



# AR i 3D modeliranje u nastavi matematike

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# Bosiljko Đerek

- OŠ Dugo Selo, OŠ Zapruđe
- Matematika, fizika
- Učitelj savjetnik



The image shows a promotional graphic for SCIENTIX. It features a blue molecular structure in the center, a DNA double helix on the left, and various mathematical formulas in the background. The SCIENTIX logo is in the top left corner. The website address <http://scientix.eu> is displayed in large blue text in the top right. Below the molecular structure, the word "SCIENTIX" is written in large, bold, black letters, followed by the tagline "The community for science education in Europe" in smaller blue text.

**SCIENTIX**

<http://scientix.eu>

**SCIENTIX**  
The community for science  
education in Europe



# Reforme

- HNOS
- NOK
- CKR
- Strategije...

# Razmjena ideja

- Kako elemente 3D modeliranja, kroz projektne aktivnosti, uklopiti u nastavu matematike
- Na koji način nastavu „osvježiti” aplikacijom/aplikacijama koje koriste proširenu stvarnost ( AR )

## eTwinning je zajednica škola u Europi

eTwinning nudi platformu za odgojno – obrazovne djelatnike (učitelje, ravnatelje, knjižničare, itd), koji rade u školama i dječjim vrtićima europskih država sudionica eTwinninga. Putem ove platforme članovi mogu komunicirati, surađivati, razvijati projekte, razmjenjivati znanja i iskustva te postati dijelom najzanimljivije obrazovne zajednice u Europi. eTwinning se uspješno integrirao u **Erasmus+**, program Europske unije u području obrazovanja, osposobljavanja, mladih i sporta,



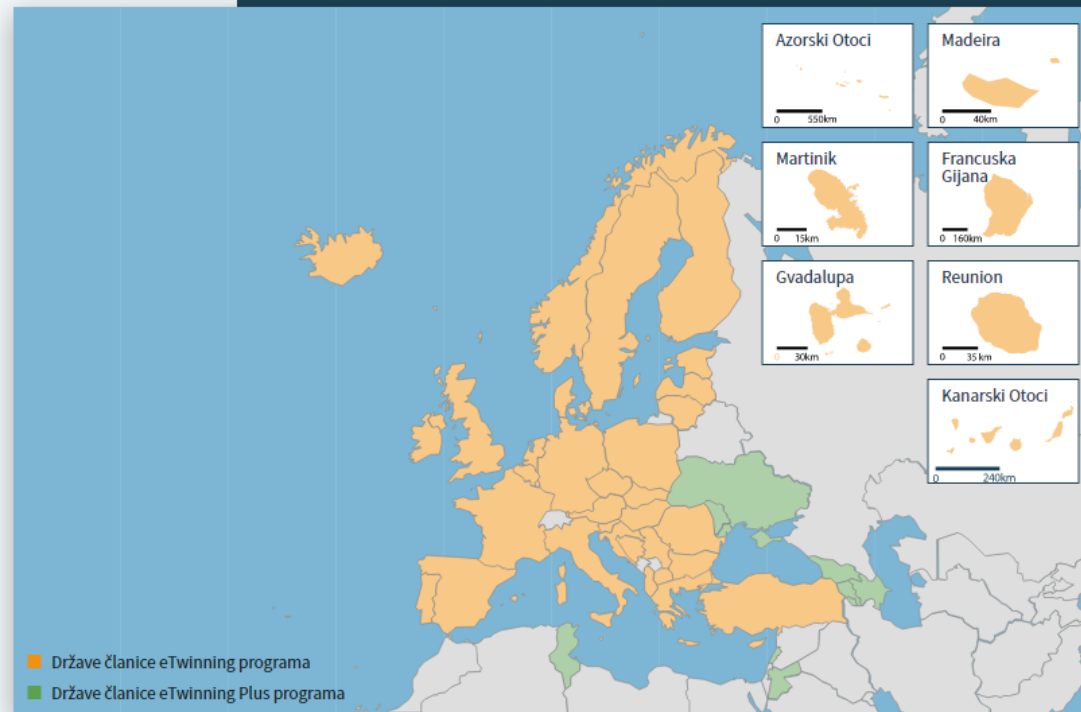
**775.412**  
UČITELJI



**205.752**  
ŠKOLE



**102.875**  
PROJEKTI





**Bosiljko Đerek**

🕒 3024 days ago

Well, been working in school for 10 years, or little bit more...teaching math and physics, math mostly.

I´m interested in project related to math, ecology and physics, and also want to improve my language skills.

I do speak English and German, but my German knowledge is mostly passive...

And finally, now i´m working with pupils 10-14 years old.





## 3D-My Dream house,my Dream city and my Dream world

19.11.2018

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It`s a one-month, math and geometry project. We will use SketchUp program for 3D modeling and students will create their 3D dream house, or some other 3D object(hospital, playground for children, church or mosque..)Then, we gather all students works into one 3D deam world....and slowly emerges: a series of houses,...

- Re-open project

- TwinSpace

- Project Card: talk to your NSS

- Download eTwinning Certificate

- Download the Quality Label for this project.

- Download the Pupil Quality Label for this project.

# eTwinning Quality Label

Bosiljko Đerek Osnovna škola Zaprude, Zagreb, Croatia, Croatia

is awarded with the Quality Label  
For the project:

## 3D-My Dream house,my Dream city and my Dream world

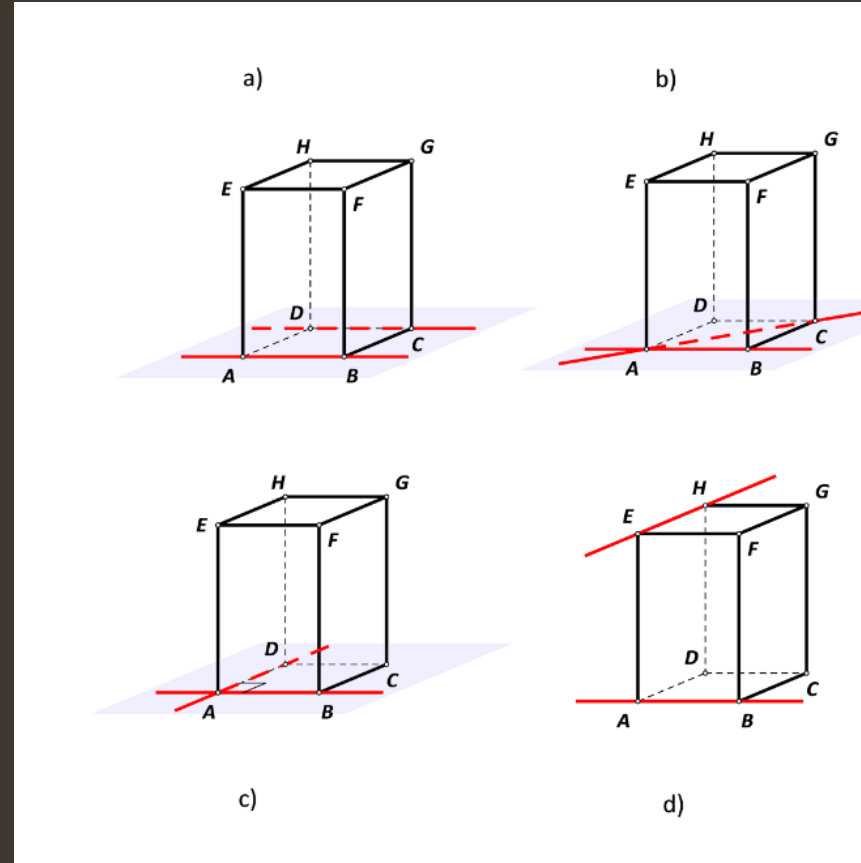
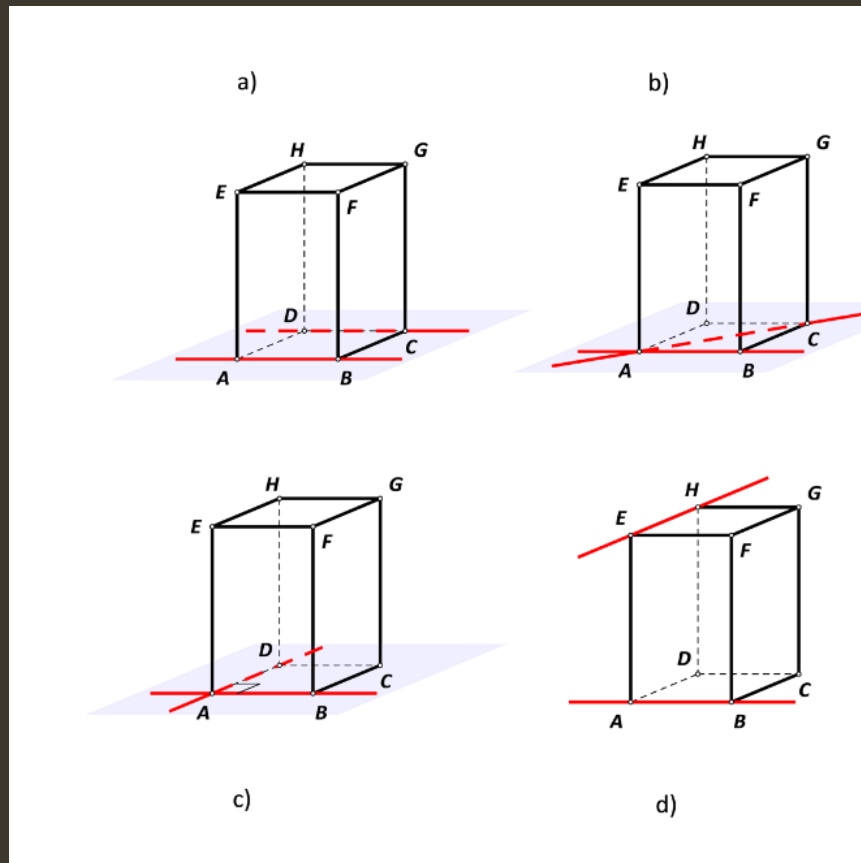
26.09.2019

