



GO-LAB

next lab



Promatraj i istraži

ŽSV učitelja matematike u PŠ, Pazin



European Schoolnet

Transforming education in Europe



Ivana Gugić, prof. matematike i fizike
Go- Lab/Next- Lab ambasador
OŠ Franu Galoviću, Zagreb
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- Profesorica matematike i fizike u OŠ Frana Galovića u Zagrebu
- 8 godina radnog iskustva u nastavi
- Sudjelovanje na nekoliko međunarodnih projekata iz fizike, matematike i astronomije
- Vanjski suradnik na projektima u organizaciji NCVVO-a
- Autorica pismenih ispita znanja, recenzent udžbenika za ŠK
- Suautorica Metodičkog priručnika za nastavnike matematike (izdavač ŠK)
- Go- Lab /Next - Lab ambasador za RH

Sadržaj predavanja

- O međunarodnim projektima – European Schoolnet
- Projektna i istraživačka znanstvena metoda- primjena u nastavi
- Go – Lab/Next- Lab projekti; Go- Lab portal
- Platforma *Graasp* - platforma za pisanje pripreme za nastavni sat s primjenom istraživačke metode

European Schoolnet - PROJEKTI

Projekti i organizacije u sklopu
European Schoolnet-a

<http://www.eun.org>) :

- inGenious
- Go-lab/Next-Lab
- Scientix (CARNet koordinator)
- ISE projekt (CARNet koordinator)



