIES, SOLUTIONS, PORTFOLIO, ABOUT, and CONTACT. The main content area features a large blue heading: "Some of the use cases and benefits of AR Education and Learning". Below this heading is a photograph of a group of people, including students and a teacher, gathered around a large, glowing 3D globe of the Earth. One student is holding a smartphone, likely using AR to interact with the globe. To the right of the photo, the text reads: "AR Classroom – faster, entertaining and easier". Below this, a paragraph explains that AR helps students understand micro-worlds and interact with 3D molecular models. It also states that AR can be used as a conversion between 2D paper maps and 3D real-world scenes for map reading in Geography lessons. At the bottom of the text block, there is a call to action: "Get Free Consultation! Just drop - Skype ID or Phone No. or Email". The browser's taskbar at the bottom shows the system tray with a temperature of 6°C, weather "Nuvoloso", and the time 04:27 on 02/09/2022. Various application icons are visible in the taskbar.

zumoko.com/augmented-reality-in-education/

+381(0) 60 4040826 info@zumoko.com

ZUMOKO

ZUMOKO CAD DT INDUSTRIES SOLUTIONS PORTFOLIO ABOUT CONTACT

## Some of the use cases and benefits of AR Education and Learning



### AR Classroom – faster, entertaining and easier

Teacher's goal is to help each, and every student reaches their full potential and makes them understand the micro-worlds that are not visible to a naked eye. High school students' imaginative abilities are not yet mature. AR offers to chemistry students to see and interact with 3D molecular models in a direct way. As AR combines elements of the real-world and virtual environments, it can be used as a conversion between a two-dimensional paper map and three-dimensional real-world scenes in the learning and teaching of map reading in Geography lessons.

*Get Free Consultation! Just drop - Skype ID or Phone No. or Email*

6°C Nuvoloso 04:27 02/09/2022

Vojvođanskih brigada 28, Novi Sad,  
<https://www.zumoko.com/subscribed/>

# Imparare la storia attraverso i giochi

google se x | G assistente x | G augmente x | Education x | Perché la f x | realtà aum x | Cos'è la re x | W itwikipe x | Nuova sch x | +

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## Learning Through Game-based Visualization

Augmented reality teaching and classroom learning also have a great potential in bringing history to life via multimedia content in the mobile device. Every student would like to see historical events right in front of his eyes in real-time, to go to a virtual tour, or to get up close and personal with primary sources like they never have before. Augmented reality educational apps don't necessarily require any expensive hardware. The majority of teenagers to young adults currently own a smartphone, tablet, PC or other so AR technologies are immediately available for use to most of the target audience. Teachers manage to catch the attention of students and motivate them better, while students get new tools to visualize their subjects and complex lessons, as well as obtain practical skills.

*Get Free Consultation! Just drop - Skype ID or Phone No. or Email*

Display per auto...html Operazione annullata

SH\_Park\_Assista...webp

Mostra tutto x

12°C Nuvoloso

21:51 01/09/2022

Battaglia di Prochorovka



# AR in educazione

The image shows a browser window with a Google search for "augmented reality didactics". The search results include several articles and a video. The video player on the right shows a person using a tablet to view a 3D heart model overlaid on an open book.

Google  
augmented reality didactics

Assistente x Augmente x Education x W it.wikipedi x YF google lei x Google Le x Augmente x YF best app x Top 10 Be x +

google.com/search?q=augmented+reality+didactics&tbm=isch&ved=2ahUKEwjouNy8rft5AhVix4sKHXzFACcQ2-cCegQIABAA&oq=augmented+reality+didacti...

A Beginner's Guide to Augmented Reality in the Classroom  
visiblebody.com

Augmented Reality in education. It is a known fact...  
medium.com

AR & VR for education helps students to learn more and be...  
inglobetechnologies.com

Augmented Reality in Education – Ekson  
ekson.me

https://www.zumoko.com/augmented-reality-in-education/

Augmented Reality in African Education: What Can CES...

Zumoko  
Education System with Augmented Reality | Zumoko AR/VR Company  
Visita

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Immagini correlate

14°C  
Soleggiato

22:16  
02/09/2022



# AR in training aziendale

<https://samelane.com/blog/5-benefits-of-augmented-reality-in-education/>



Nowadays, learning management systems and e-learning courses are widely used in large companies. They are also more and more often chosen by small and medium-sized entities, which recognize the potential of LMSs, along with the growing and constantly changing training needs. Augmented reality training, which is quickly gaining popularity, effectively engages employees and shortens the time needed to acquire new knowledge and competences. How does augmented reality work in education?

## Don't n

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# Realtà virtuale vs. realtà aumentata

Coming back to the subject – how can the two technologies be characterized? **Virtual reality (VR)** allows the user to move into an illusory, **fully digitized environment** and to have limited movement opportunities around this imaginary space. This is possible due to the use of special equipment packed with sensors and cameras which are able to reproduce the way and direction of user movement. Augmented reality (AR), in turn, is a technology which also uses specialized equipment, and with its help, supplements the surrounding reality with additional elements. The equipment used by AR (usually glasses or a [mobile device](#)) is used to impose additional images or information on the reality around us.