*A. Gladović*

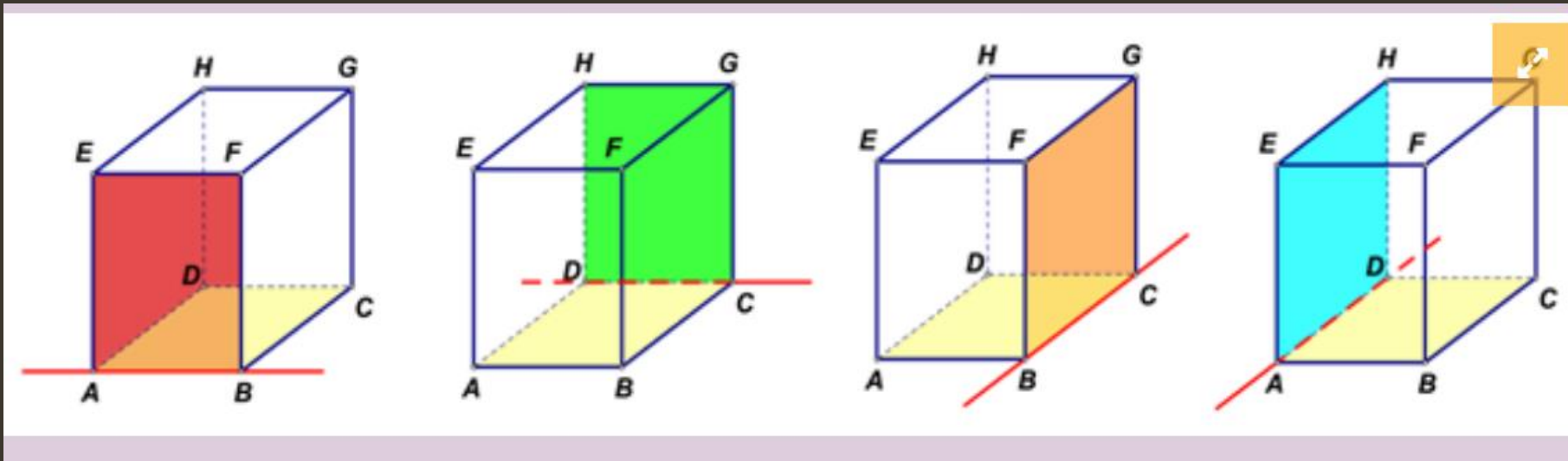
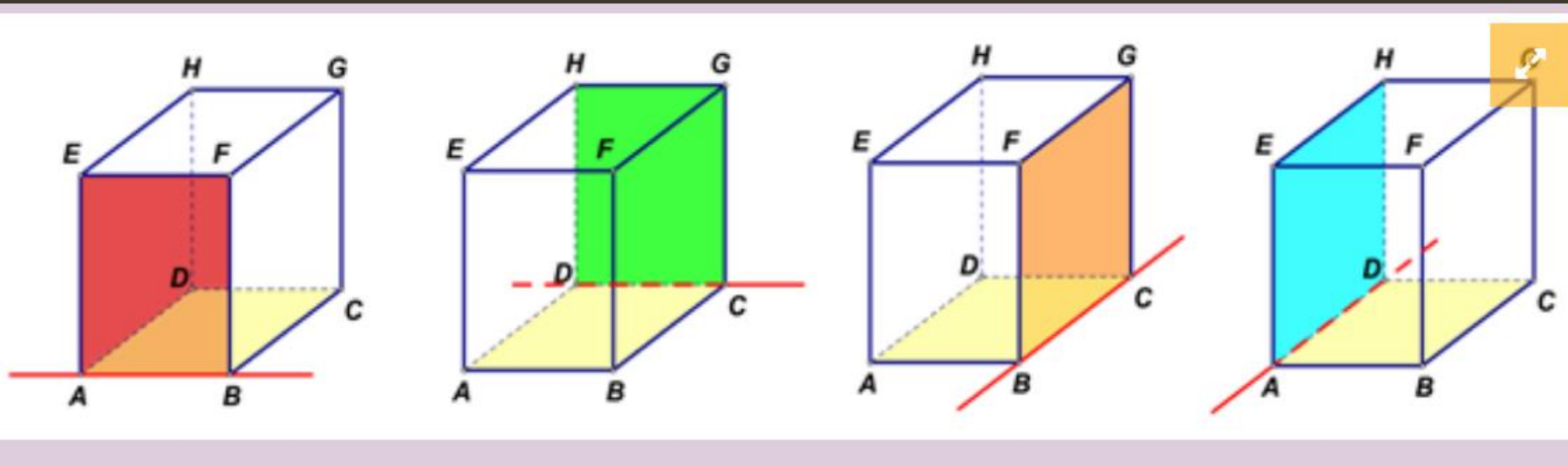
Antonija Gladović  
National Support Service  
Croatia



# Točke pravci i ravnine u prostoru



[https://edutorij.e-skole.hr/share/proxy/alfresco-noauth/edutorij/api/proxy-guest/d2d61772-7e7a-4f5b-98f9-6bbb5d5d13ca/html/1792\\_Tocke\\_pravci\\_i\\_ravnine\\_u\\_prostoru.html](https://edutorij.e-skole.hr/share/proxy/alfresco-noauth/edutorij/api/proxy-guest/d2d61772-7e7a-4f5b-98f9-6bbb5d5d13ca/html/1792_Tocke_pravci_i_ravnine_u_prostoru.html)



[https://edutorij.e-skole.hr/share/proxy/alfresco-noauth/edutorij/api/proxy-guest/d2d61772-7e7a-4f5b-98f9-6bbb5d5d13ca/html/1792\\_Tocke\\_pravci\\_i\\_ravnine\\_u\\_prostoru.html](https://edutorij.e-skole.hr/share/proxy/alfresco-noauth/edutorij/api/proxy-guest/d2d61772-7e7a-4f5b-98f9-6bbb5d5d13ca/html/1792_Tocke_pravci_i_ravnine_u_prostoru.html)

## 💡 Na početku...

U svijetu oko nas okruženi smo raznim običnim i neobičnim građevinama. One su omeđene većim ili manjim dijelovima ravnih i/ili zakrivljenih ploha, a neke od njih povezane su „dijelovima pravaca“.



# 1.Faza projekta:

- Godina 2011.
- Projekt u učionici
- 8 razred
- Matematika
- Trajanje-nekoliko školskih sati +nekoliko sati dodatne nastave matematike+moje slobodno vrijeme

- 500 kv.m
- 70%
- 3m
- 2 kata
- Uređena okućnica

# Rezultati:

- Kućice učenika
- Video učenika [video1](#)



# Diseminacija:

- 2011.god
- ?????

## 2.Faza projekta:

### 3D-My Dream house,my Dream city and my Dream world



- one-month project
- we will use SketchUp program for 3D modeling
- students will create their 3D dream house, or some other 3D object(hospital, playground for children, church or mosque..)
- we gather all students works into one 3D dream world
- we all get into a 3d world
- and slowly emerges: a series of houses, street, town ..



# Novi momenti u projektu:

- Međunarodni partneri: Srbija, Finska, Turska, Poljska, Italija
- Različita dinamika u radu
- Puuno neplaniranih aktivnosti
- Probijanje vremenskih rokova
- Tutorijali i webinarri za projektne partnere
- Puuno više potrošenog vremena

# Rezultati:

- Ulica s učeničkim radovima
- Grad u nastanku
- Web stranica
- 3D prostor
- Istraživanje kreiranja 3D igrice
- Karijerno usmjeravanje pojedinih učenika
- Puno novih vještina
- Snažna diseminacija (i ovaj webinar je dio iste)

# O SketchUp-u

- Besplatan
- Više ne
- Ima ali...

## K-12 Educational Grants

The SketchUp Pro Statewide License Grant Program provides access to SketchUp Pro, at no cost, to qualifying K-12 public schools. Please contact your regional representative to request access to your regional license.

## Find Your Representative

No grant representative in your area? Please contact your local education authority to apply.

Country

- Any -

[Are you a regional technology rep applying for a grant?](#)

## [Digital Media] Nova narudžba kupca (34742) - ožujak 15, 2018



Zahvaljujemo se na Vašem interesu za program iz naše ponude.