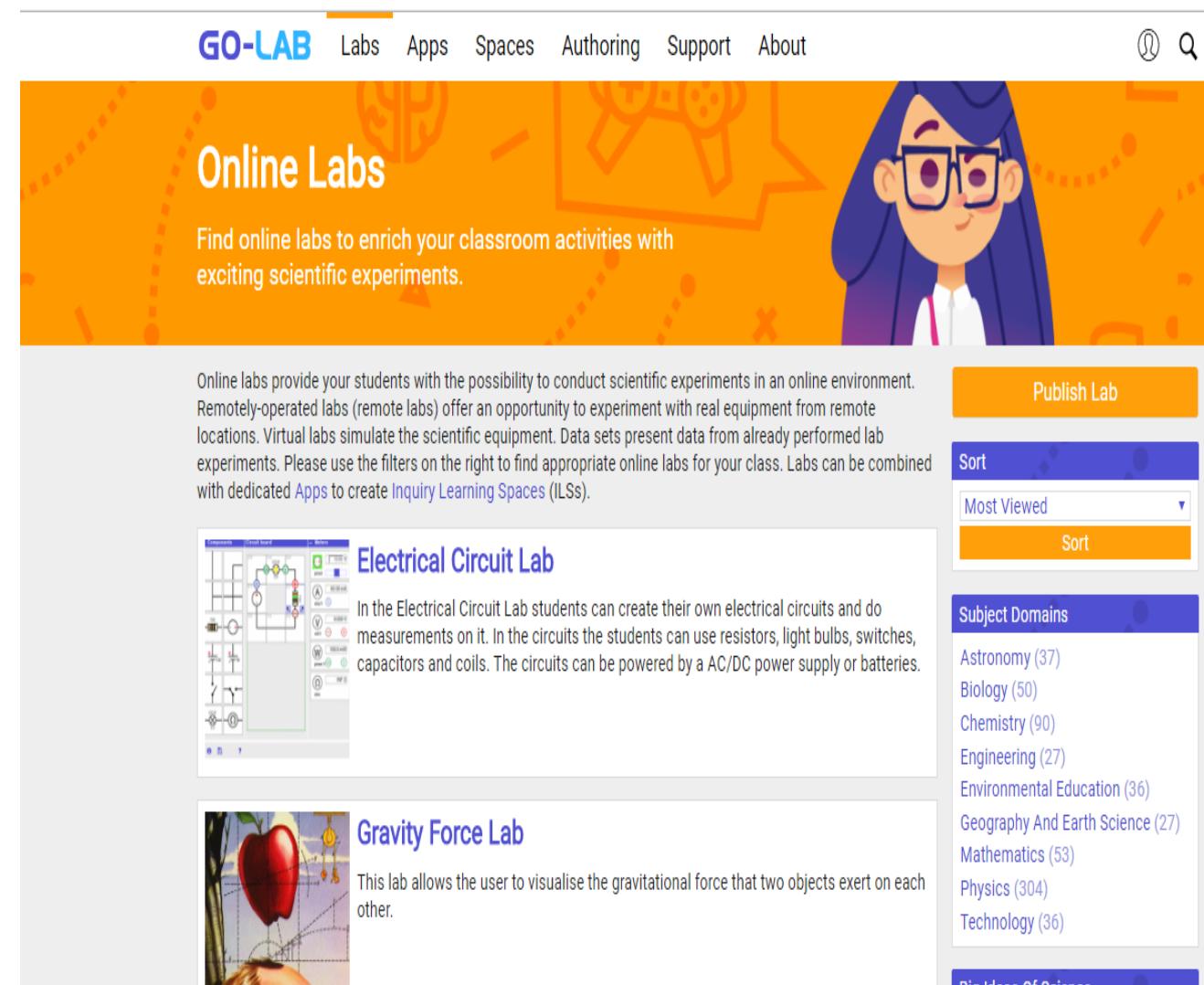
Projektna i istraživačka metoda

Ciljevi primjene projektne i istraživačke metode u nastavi:

- stvoriti kod učenika naviku na interdisciplinarni rad i na usvajanje metoda znanstveno- istraživačkog rada
- poticati razvoj komunikacijskih, organizacijskih, kritičkih sposobnosti i mišljenja učenika, matematičko-logičkog mišljenja i razmišljanja, te njegovati timski rad
- razvijati digitalnu kompetenciju kod učenika češćom uporabom IKT-a na nastavnom satu
- unaprijediti proces učenja i poučavanja novim didaktičko –metodičkim pristupima, primjenom e-učenja
- kod učenika potaknuti razvoj nekih ključnih kompetencija, a koje su važne u konceptu cjeloživotnog učenja (*matematičku i digitalnu kompetenciju, osnovne kompetencije u prirodoslovju, te kompetenciju Učiti kako učiti*)

Go- Lab portal ; Go-Lab/Next –Lab projekt

- <http://www.golabz.eu/>
- Projekti kojima je cilj korištenje IKT-a na nastavi prirodoslovno-matematičkih predmeta
- Omogućavaju uporabu on-line simulacija, virtualnih labaratorijskih aplikacija, alata za izradu kvizova, edukativne igre...
- Odabir nastavnih jedinica (istraživačkih prostora) po predmetima i dobi učenika



The screenshot shows the GO-LAB portal homepage. At the top, there is a navigation bar with links for GO-LAB, Labs, Apps, Spaces, Authoring, Support, and About. To the right of the navigation bar are search and filter icons. The main header reads "Online Labs" with a sub-instruction: "Find online labs to enrich your classroom activities with exciting scientific experiments." Below this, a text block explains that online labs provide students with the possibility to conduct scientific experiments in an online environment, mentioning remote and virtual labs, and how they can be combined with apps to create Inquiry Learning Spaces (ILSs). On the right side, there is a sidebar titled "Sort" with a dropdown menu set to "Most Viewed" and a "Sort" button. Another sidebar titled "Subject Domains" lists various subjects with their counts: Astronomy (37), Biology (50), Chemistry (90), Engineering (27), Environmental Education (36), Geography And Earth Science (27), Mathematics (53), Physics (304), and Technology (36). At the bottom, there is a section titled "Play Lab" with a link.

Virtualni labaratorijski

GO-LAB Labs Apps Spaces Authoring Support About

Area Builder



Type

Virtual Lab

Lab Owner

Amanda McGarry, Ariel Paul, Beth Stade, Bryce Grunreich, John Blanco, Karina K.R. Hensberry, Kathy Perkins, Phet Interactive Simulations

Age Range

Before 7, 7-8, 9-10, 11-12

Subject Domains

Geometry, Mathematics

Languages

Basque, Chinese, Danish, Dutch, English, French, German, Greek, Hindi, Hungarian, Italian, Japanese, Latvian, Polish, Portuguese, Russian, Serbian, Slovak, Spanish, Swedish, Turkish

more ...

Description

Create your own shapes using colorful blocks and explore the relationship between perimeter and area. Compare the area and perimeter of two shapes side-by-side. Challenge yourself in the game screen to build shapes or find the area of funky figures. Try to collect lots of stars!