«Realtà virtuale» potrebbe essere del tutto immaginaria  
Realtà aumentata corrisponde al mondo reale, e lo arricchisce con tecnologie virtuali



# Realtà virtuale vs. realtà aumentata

Tornando all'argomento, come si possono caratterizzare le due tecnologie? La realtà virtuale (VR) consente all'utente di muoversi in un ambiente illusorio e completamente digitalizzato e di avere limitate opportunità di movimento intorno a questo spazio immaginario. Ciò è possibile grazie all'uso di attrezzature speciali dotate di sensori e telecamere in grado di riprodurre il modo e la direzione del movimento dell'utente. La realtà aumentata (AR), a sua volta, è una tecnologia che utilizza anche attrezzature specializzate e, con il suo aiuto, integra la realtà circostante con elementi aggiuntivi. L'apparecchiatura utilizzata dall'AR (di solito occhiali o un dispositivo mobile) viene utilizzata per imporre ulteriori immagini o informazioni sulla realtà che ci circonda.

«Realtà virtuale» potrebbe essere del tutto immaginaria  
Realtà aumentata corrisponde al mondo reale, e lo arricchisce con tecnologie virtuali

# **5 benefits of augmented reality in education**

- 1. It facilitates the acquisition of knowledge and helps overcome cognitive barriers**
- 2. It helps remember the acquired knowledge for longer**
- 3. It saves time and money**
- 4. It guarantees a safe learning environment**
- 5. It has an unusually wide range of uses**



# 5 benefits of augmented reality in education

## 1. Visualizing Becomes Easier

In education, imagining things has greater importance. But not a lot of people can visualize things that they are learning. This is one of the primary reasons why students don't show a lot of interest in the classroom. Even though eLearning was introduced a lot of years ago, still it has not changed the number of students hating to study in the school.

By using Augmented Reality, students can easily see the things in 3 dimensions which they were supposed to imagine. [Augmented Reality has become a blessing to students](#) who were not only regarding imagining things but also for their overall development.

## 2. Increases Engagement In Things

Students didn't like to learn because of the lack of curiosity. The lack of curiosity was because of the lack of imagination. Now, as students can see the things they learn, their curiosity came back and now they have started engaging themselves in various educational events. Thanks to Augmented Reality app development, students can not only read the textbooks but also live the textbook. This is a breakthrough invention, but it also has a downside. Once the students get used to this technology, they may lose their natural ability to imagine forever.

<https://elearningindustry.com/augmented-reality-and-virtual-reality-transform-industry-education-5-ways>

# 5 benefits of augmented reality in education

## 1. La visualizzazione diventa più facile

Nell'educazione, immaginare le cose ha maggiore importanza. Ma non molte persone possono visualizzare le cose che stanno imparando. Questo è uno dei motivi principali per cui gli studenti non mostrano molto interesse per la classe. Anche se l'eLearning è stato introdotto molti anni fa, non ha ancora cambiato il numero di studenti che odiano studiare nella scuola.

Utilizzando la Realtà Aumentata, gli studenti possono facilmente vedere le cose in 3 dimensioni che avrebbero dovuto immaginare. La realtà aumentata è diventata una benedizione per gli studenti che non erano solo per quanto riguarda l'immaginazione delle cose, ma anche per il loro sviluppo generale.

## 2. Aumenta il coinvolgimento nelle cose

Agli studenti non piaceva imparare a causa della mancanza di curiosità. La mancanza di curiosità era dovuta alla mancanza di immaginazione. Ora, mentre gli studenti possono vedere le cose che imparano, la loro curiosità è tornata e ora hanno iniziato a impegnarsi in vari eventi educativi. Grazie allo sviluppo di app di Realtà Aumentata, gli studenti possono non solo leggere i libri di testo, ma anche vivere il libro di testo. Questa è un'invenzione rivoluzionaria, ma ha anche un rovescio della medaglia. Una volta che gli studenti si abituano a questa tecnologia, potrebbero perdere la loro naturale capacità di immaginare per sempre.

<https://elearningindustry.com/augmented-reality-and-virtual-reality-transform-industry-education-5-ways>



# 5 benefits of augmented reality in education

## **3. Work Doesn't Feel Like Work**

Augmented Reality has already entered the designing world. Augmented Reality is used in designing cars, buildings, creating 3D images, etc. We know that at our work all we have to do is put on the VR specs and start moving fingers in such a direction that it will form an image. When work becomes fun, productivity comes quickly. And when productivity comes, development happens.

## **4. Eliminates Language Barriers**

Augmented Reality is a language itself; the language of visuals. A language which every person in the world understands. Using Virtual Reality and Augmented Reality helps us create classrooms across the globe where even illiterate people can join and become students and learn some of the concepts even literate people cannot understand. Augmented Reality app development can bring the world closer than ever.

# 5 benefits of augmented reality in education

## 3. Il lavoro non sembra un lavoro

La Realtà Aumentata è già entrata nel mondo del design. La realtà aumentata viene utilizzata nella progettazione di auto, edifici, creazione di immagini 3D, ecc. Sappiamo che nel nostro lavoro tutto ciò che dobbiamo fare è mettere le specifiche VR e iniziare a muovere le dita in una direzione tale da formare un'immagine. Quando il lavoro diventa divertente, la produttività arriva rapidamente. E quando arriva la produttività, lo sviluppo avviene.

## 4. Elimina le barriere linguistiche

La Realtà Aumentata è un linguaggio a sé; il linguaggio delle immagini. Un linguaggio che ogni persona nel mondo capisce. L'utilizzo della realtà virtuale e della realtà aumentata ci aiuta a creare aule in tutto il mondo in cui anche le persone analfabete possono unirsi e diventare studenti e apprendere alcuni dei concetti che anche le persone alfabetizzate non possono capire. Lo sviluppo di app in Realtà Aumentata può avvicinare il mondo più che mai.