Kako bi imali pravo na **Edukacijsku licencu za predavače**, molim Vas, pošaljite nam dokaz da predajete na akreditiranoj obrazovnoj ustanovi aktualne akademske godine kako bi Vam mogli poslati besplatnu jednogodišnju edukacijsku licencu za SketchUp Pro. Dokaz može biti link službene web stranice obrazovne ustanove gdje se vide vaši podaci kao predavača ili sken/pdf dokumenta kao dokaz.

Ako želite možemo Vam poslati ponudu za **Jednogodišnja mrežna licenca za učionice** – minimalno 10 radnih mjesta - 1.150 kn (+ PDV). Detaljnije o edukacijskim **licenca**ma na linku: <http://www.digitalmedia.hr/proizvod/sketchup-edukacijske-licence/>

Postoji i besplatna verzija **SketchUp Free** u sklopu Internet preglednika: <https://www.sketchup.com/products/sketchup-free>

Šaljem Vam link s kojeg možete skinuti probnu verziju **SketchUp Pro 2018**:

<http://www.sketchup.com/download/all>

Detaljnije o programu možete naći ovdje:

<http://www.digitalmedia.hr/3d-design/sketchup-pro/>

Gotovi projekti za učenje korak po korak:

<https://3dwarehouse.sketchup.com/collection.html?id=36e1fa0d054a15eccc725c514c21d975>

Vodič za učenje programa:

<http://help.sketchup.com/en/article/3000081>

Video filmovi:

<http://www.sketchup.com/learn/videos/58>

### Digital Media d.o.o.

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40 000 Čakovec

tel: +385 40 343 612

fax: +385 40 343 710

e-mail: [Viktorija.Lastavec@digitalmedia.hr](mailto:Viktorija.Lastavec@digitalmedia.hr)

web: [www.digitalmedia.hr](http://www.digitalmedia.hr)

# Tutorijali:

- 2 video –prve 2min.
- 3 video – prve 2 min.
- Addons
- Plugins
- Forumi
- Blog
- Online verzija+gmail





Try SketchUp



CATEGORY

Category

Architecture

Subcategory

All Subcategories

PROPERTIES

Manufacturer Model

File Size

0 - 50 MB

Polygons

0 - MAX

ADVANCED

All Categories > Architecture (1.000+ items found)

MODELS

COLLECTIONS

CATALOGS

Relevance



Quarto Suite

Artur F.



7K



NEW SPENCER VILLA

Tainted Angel



1K



RUMAH TYPE 79

andy



2K



s

mira F.



1K

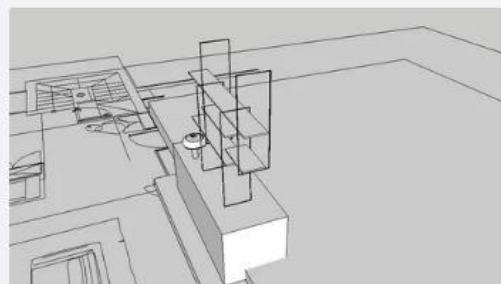


中式塔楼

小美.



10K



de castelli talea

Philipp H.



44



ATP

Sangkai W.



6K



villa

MUHAMMAD BILAL



30K

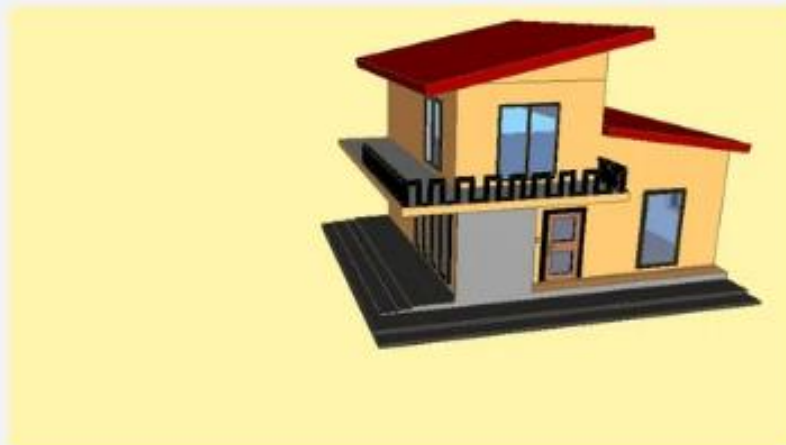


Kućica-Barbara i Hana



Bosiljko Đ.

0



Emre Yilmaz 2



Bosiljko Đ.

8



Marko Vranjin



Bosiljko Đ.

0



kućica D i P

Bosiljko Đ.



0



Mario Tot

Bosiljko Đ.



3



Stefano Denti

Bosiljko Đ.