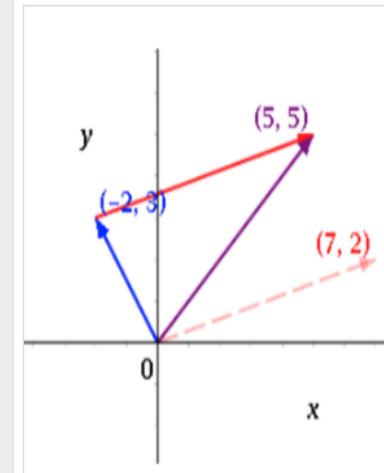
Screenshots



Additional Information

GO-LAB Labs Apps Spaces Authoring Support About

Vector Addition



Description

Tool to practice with vector addition

Type

Virtual Lab

Lab Owner

Denis Gillet

Contact Person

Denis Gillet

Age Range

13-14, 15-16, Above 16

Subject Domains

Elementary Plane Geometry, Geometry, Mathematics

Languages

English

Booking Required

No

Registration Required

No

Preview Link

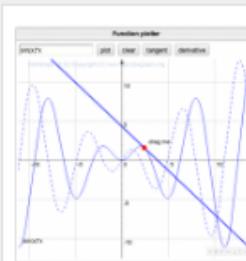
<http://gateway.golabz.eu/os/p...>

more ...



GLOBAL ONLINE SCIENCE LABS
INQUIRY LEARNING AT SCHOOL

Aplikacije



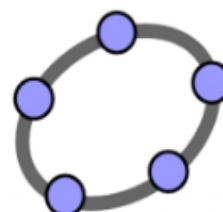
Function Plotter

This app plots mathematical functions. Multiple functions can be drawn in the same plot. Derivative and a tangent can be inserted for the last added function via the press of a button.



Calculator

A simple calculator which supports addition, subtraction, multiplication, division, square root and exponentiation.



Geogebra

The Geogebra app enables teachers to embed Geogebra materials to their Inquiry Learning Spaces. Links for Geogebra materials can be retrieved from <https://www.geogebra.org/>

Sysquake Mobile
Sysquake.js: 1.0
x = 0.5*(15+4*pi);
y = -exp(2*acos(x));
plot(x,y, 'e*')

Sysquake

This app allows the use of Matlab in an Inquiry Learning Space.



GO-LAB

GRAASP –platforma za pripremu nastavnih jedinica (Istraživačkih prostora, ILS-a – “Inquiry learning spaces”) s primjenom istraživačke metode

<http://graasp.eu/>



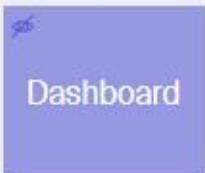
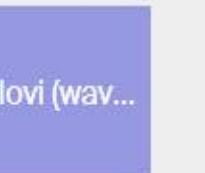
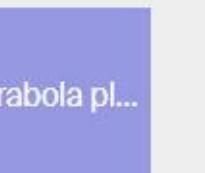
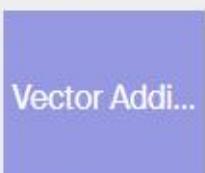
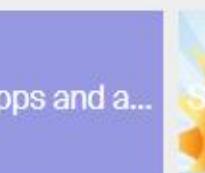


Search

Home > Ivana Gugić

Ivana Gugić

+  

 Introduction... Introduction to go-lab-next-lab project	 Find-the-mi... Find-the-mistake-in-the-circuit	 Electrical ci... Electrical circuit lab	 Earthquakes Earthquakes	 Earthquakes Earthquakes
 Dashboard Dashboard	 Sinking and... Sinking and floating	 Sinking and... Sinking and floating	 Gravity Forc... Gravity Force Lab	 Valovi (wav... Valovi (waves)
 Fractions In... Fractions Introduction (uvod u razlomke)	 Fractions In... Fractions Introduction (uvod u razlomke)	 Sun4all Sun4all	 Statistics of... Statistics of rolling dice	 Parabola pl... Parabola plotter
 Vector Addi... Vector Addition	 Golab@Brussels2016 Golab@Brussels2016	 Valovi (wav... Valovi (waves)	 Apps and a... Apps and a...	 Solar Water... Solar Water Heating

Settings     

Change navigation style
 Breadcrumb
 Pyramid

 Profile metrics public

[Change password](#)

[Account deactivation](#)

The screenshot shows a NextLab workspace interface. At the top right is the 'next lab' logo. On the left, there's a search bar and a breadcrumb trail: Home > proba. The main title 'proba' is displayed with a dropdown arrow. Below it, a placeholder text 'Write a description here' is followed by a plus sign icon. To the right are icons for settings, members, messages, and other workspace management.