# 5 benefits of augmented reality in education

## 5. Higher Research Scope

Today, because of Augmented Reality app development, we are capable of looking things that we haven't seen to date even though we knew they were there. **Doctors** are capable of looking beyond their expectations since they are learning new things about the human body day by day. Also, they can teach what they've learned to their students; therefore, future doctors will become a lot more knowledgeable than the existing ones now. Some of the medical colleges have already started to implement those practices to teach students how to use Augmented Reality. In engineering, drawing is one of the most haunted subjects among students because it includes a lot of imagination. By using Virtual Reality, students can easily imagine things they could not before. Hence, along with excellent grades they also receive useful knowledge.

In schools, the subject which 'haunts' almost every other student is **math**. In math, 3D geometry is a subject which needs elaborate imagination which, however, can be visualized using Virtual Reality. Math as a whole is a subject of vision which can be taught with the help of Virtual Reality. The calculation is a secondary thing in math; the main thing is to imagine the diagram and decipher.

# 5 benefits of augmented reality in education

## 5. Ambito di ricerca più elevato

Oggi, grazie allo sviluppo di app di Realtà Aumentata, siamo in grado di guardare cose che non abbiamo visto fino ad oggi anche se sapevamo che erano lì. I medici sono in grado di guardare oltre le loro aspettative poiché stanno imparando cose nuove sul corpo umano giorno dopo giorno. Inoltre, possono insegnare ciò che hanno imparato ai loro studenti; pertanto, i futuri medici diventeranno molto più informati di quelli esistenti ora.

Alcune delle università mediche hanno già iniziato a implementare queste pratiche per insegnare agli studenti come utilizzare la realtà aumentata. In ingegneria, il disegno è uno dei soggetti più disdegnato dagli studenti perché include molta immaginazione. Utilizzando la realtà virtuale, gli studenti possono facilmente immaginare cose che prima non potevano immaginare. Quindi, insieme a voti eccellenti, ricevono anche conoscenze utili.

Nelle scuole, la materia che "perseguita" quasi ogni altro studente è la matematica. In matematica, la geometria 3D è una materia che richiede un'immaginazione elaborata che, tuttavia, può essere visualizzata utilizzando la realtà virtuale. La matematica nel suo complesso è un argomento di visione che può essere insegnato con l'aiuto della realtà virtuale. Il calcolo è una cosa secondaria in matematica; la cosa principale è immaginare il diagramma e decifrarlo.



# 10 applicazioni top

- [Types Of AR Apps](#)
- [AR Apps Top Characteristics](#)
- [List Of Top Augmented Reality Apps For Android And iOS](#)
  - [Comparison Of Best AR Apps](#)
  - [#1\) IKEA Place](#)
  - [#2\) ScopeAR](#)
  - [#3\) Augment](#)
  - [#4\) ModiFace](#)
  - [#5\) Pokemon Go](#)
  - [#6\) Medical Realities](#)
  - [#7\) Roar](#)
  - [#8\) uMake](#)
  - [#9\) Lens Studio](#)
  - [#10\) Giphy World](#)



<https://www.softwaretestinghelp.com/best-augmented-reality-apps/>

# Le tre tipologie di applicazioni

## Types Of AR Apps

### #1) Marker-based AR Apps

These use image recognition technology where they rely on black and white markers to overlay and display AR content over the user's real-life environments.

The below image is an example of a Marker-based AR app on a smartphone:





# Le tre tipologie di applicazioni

## #2) Location-based AR Apps

They work without markers and use GPS, accelerometer, or digital compass to detect the location/position of the user and then overlay digital data on real physical places. They contain additional features, allowing them to send the user notification about newly available AR content based on their location.

**For example,** the best markets around. In the below image, a **Location-based AR app provides suggestions on nearby facilities on a user's mobile phone:**



# I requisiti per AR software

**Enlisted below are the top characteristics that are to be considered when selecting/building AR Apps:**

## **#1) 3D recognition and tracking**

The app can detect and understand the spaces around the user to customize them, including recognizing 3D objects such as boxes, cups, cylinders, and toys, etc. It can recognize airports, bus stations, shopping malls, etc.

## **#2) GPS support–geolocation**

This is for location-based and location-sensitive AR apps to enable them to detect and identify real-world locations of the user.

## **#3) Simultaneous Localization and Mapping or SLAM support**

This ability allows any apps to use augmented reality to map the environment where an object or user is located and to track all their movements. The app can remember the physical position of objects, place virtual objects relating to respect to the positions, and track all movements of the real-world objects.

This technology enables people to use the app in-doors, as GPS is available for outdoor use.



# I requisiti per AR software

## **#4) Cloud and local storage support**

You get to decide whether your data will be stored locally on the user's device or cloud or both. Cloud data storage is mainly beneficial for apps requiring many markers due to storage limitations. Some development kits support thousands, while others only hundreds of markers.

## **#5) Supports many different platforms**

No matter what apps use augmented reality, support on multiple platforms including Windows, iOS, Android, Linux, and others is important.

## **#6) Image recognition**

A must-have app that will identify images, objects, and places. Some technologies used include machine vision, artificial intelligence, and camera technologies. The tracked images are over-laid with animations.

## **#7) Interoperability with other development kits**

Some development kits such as ARCore integrate with or support traditional design tools such as Unity and OpenSceneGraph kits to extend the functionality of apps.