0

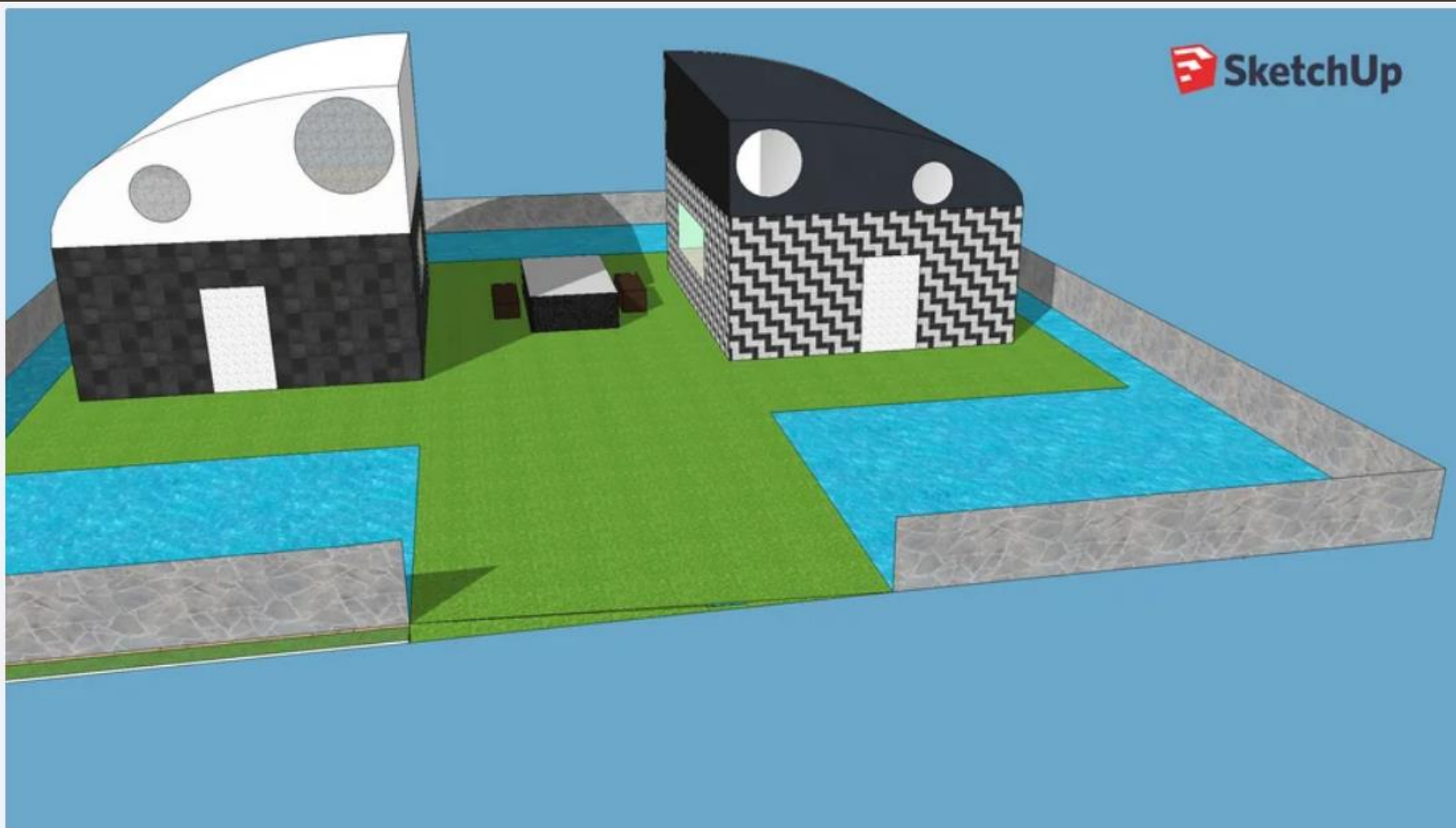


kućica-Bruno

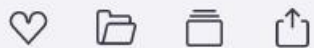
Bosiljko Đ.



1



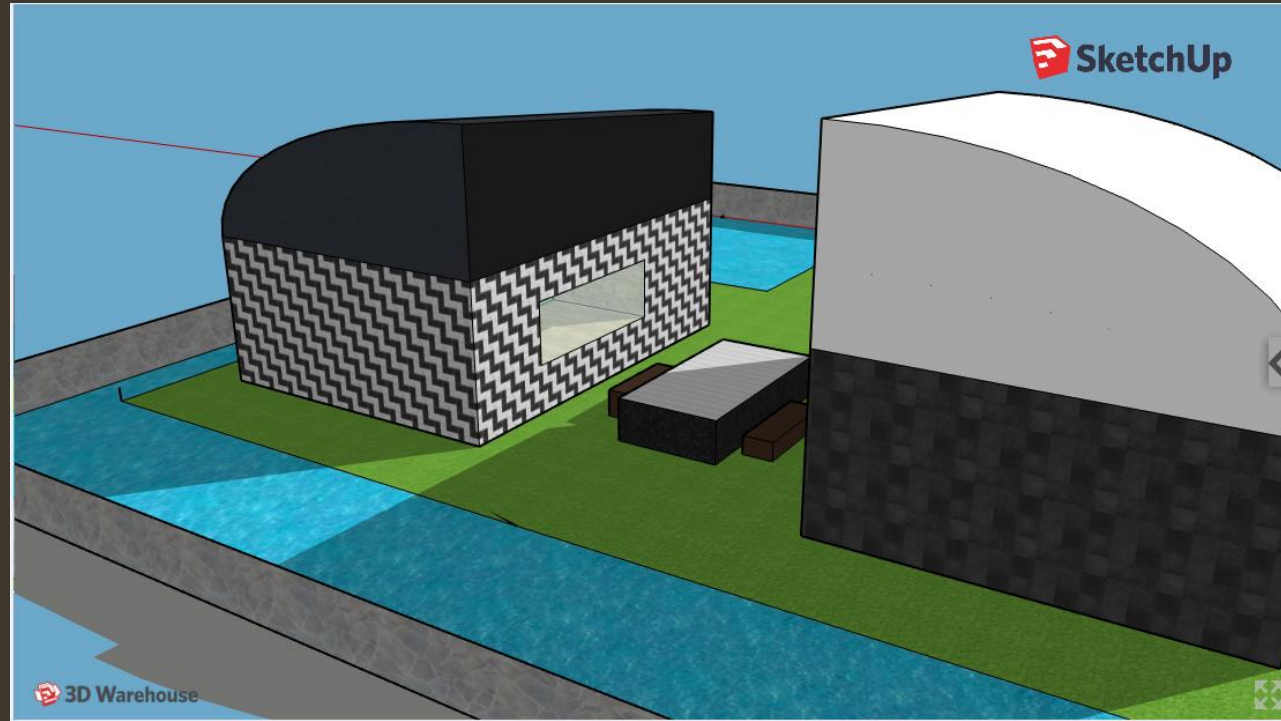
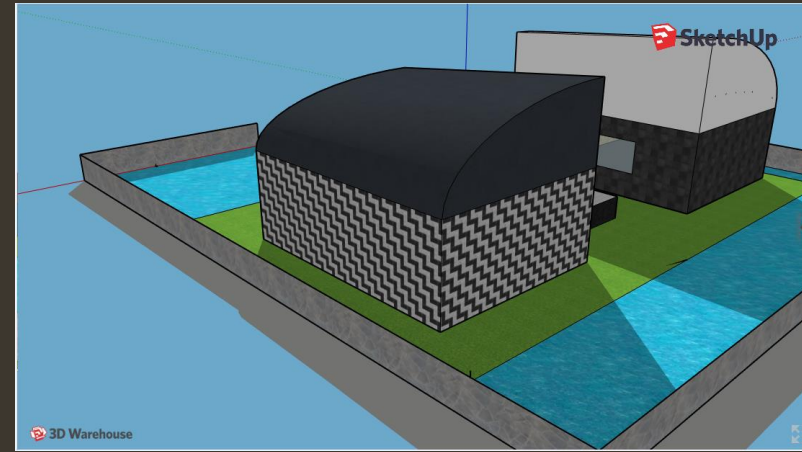
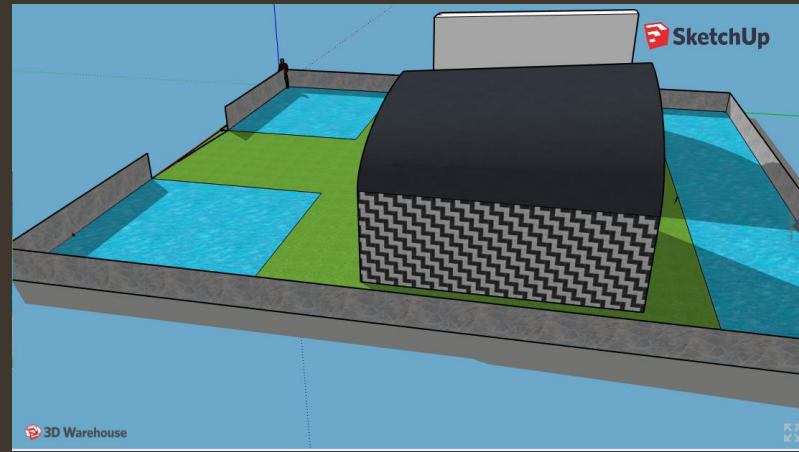
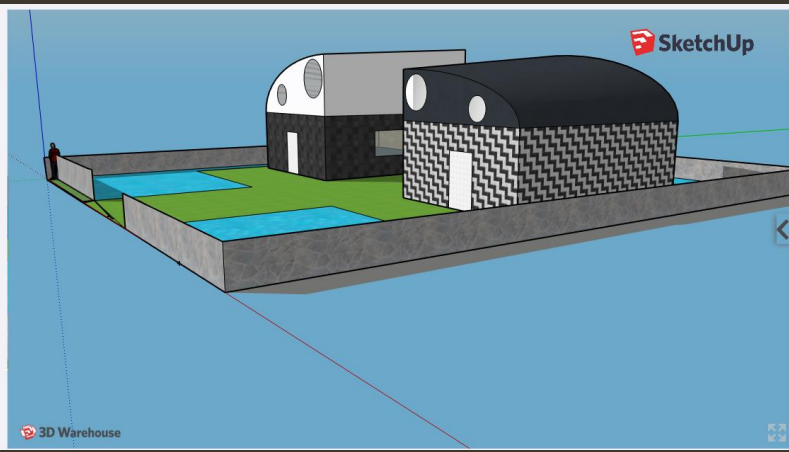
## kućica-Ena i Dora