The workspace content area has a dark blue header with the title 'proba'. It contains several cards:

- teorija** (purple card)
- Investigation** (purple card)
- Conclusion** (purple card)
- Discussion** (purple card)
- Student Da...** (purple card)

Below these are smaller cards:

- Teacher Da...** (purple card)
- About** (purple card)
- Vault** (purple card)

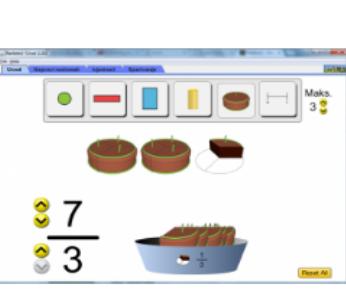
At the bottom left, there are statistics: 0 likes, 2 views. On the right side, there's a sidebar titled 'Members' with a note: 'Private: Only members can view this space'. It includes sections for 'Owners' (Ivana Gugić, owner) and 'Editors' (AngeLA - Go-Lab Analytics Services, editor). The background of the workspace area features a starry galaxy image.

Primjer pripreme za nastavni sat- Valovi i Uvod u razlomke

GO-LAB Search Online Labs Apps Inquiry Spaces Big Ideas Support About Forum

Fractions Introduction (uvod u razlomke)

by Ivana Gugic



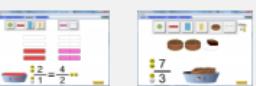
Age range: 10-12
Language: Croatian
Level of difficulty: Medium
Average learning time: 2 didactic hours
Access rights: Creative Commons Attribution (CC BY)
Contact Person: Ivana

[Like 1](#) [Tweet](#) [G+](#)

[Preview](#)

[Copy & use this Inquiry Space](#)

Description:
 Istražujte osnovno o razlomcima: koliko je $\frac{1}{3}$ čokoladne torte, polovina kruga... s pomoću zabavne interaktivne simulacije predvidite i objasnite kako se mijenja vrijednost razlomka ako se promijene vrijednosti brojnika ili nazivnika, napravite dva razlomka jednakih vrijednosti, upoređujte razlomke. Spojite oblike i razlomke, osvojite zvjezdice (poene).



GO-LAB Search Online Labs Apps Inquiry Spaces Big Ideas Support About Forum

Valovi (waves)

by Ivana Gugic



Age range: 12-14
Language: Croatian
Level of difficulty: Medium
Level of interaction: Medium
Average learning time: 2 didactic hours
Access rights: Creative Commons Attribution (CC BY)
Contact Person: Ivana

[Like 0](#) [Tweet](#) [G+](#)

[Preview](#)

[Copy & use this Inquiry Space](#)

Description:
 Explore with PhET simulation, videos and worksheets what is a wave, what makes a wave a wave, what are some basic characteristics of waves, are all waves the same, what is wavelength, wave amplitude and frequency, how tsunamis are formed and what causes an earthquake.

Primjer ILS-a - Uvod u razlomke

The screenshot shows a digital learning space interface. On the left, a large red vertical bar features the number '1'. The main area displays a grid of colored blocks representing fractions. The visible blocks include:
- A pink block with $\frac{1}{2}$
- An orange block with $\frac{1}{3}$
- A yellow block with $\frac{1}{4}$
- A green block with $\frac{1}{5}$
- A blue block with $\frac{1}{6}$
- A dark blue block with $\frac{1}{8}$
- A purple block with $\frac{1}{10}$
- A light blue block with $\frac{1}{10}$
- A white block with $\frac{1}{10}$
- A grey block with $\frac{1}{10}$
The top navigation bar includes a 'Search' icon, a user profile icon, and a 'Sharing' section with options like 'Rate this space', 'Show standalone view', and social sharing buttons for Facebook, Twitter, Google+, and Email.



Kad kruh preprežemo na dva jednakna dijela dobivamo polovine, kad čokoladu podijelimo na 5 jednakih dijelova dobivamo petine, kad tortu režemo na 8 jednakih šnita dobivamo osmine....Polovine, četvrtine, petine, osmine nazivaju se RAZLOMCI.