<https://www.softwaretestinghelp.com/best-augmented-reality-apps/>

# <https://eyejackapp.com/>

creator tools for Augmented Reality and Web 3. Check out our latest project, Neonz, that explores the full potential of an AR Metaverse!



<https://www.eyejack.io/#studio>

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EyeJack is an Art and Technology company that creates experiences.

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# https://www.eyejack.io/#studio

Top Augmented Reality Cours X Pensa con la fisica - Il biennio X HoloLens 2 AR Headset: On S X Oddbods: Gorąco i Zimno (VF X EyeJack

← → ↻ https://www.eyejack.io/#studio ☆ 📧 📱 📄 ☰

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We specialise in Augmented Reality, Immersive Installations, Games and Web3.

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Lenovo

10°C  
Nuvoloso



21:39  
02/10/2022



# «Metaverse»

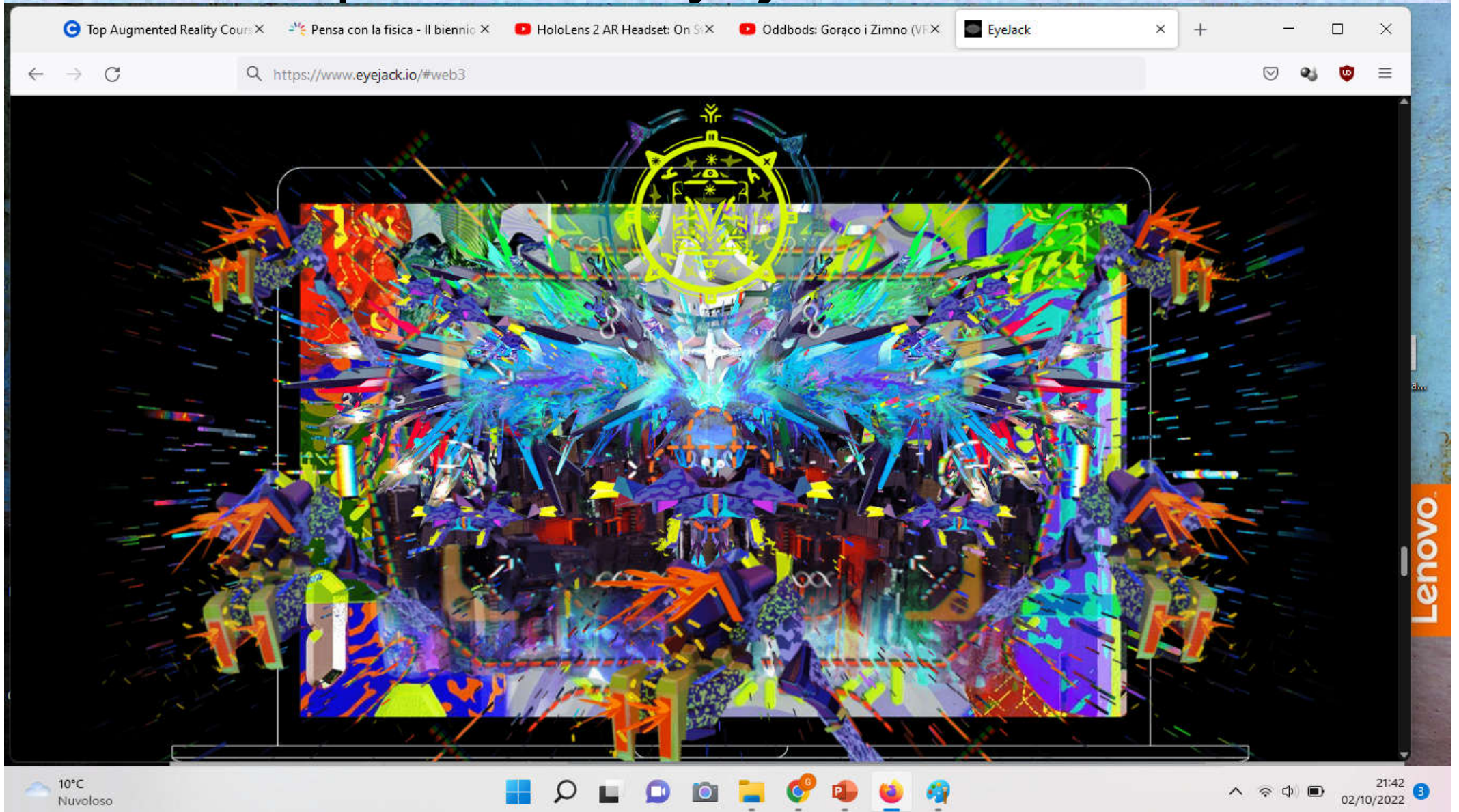
<https://www.eyejack.io/#web3>

The screenshot shows a web browser window with the address bar displaying <https://www.eyejack.io/#web3>. The browser tabs include "Top Augmented Reality Cours...", "Pensa con la fisica - Il biennio X", "HoloLens 2 AR Headset: On S...", "Oddbods: Gorąco i Zimno (VF X)", and "EyeJack". The main content area displays a vibrant, digital metaverse scene. On the left, a character in a black and purple outfit is suspended in the air. In the center, a tall, blue, metallic robot-like figure stands. To the right, a colorful, stylized character with a crown and a book is visible. The scene is filled with neon lights, glowing plants, and various digital objects like a rainbow and hearts. The bottom of the browser window shows the Windows taskbar with the system tray displaying 10°C, Nuvoloso, and the date 02/10/2022 at 21:40. A vertical "Lenovo" logo is visible on the right side of the browser window.