0 Likes | 0 Downloads | 94 Views



Download





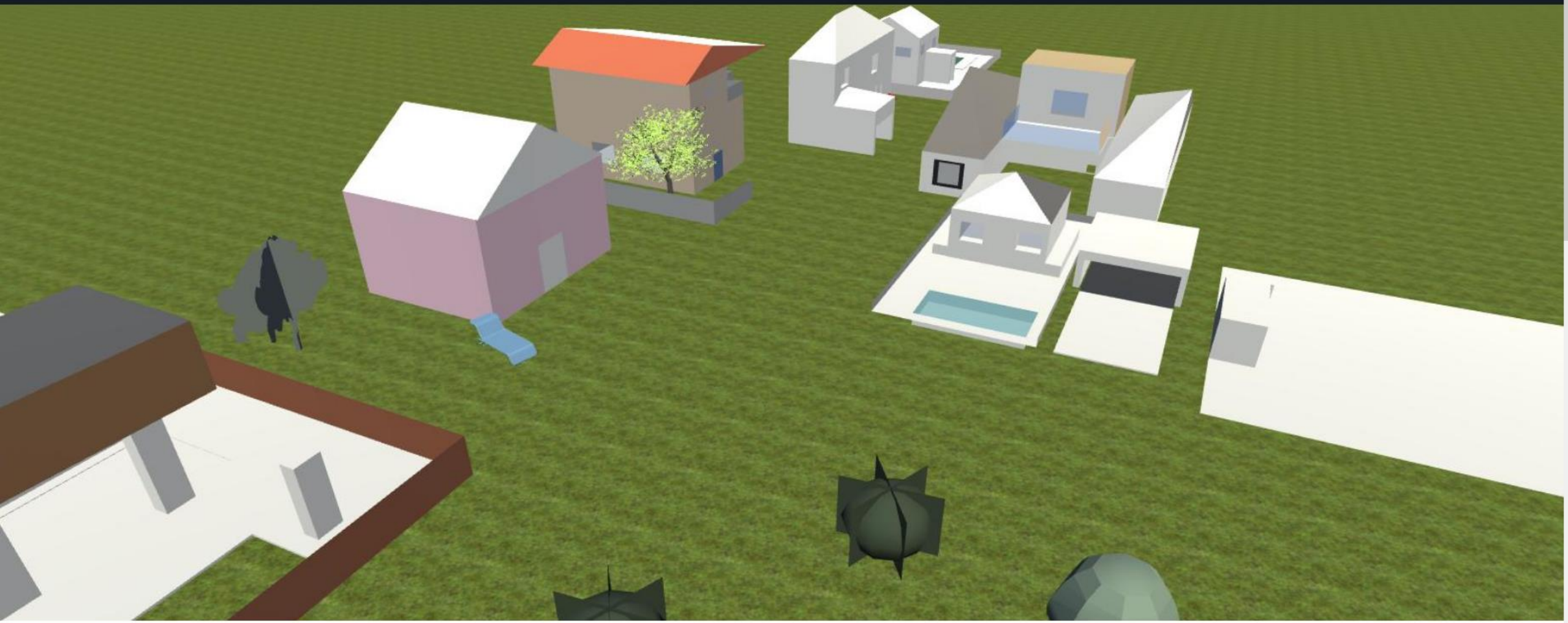
## School project 3D world



0 Likes | 6 Downloads | 212 Views



Download



# 3D school project world

VR or Web View



# Poveznice:

- <https://twinspace.etwinning.net/78084/home>
- <https://sites.google.com/view/3d-dream-house-city-world/home>
- <https://3dwarehouse.sketchup.com/user/7e0fa2a2-f037-4281-845e-7958920c3cc7/Bosiljko-D>
- <https://gallery.styly.cc/NanarSin/085c3b3c-5e2a-11e9-b34d-4783bb2170d0>