Razlomci su brojevi koje dobijemo djeljenjem cjeline na manje jednake dijelove.

U ovoj vježbi istražiti ćete osnovno o razlomcima.





Najprije u bilježnicu odgovori na pitanja, a zatim provjeri s pomoću aplikacija u Istraživanju jesu li tvoji odgovori točni.

1. Što pokazuje brojnik (gornji broj), a što nazivnik (donji broj) ?
2. Koju računsку radnju zamjenjuje razlomak?
3. Što iskazujemo razlomkom?
4. Može li razlomak biti jednak 1? Kada je razlomak manji, a kada veći od 1?
5. Može li se svaki prirodan broj zapisati u obliku razlomka?
6. Može li se svaki razlomak zapisati u obliku prirodnog broja?
7. Istraži što su mješoviti brojevi i od čega se sastoje.
8. Istraži za koje razlomke kažemo da su pravi, a za koje da su nepravi razlomci? Nacrtaj sliku s pomoću aplikacija pravog i nepravog razlomka.

Fractions Introduction (uvod u razlomke)

ivana ▾

Uvod Teorija Istraživanje Zaključak

S pomoću interaktivnih simulacija provjeri točnost svojih odgovora u *Teoriji* te riješi zadatke.
Simulaciju pokreni na "Run now" ili download.

1. zadatak:
Odaberi pravokutnik i istakni njegove dvije trećine. Precrtaj sliku u bilježnicu.

2. zadatak:
Odaberi tortu i označi dvije petine šnita. Precrtaj sliku u bilježnicu.

3. zadatak:
U igri "Jednakost razlomaka (equality lab)" pronađi dva razlomka jednakata:
a) jednoj trećini b) pet polovine c) tri šestine

PhET INTERACTIVE SIMULATIONS

Simulations

- New Sims
- HTML5
- Physics
- Biology
- Chemistry
- Earth Science
- Math**
- Math Concepts
- Math Applications
- By Grade Level
- Elementary School
- Middle School

Fractions Intro

Fractions

Equivalent Fractions

Improper Fraction

DONATE

PhET is supported by
Theresa Neil
STRATEGY + DESIGN
and educators like you.

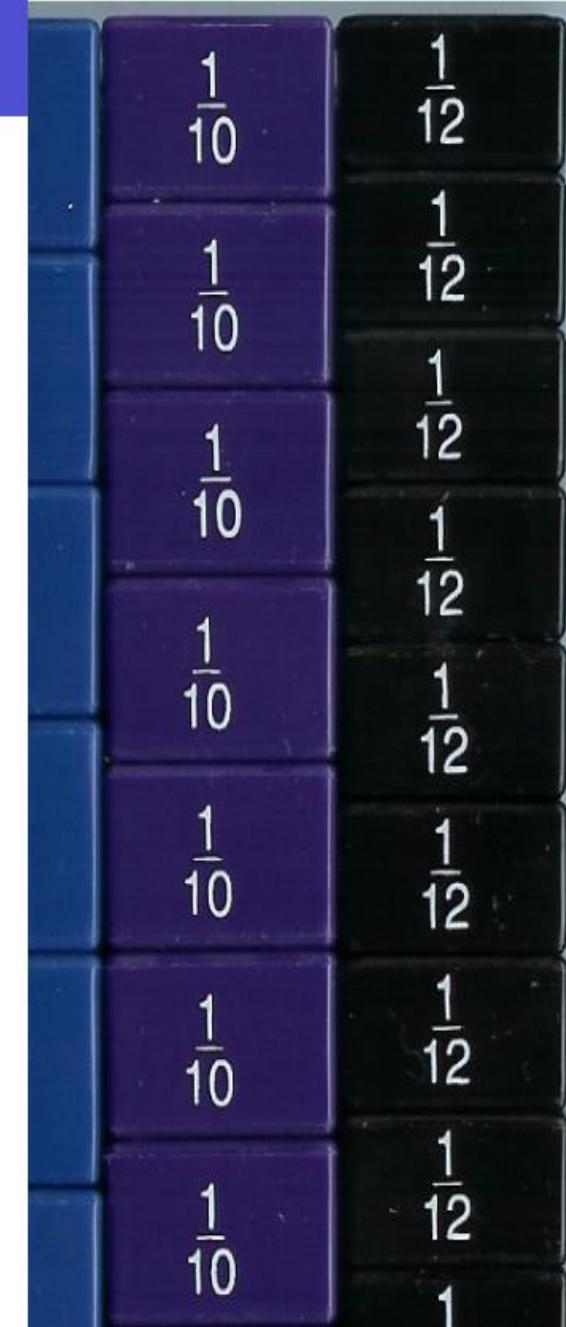
DOWNLOAD **EMBED**

Čekanje phet.colorado.edu...