# «Creative studio»

<https://www.eyejack.io/#web3>






# https://mergeedu.com/

VR Traffic Rules | google search en | Google | Teacher App Libr | Top 10 Best Aug | Augmented Real | Impara la scienza

mergeedu.com


Atmosphere  
Rivers & Lakes  
Underwater  
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 **SCIENZA**

## La nuova classe di scienze

Insegna la scienza con sussidi didattici digitali e pratici e simulazioni interattive progettate per l'uso a casa e in classe.


[Per saperne di più ->](#)



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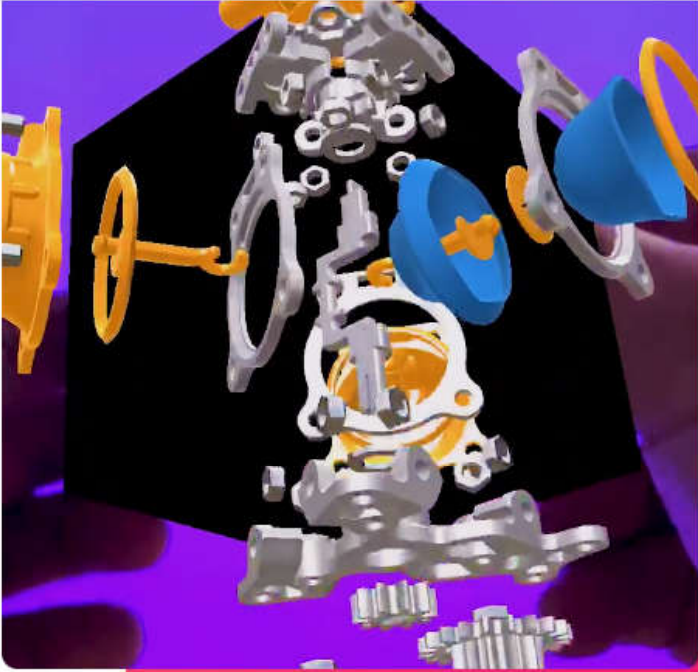


**STEM**

## Oltre la classe STEM

Ottimizza il processo di progettazione ingegneristica con oggetti 3D che i tuoi studenti possono tenere e condividere da qualsiasi luogo.

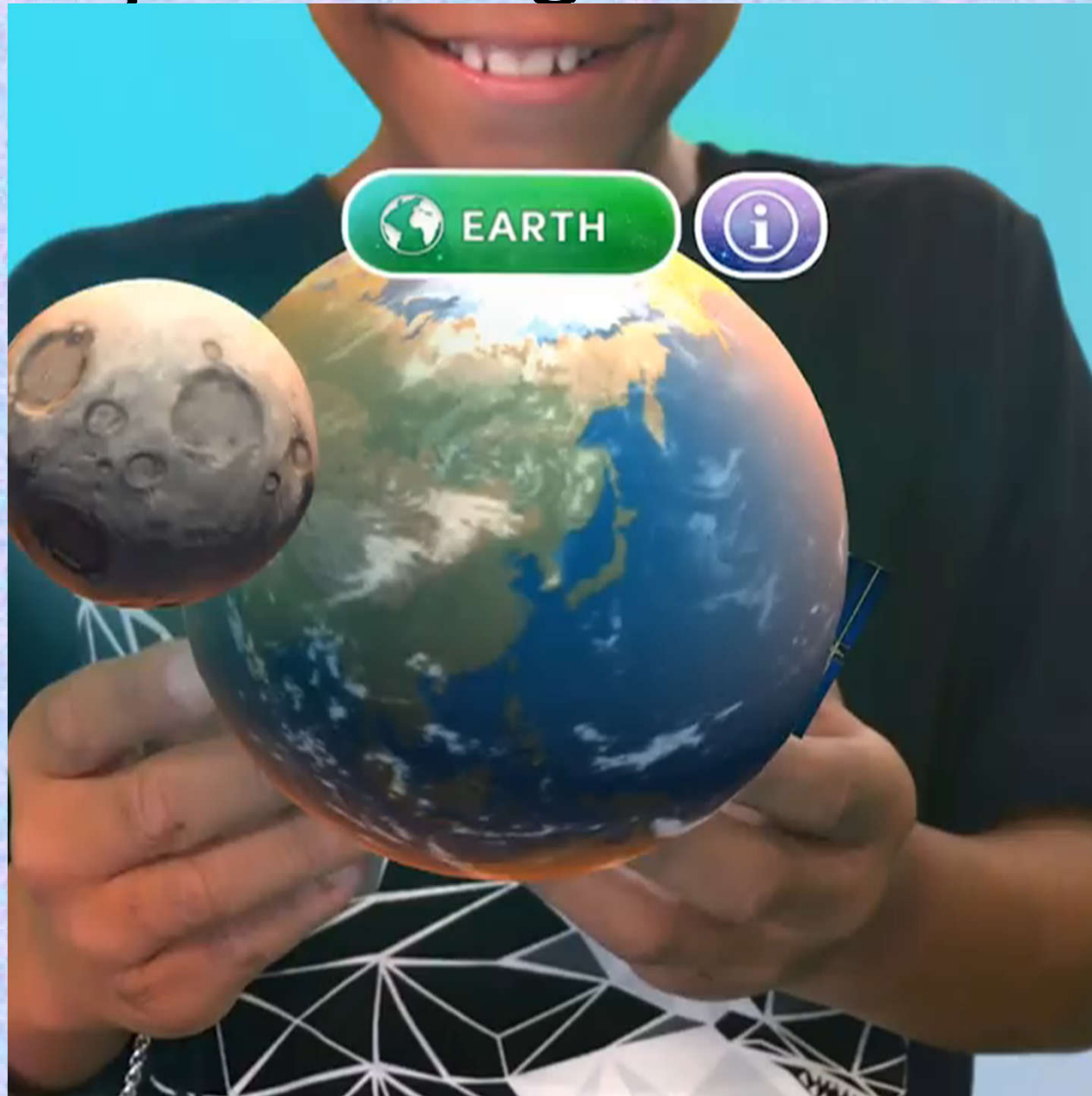
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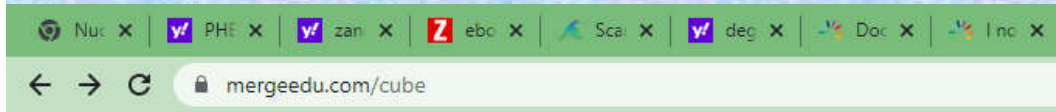
Support