# Proširena stvarnost

- VR
- AR
- MR



MR - i.e. mixed reality



4 video

# GeoGebra AR

- 5 video
- 6 video

## GeoGebra 3D with AR (Android): Quick Setup Instructions

Autor: [Tim Brzezinski](#)

### WHAT TO DO:

First, make sure your Android device is on [this list](#). If it isn't, you'll either have to use another device or perhaps update the operating system on your current device.

### Here's what to do:

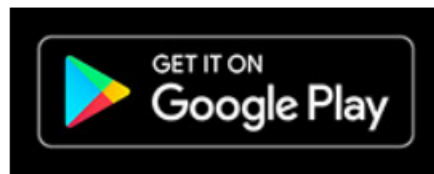
- 1) Install [Google Play Services for AR](#) on your device. It can be found on Play Store [HERE](#).
- 2) Install [GeoGebra 3D Calculator](#) on your device.
- 3) Open up GeoGebra 3D Calculator app. Create any 3D solid.

[Home](#) [About](#) [Cubes](#) [People](#) [Contact](#)



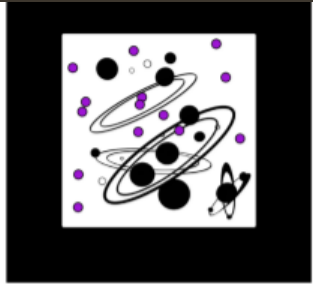
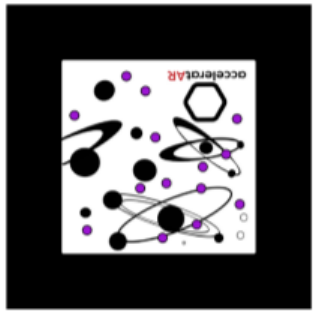
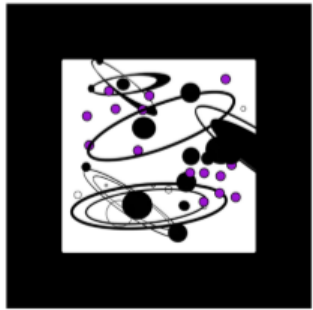
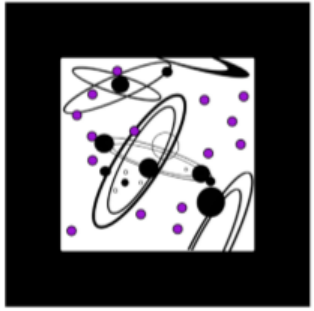
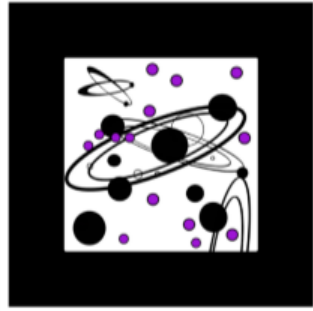
**accelerat**AR

the augmented reality particle accelerator



7 video

Particle source  
[www.acceleratorar.uk](http://www.acceleratorar.uk)



🔍 Search

 [My experiences](#)

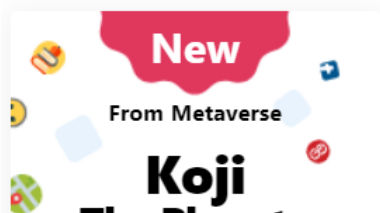
 Collections

★ My favorites

 My walls

 My polls

 Discover



## Getting Started

### Download the Metaverse app

You'll need to download the Metaverse app on your phone, tablet, or chromebook in order to use the experiences you create in the Studio.



### Additional Resources

[Watch Metaverse Tutorials](#)

[Read the Metaverse Guide](#)

[Metaverse Community](#)

[Join the conversation on Twitter](#)

### Metaverse For Teachers

Create a collection to group, view, and edit Experiences created by your students.

[Learn More](#)



🔍 Search

[Back to category](#)

 **My experiences**

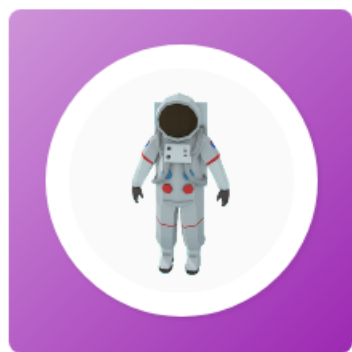
 Collections

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**6.12.2018**

@Bosiljko

 Edit

 Share



Kviz uz Večer znanosti

Scan the code with your phone to  
open this experience



Scene 36

Točno



Scene 38

Kako se zove naš izumitelj koji je izumio "spasitelja obale", tj. TORPEDO



Ivan Blaž Lupis Vukić

Ivan Pavao Lupis Vukić

Ivan Marko Lupis Vukić



Torpedirao/la si ovo pitanje!