Napiši svoj zaključak koristeći se odgovorima na pitanja iz Teorije što si osnovno naučio/naučila o razlomcima.

Napravi kviz o razlomcima s pomoću neke aplikacije za izradu kvizova.



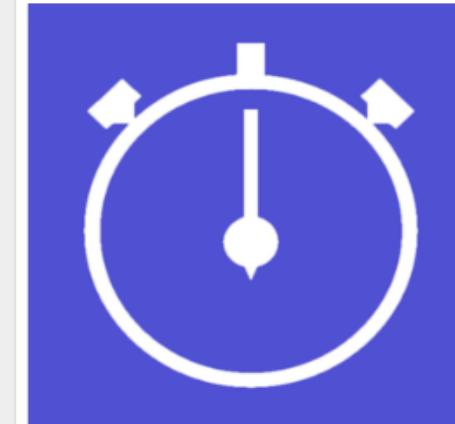
Aplikacije koje se mogu postaviti unutar nastavne jedinice (ILSa) za praćenje rada učenika

Description

This app displays the number of actions of the students in an ILS per app as a bar chart. Students can adapt the visualisation by filtering for apps and by altering the representation.



Student Time Spent



Category

Go-Lab Inquiry Apps

Creator

David Sandoz

License

Creative Commons Attribution-Sharealike ((
BY-SA))

Source Code

<http://shindig2.epfl.ch/gadge...>

Works Offline

No

Description

This app displays a table with the time spent for each student in each phase of an Inquiry Learning Space (a Go lab learning environment). The time spent is updated in real time for each user and phase.

Please, place this app in an inquiry space to visualise the time spent by users in inquiry phases.

	Orientation	Conceptualisation	Investigation	Discussion	Conclusion	Dashboard
Average time	00:30	00:02	00:10	00:05	00:00	01:00
stennn	00:00	00:00	00:00	00:00	00:00	04:47
ton	00:31	00:01	00:00	00:00	00:00	01:41
Alex	00:00	00:00	01:11	00:07	00:52	00:00
adrian	00:00	00:00	00:00	00:00	01:27	00:14
chus	00:03	00:01	00:01	00:10	01:04	00:01
amy	00:02	00:03	00:01	00:02	00:02	00:22
voz	00:00	00:00	00:00	00:00	00:05	00:00

Teacher Feedback



Category	General Apps
Creator	Alexandros Trichos, Panagiotis Zervas
License	Creative Commons Attribution-Noncommercial (CC BY-NC)
Source Code	http://shindig2.epfl.ch/gadge...
Works Offline	No

Description

The teacher feedback app enables teachers to provide feedback to their students. This can be achieved by opening the link of the standalone user (available in the members section at the authoring view), proceed to the phase where this app has been located, and enter the comments in box

Please type your feedback here

Input Box

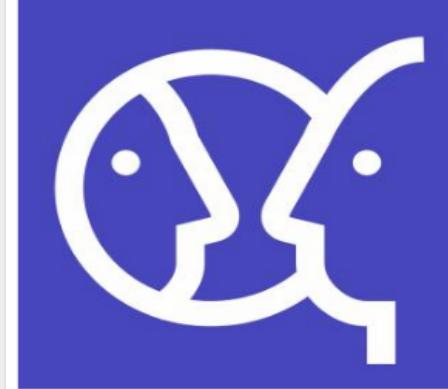


Category	General Apps
Creator	Alexandros Trichos, Panagiotis Zervas
License	Creative Commons Attribution-Noncommercial (CC BY-NC)
Source Code	http://shindig2.epfl.ch/gadgets/
Works Offline	No

Description
A simple note taking app for the students. This app automatically saves the notes for each student separately.