12°C  
Nuvoloso



20:18  
15/09/2022

# Coding «cube»



MERGE

Cube Headset



MERGE CUBE

## Hold Anything

The Merge Cube Lets you hold digital 3D objects, enabling an entirely new way to learn and interact with the digital world.

Now students can explore a galaxy in the palm of their hand, hold fossils and ancient artifacts, explore a DNA molecule, investigate the Earth's core, dissect a virtual frog, hold and share their own 3D creations, and so much more.



Support

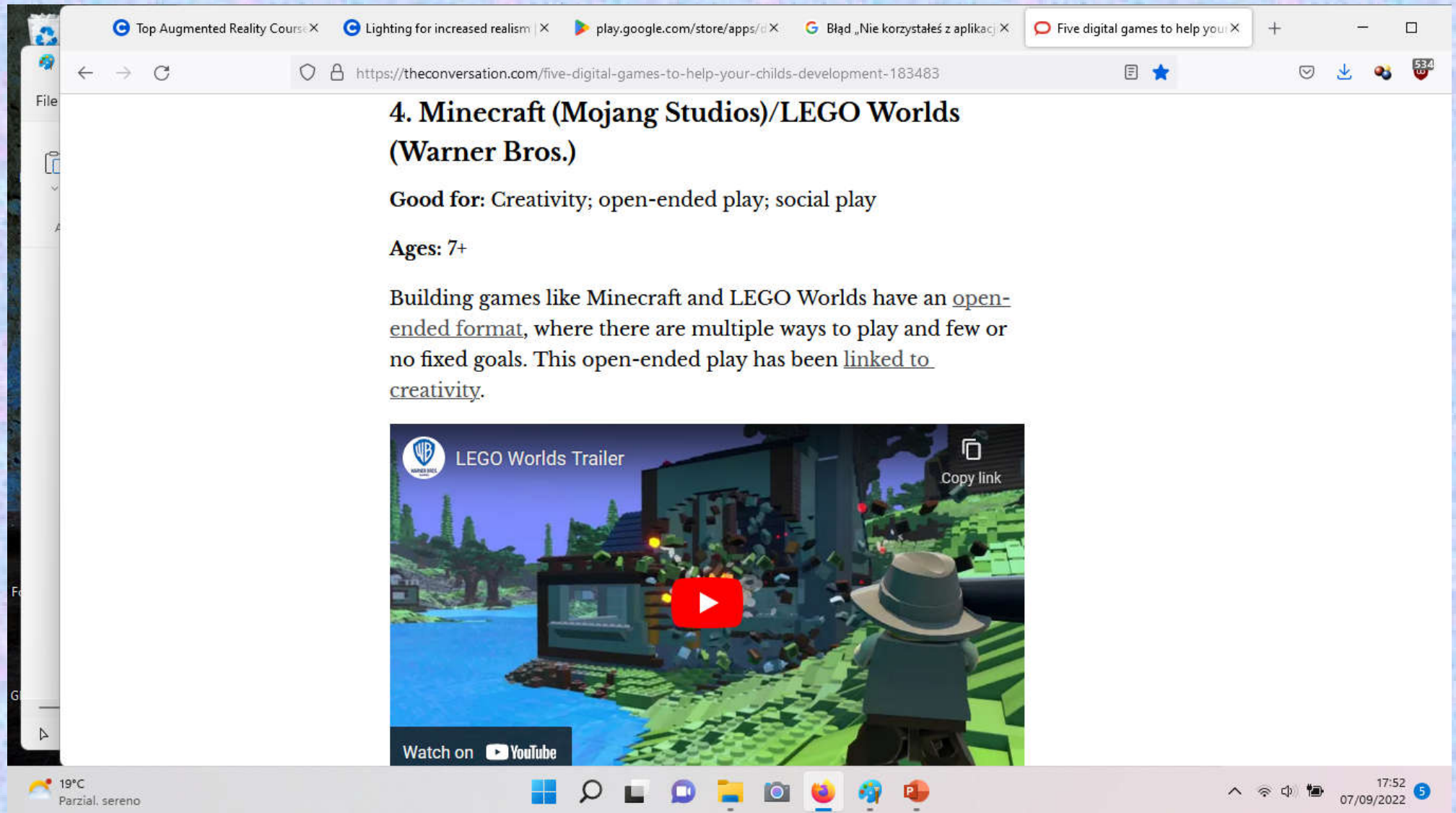
12°C  
Nuvoloso



20:21  
15/09/2022



# Minecraft



The screenshot shows a web browser window with several tabs open. The active tab is titled "Five digital games to help your child's development" and the address bar shows the URL "https://theconversation.com/five-digital-games-to-help-your-childs-development-183483". The article content is as follows:

## 4. Minecraft (Mojang Studios)/LEGO Worlds (Warner Bros.)

**Good for:** Creativity; open-ended play; social play

**Ages:** 7+

Building games like Minecraft and LEGO Worlds have an open-ended format, where there are multiple ways to play and few or no fixed goals. This open-ended play has been linked to creativity.