Scene 6

Prvi funkcionalni mp3 player izumio je 1977 godine



Tomislav Uzelac

Mislav Uzelac

Mihovil Uzelac



+ Add new



## Zaokruživanje prirodnih brojeva

@Bosiljko



 Share

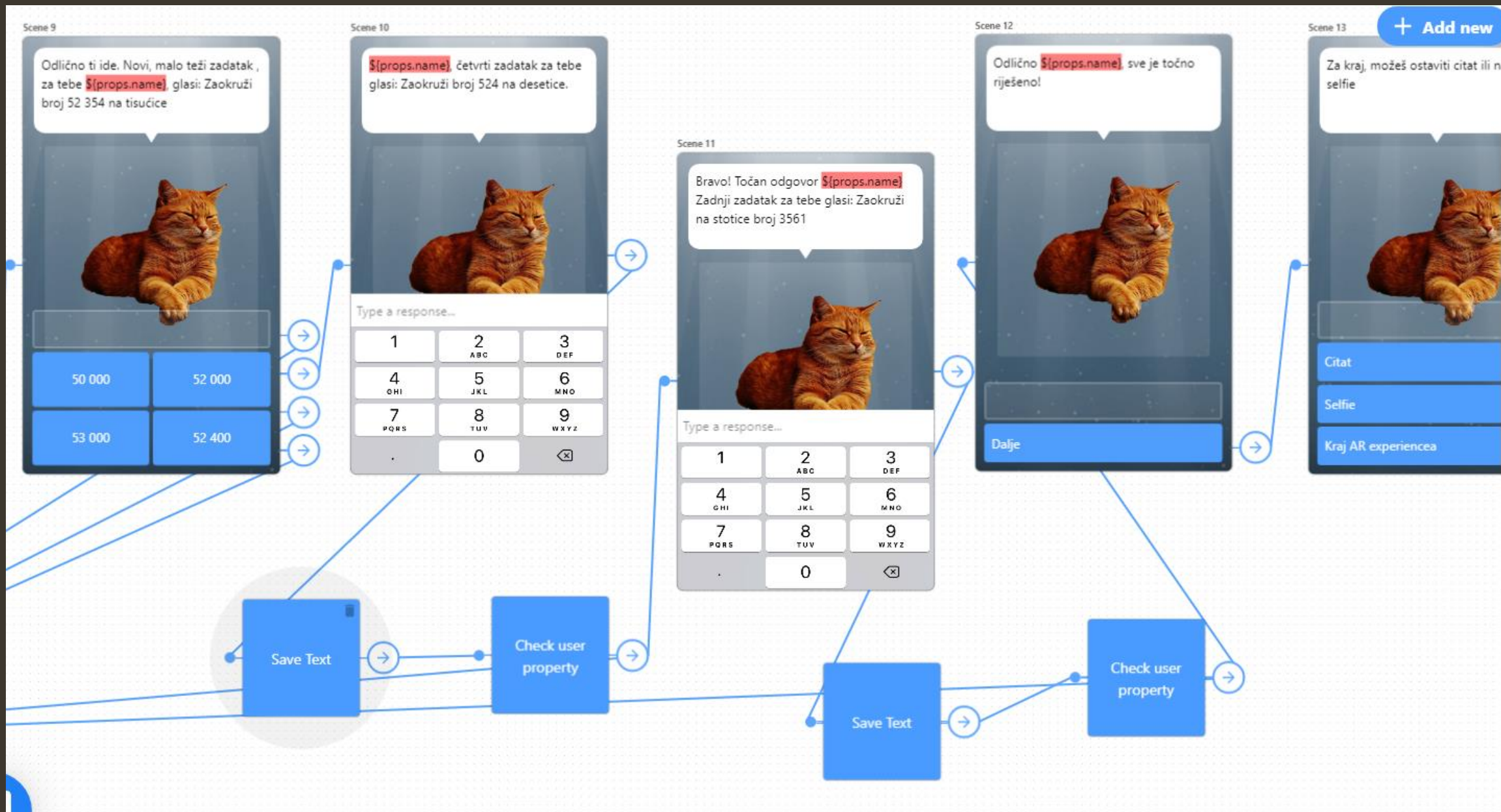


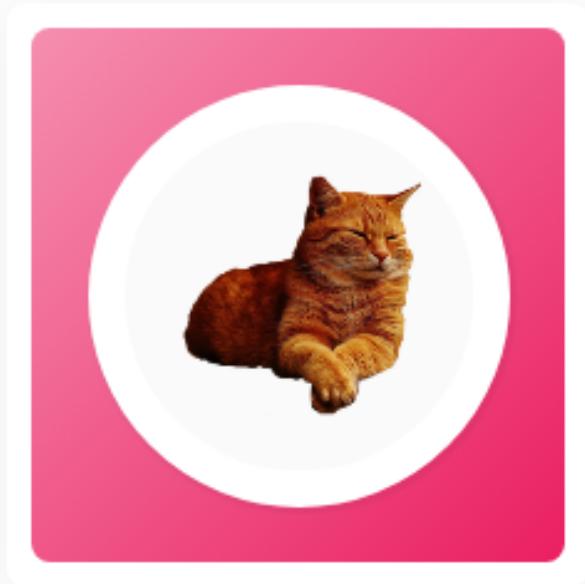
5 zadataka na temu zaokruživanja prirodnih brojeva

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**webinar**  
**6.2.2020.**

Kratki upitnik na kraju  
webinara

Scan the code with your phone to  
open this experience



# Hvala na pozornosti

- [bosiljko.derek@skole.hr](mailto:bosiljko.derek@skole.hr)
- @bosiljkodjerek

The screenshot shows a Facebook group page for 'Učitelji i projekti'. The page header includes the Facebook logo, the group name, a search bar, and navigation options like 'Bosiljko', 'Početna', and 'Kreiraj'. The left sidebar lists group features such as 'Privatna grupa', 'Informacije', 'Rasprava', 'Članovi', 'Događaji', 'Videozapisi', 'Fotografije', 'Datoteke', 'Analitika grupe', 'Zajedničko gledanje', 'Moderirajte grupu', and 'Kvaliteta grupe'. The main content area displays a large word cloud in the shape of a triangle, with words like 'ART', 'UCITELJI', 'STEM', 'MATH', 'FIZIKA', 'PROJEKTI', 'MATEMATIKA', and 'KEMIJA' prominently featured. Below the word cloud are interaction buttons: 'Vi ste član', 'Obavijesti', 'Podijeli', and 'Više'. At the bottom, there are options to 'Napiši objavu', 'Fotografija/videozapis', or 'Video Prijenos uživo', along with a search bar for 'Pretraži ovu grupu'. On the right, there is a 'POZOVITE ČLANOVE' section with a search bar and a 'ČLANOVI' section showing '3527 članova'.