Type here

Reflection Tool



Category	Go-Lab Inquiry Apps
Creator	Anjo Anjewierden, Sven Manske, Tobias Hecking
License	Creative Commons Attribution-Sharealike (CC BY-SA)
Source Code	http://go-lab.gw.utwente.nl/p...
Works Offline	No

Description
The Reflection Tool gives feedback to students about their use of an Inquiry learning Space (ILS). The tool displays the percentage of time a student has spent in the various inquiry phases compared to a percentage norm set by the teacher (see image). Students are prompted to reflect on their ILS use by a number of questions teachers can enter during configuration.

  **Reflecting on time spent in inquiry phases**

Reflection involves thinking back about what you did and the choices you made. Please look at the activity time log below to recall how you spent your time in the inquiry phases. A suggested norm time, provided by the ILS creator, has been added to help you make comparisons.

File Drop



Description

This app allows students to upload files, e.g., assignment and reports, to the Inquiry learning Space. The app also allows teachers to download the uploaded files.

Category	Collaboration Apps
Creator	Maria Jesus Rodriguez Triana, Na Li
License	Creative Commons Attribution-Noncommercial (CC BY-NC)
Source Code	http://shindig2.epfl.ch/gadge...
Works Offline	No

Report Tool



Category	Go-Lab Inquiry Apps
Creator	Jakob Sikken
License	Creative Commons Attribution-Noncommercial (CC BY-NC)
Source Code	http://go-lab.gw.utwente.nl/p...
Works Offline	No

Description

In the report tool the learners can create the final report of their work. The learners can include the content of other tools, such as concept maps, hypotheses, questions, observations and data graphs. As a teacher you can change the configuration of this tool. In the configuration menu (behind the gear icon) you can define the section titles of the report and give a short explanation to the learners about the meaning and expected content for each section.