Below the text is a video player for a "LEGO Worlds Trailer" featuring the Warner Bros. logo. The video shows a character in a hat standing in a colorful, blocky landscape with a river and trees. A red play button is centered over the video. A "Copy link" button is visible in the top right corner of the video player. At the bottom of the video player, it says "Watch on YouTube".

The Windows taskbar at the bottom shows the date and time as 07/09/2022, 17:52, and the weather as 19°C Parzials, sereno. Several application icons are visible on the taskbar, including the Start menu, search, task view, and various software applications.

<https://theconversation.com/five-digital-games-to-help-your-childs-development-183483>

# Minecraft



Adventure  
Encounter  
Customize  
Change your world  
Build  
Brick by Brick  
Explore  
Discover  
Create Your worlds  
Your stories



# Mario & Luigi

GAMES

## Nintendo brings Mario Kart into the real world with AR RC cars

By Michael Irving  
September 03, 2020



<https://newatlas.com/games/nintendo-switch-mario-kart-live-home-circuit/#gallery:1>

# Super Mario Bros.



*Nintendo is also releasing a new Super Mario-themed Game & Watch handheld* Nintendo



# Mario & Luigi

*Mario Kart* is the latest game to cross over into the real world via augmented reality (AR). Nintendo has now unveiled *Mario Kart Live: Home Circuit*, which lets you drive a little remote-controlled kart around the floor using the [Switch console](#), dodging virtual racers and items.

Grecos  
**Teraz Grecja**

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X

Nintendo says the controls for driving the kart are the same as any regular *Mario Kart* game, although we'd imagine there'd be a bit less drifting and jumping. Players first set up the four included gates to design the track, then take the car for a spin so the game learns the layout.

## MORE STORIES



### MOBILE TECHNOLOGY

Motorola goes camera crazy with 200-megapixel Edge 30 Ultra smartphone



### PHOTOGRAPHY

Fujifilm aims high for X-H2 mirrorless camera launch

Then it's time to race. Through a camera mounted on the back, players get an over-the-shoulder view of Mario or Luigi in the kart. You'll see the real world obviously, but the AR element means virtual characters, items and environments are laid over the top.

# Mario & Luigi

Bowser's bratty kids appear as your virtual competitors, and in true *Mario Kart* style you can cheat your way to the front by picking up the familiar item boxes that appear under the gates. But your opponents can fight back of course, and getting hit by a shell or a banana will stop your little remote-controlled kart for a few seconds. On the plus side, get a mushroom and your physical kart will get a speed boost.

Le cisterne di bimbi fastidiosi compaiono come tuoi competitori virtuali, ma in vero stile di *Mario Kart* puoi ingannare in avanti raccogliendo ben conosciute scatole dei oggetti che si trovano sotto i portoni. Ma gli opposenti...

The camera also seems to recognize the gates, laying animations over them. Even your driver isn't just a static plastic figure in the middle of the screen - an animated Mario or Luigi appears over the top. And the finishing touch is that the game will spruce up your boring old living room with a lick of virtual paint to make it look like a desert, underwater track, ice world and other usual Mario locales.

Up to four people can jump in to play locally, but the catch is that each player will need their own kart, copy of the game and Nintendo Switch console. That could be a pricey games night.



# Mario & Luigi





con grande divertimento di «piccoli»



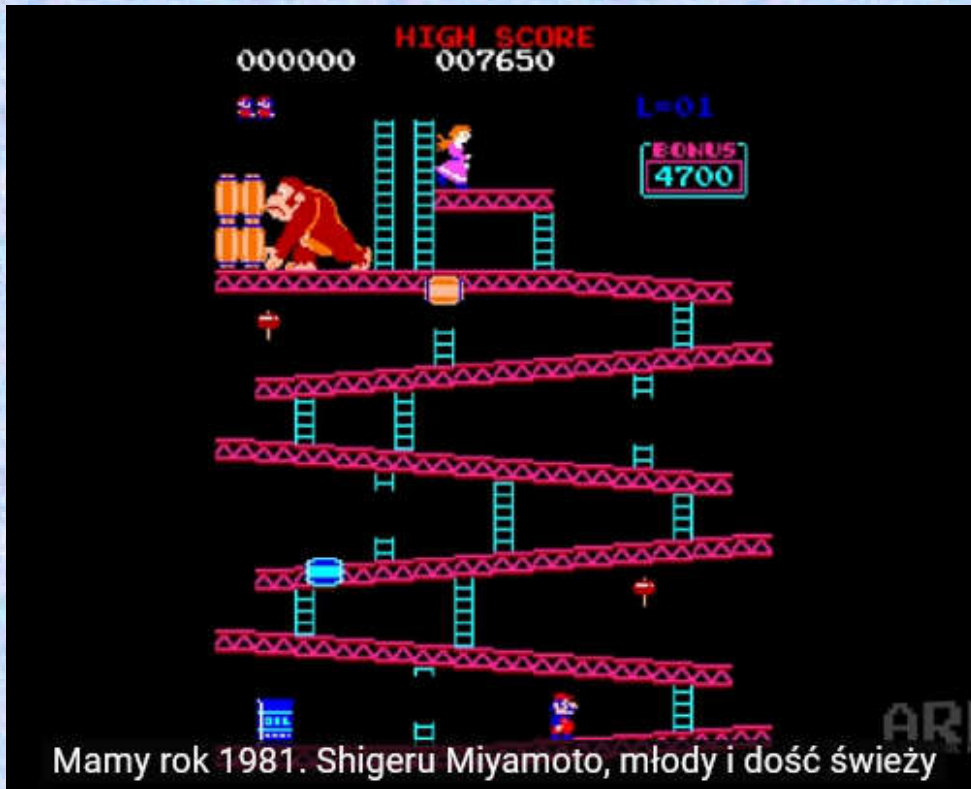
<https://www.youtube.com/watch?v=Nozjm8wHmE0>