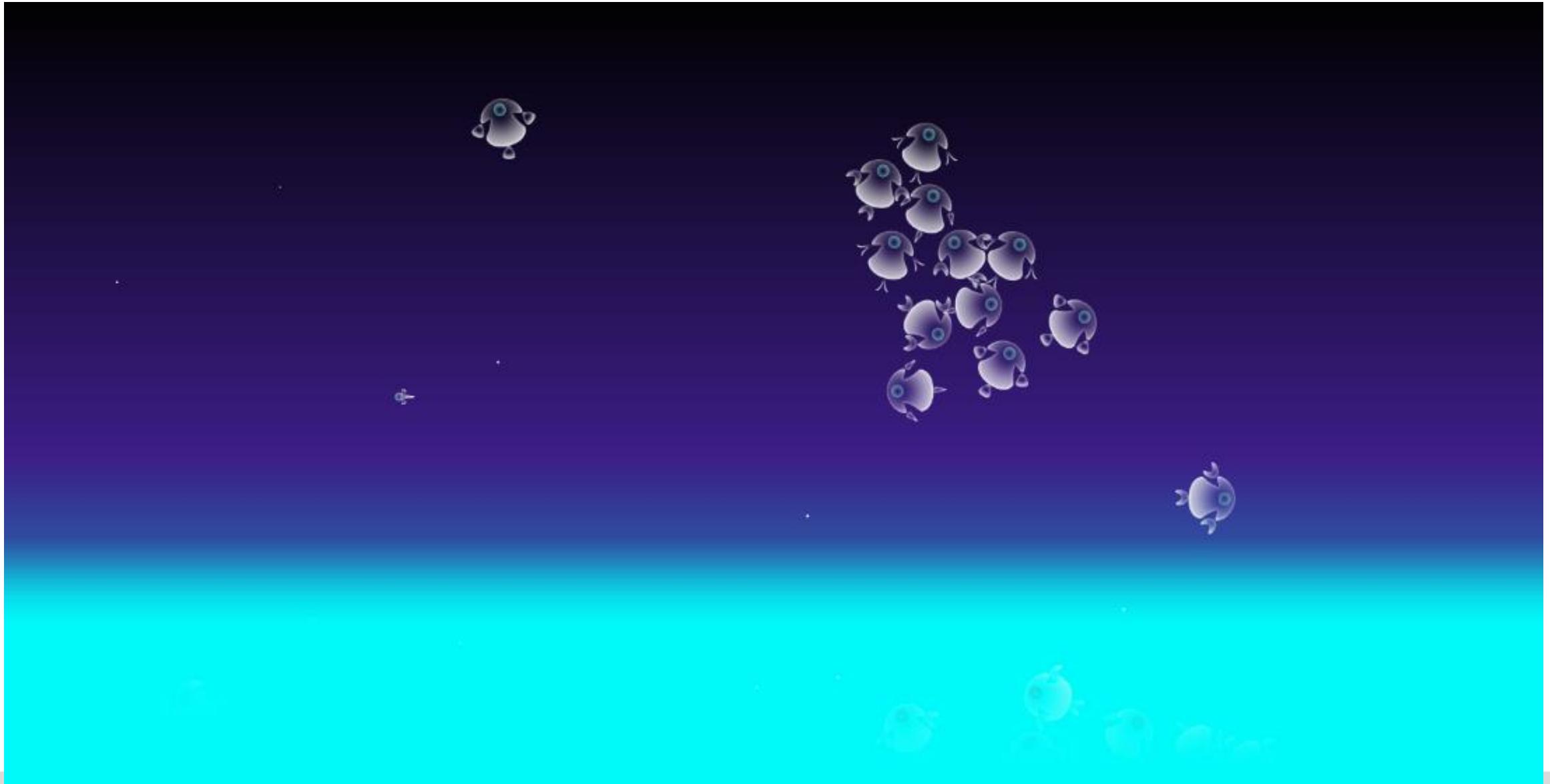
Report

Introduction

In the introduction you introduce your topic and give some background information. Drag elements

Start by explaining what you already knew before you started experimenting. Use what you have read and seen in the orientation phase of this ILS. Maybe there is a concept map you can include? At the end of your introduction you put your hypotheses and/or research questions and explain the logic behind them. What did you want to find out? And what did you expect to happen and why? You can take a look at the conceptualisation phase to help you.

Akvarij



Metoda “Obrnute učionice” (Flipped classroom)

Primjer

Tema: Valovi Predmet: Fizika Dob učenika: 12.g.

- Učenici unaprijed otkrivaju i pronalaze fizikalne činjenice, stvaraju određeno teorijsko predznanje, te stvaraju određene jednostavne pretpostavke i hipoteze o valovima. Dolaskom na nastavni sat učenici svoje pretpostavke i hipoteze provjeravaju primjenom istraživačke znanstvene metode kroz različite aktivnosti, jednostavne pokuse, a koje mogu osmisliti sami ili ih unaprijed osmišljava nastavnik.

Aktivnost 1. - učenički val



Aktivnost 4. - "Slatki val"



Aktivnost 2. - demonstracija vala uz pomoć opruge



Aktivnost 3. - istraživanje valova uz pomoć platoforme Graasp

next lab

GO-LAB Search Online Labs Apps Inquiry Spaces Big I...

Valovi (waves)

by Ivana Gugic

Age range: 12-14 Language: Croatian Level of difficulty: Medium Level of interaction: Medium Average learning time: 2 didactic hours Access rights: Creative Commons Attribution (CC BY) Contact Person: ivana

Like 0 Tweet 0 G+ 0

S W EMG Preview

Copy & use this Inquiry Space

A screenshot of the GO-LAB website. The main title is "Valovi (waves)" and it is attributed to "by Ivana Gugic". Below the title, there is descriptive text: "Age range: 12-14", "Language: Croatian", "Level of difficulty: Medium", "Level of interaction: Medium", "Average learning time: 2 didactic hours", "Access rights: Creative Commons Attribution (CC BY)", and "Contact Person: ivana". There are social sharing icons for Facebook, Twitter, Google+, LinkedIn, Email, and Plus. Below this, there is a preview section with a large image of a wave and several small icons representing different science concepts like sound, waves, and energy.

Mišljenje učenika

- U razgovoru s učenicima pokazalo se da je ovakav način učenja i vježbanja kroz projektnu i istraživačku nastavu njima zanimljiviji i zabavniji, motiviraniji su za rad
- Uspješniji su i učenici koji nastavu pohađaju po posebnim nastavnim programima
- Introvertirani učenici pokazali su volju i trud za ostvarivanjem vlastitog cilja i shvatili koliko je važan timski rad
- Rezultati formativnog i sumativnog vrednovanja su se pokazali boljima

Zašto se uključiti u međunarodne projekte Go-Lab/Next- Lab ?

- Omogućuju drugačiji pristup nastavi
- Mogućnost sudjelovanja na radionicama, tečajevima (MOOC) predavanjima i ljetnim školama izvan RH (Belgija, Grčka, Poljska...)
- Suradnja s kolegama nastavnicima iz drugih zemalja Europe

Hvala na pažnji! 😊