Il gioco semplice, che «spopola» gli schermi di computer



# Nato per le macchine da sala giochi (Nintendo, 1983)



Il falegname che salva la sua  
fidanzata da un gorilla impazzito

Non solo il gioco di abilità, ma raccontare una favola  
Non inserire i gettoni, ma divertirsi

[https://www.youtube.com/watch?v=qjSZIZYwi\\_E](https://www.youtube.com/watch?v=qjSZIZYwi_E)



Due fratelli che puliscono le fogne  
di New York



# diventato un gioco semplice, per primi computer di casa (e le console)

The screenshot shows a YouTube video player with the following details:

- Video Title:** Jak powstawało Super Mario Bros.? - Retro Ex
- Channel:** arhn.eu (349 tys. subskrybentów)
- Views:** 706 954 wyświetlenia
- Date:** 2 maj 2015
- Description:** Trzydziesta rocznica Super Mario Bros. to idealna okazja, by
- Thumbnail:** A screenshot from Super Mario Bros. showing Mario at the bottom of a level with a score of 10500 and a top score of 12000. The level number is 16.1. The text 'włoski hydraulik nigdy nie będzie mógł obchodzić urodzin' is visible at the bottom of the game frame.

On the right side of the page, there is a list of recommended videos:

- Level UP: Mario's Rising Lava Escape** (4:01, 6,7 mln wyświetleń)
- YouTube Mix – arhn.eu** (Więcej treści dla Ciebie z tego kanału)
- Super Mario Bros. (1985) Full Walkthrough NES Gameplay...** (38:50, 17 mln wyświetleń)
- Jak powstawało Prince of Persia? - Retro Ex** (20:18, 255 tys. wyświetleń)
- Can Lego create a Vortex in a Sphere?** (1,5 mln wyświetleń)

The bottom of the image shows a Windows taskbar with the date 14/09/2022 and time 22:49.

Con solo due personaggi, con semplice grafica e musica, ma «favoloso»





, e stranamente, si trasforma nella  
«realtà reale»

Top Augmented Reality Course X JE McDonalds: Happy Meal How to X LEGO Super Mario - YouTube x File generated

https://www.youtube.com/watch?v=Nozjm8wHmE0

Szukaj

YouTube PL

Wszystkie Super Mario Bros. Podobne

キノピオがクッパに捕まった! 【レゴマリオ】 FUJI BRICKS 3,4 min wyświetleń • 1 rok temu 9:25

Lego NES - Magical scrolling TV, Nintendo Console with a... Gio San Pedro 2,8 min wyświetleń • 5 miesięcy temu 10:45

LEGO MARIO 87 HD 1080p Uranus Channel 1,6 tys. wyświetleń • 4 dni temu Nowy 2:29

Can Lego Peach and Toadette save Lego Mario and Luigi fro... Tok Tok Family 167 tys. wyświetleń • 1 miesiąc temu 8:20

Yena's simple way: how to play Lego Luigi^^ yenahyun 5,2 tys. wyświetleń • 6 dni temu

#SuperMario #LEGO #Nintendo

**LEGO Super Mario**

DigitalWizardsStudios 94,4 tys. subskrybentów

SUBSKRYBUJ

13°C Nuvoloso

22:29 14/09/2022

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con grande divertimento di «piccoli»



<https://www.youtube.com/watch?v=Nozjm8wHmE0>



con grande divertimento di «piccoli»



<https://www.youtube.com/watch?v=Nozjm8wHmE0>

e anche dei «grandi»





# Riassunto

- Realtà aumentata, diversamente dalla «realtà» virtuale, aumenta/ migliora/ cambia/ modifica/ migliora la nostra percezione del mondo esterno
- Comunque, RA richiede, da loro autori, le capacità di programmazione molto avanzate
- Per il momento solo un paio di «colossi» (Google, IKEA, Microsoft) riescono a proporre nuove applicazioni
- Nella lezione successiva diamo qualche esempio in più della RA, e la confrontiamo con RV
- Per il momento, l'offerta didattica della RA è molto inferiore alle risorse virtuali e multimediali presenti sul «mercato»
- I multimedia saranno tema della lezione numero 3, e alla intelligenza artificiale torniamo nella ultima lezione.