

2021
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2023

TEACHER'S MANUAL

CONNECTING EUROPEAN SCHOOLS THROUGH VR CLASSROOMS

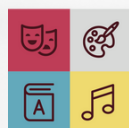
Erasmus + Programme

Project number: + 2020-1-CZ01-KA226-VET-094466

Project title: Connecting European schools through VR
classrooms



**Co-funded by
the European Union**



STŘEDNÍ
PEDAGOGICKÁ
ŠKOLA
FUTURUM



**Kaurialan
lukio**

MET Brighton
Metropolitan
College

 **Northbrook
College**

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Program Erasmus + (KA2)

Project Topic: Connecting European schools through VR classrooms

Partner Schools:

1. Futurum High School (CZ)

2. Metropolitan College Brighton (UK)

3. Education consortium Lukioliikekoulutus Tavastia / Kaurialan lukio (FIN)

Introduction

The main focus of this project is the implementation of VR classrooms focused on Science, Arts, Maths, and English into school lessons.

In the project were participating three schools Kaurialan Lukio based in Hameenlinna, Finland, Brighton Metropolitan College based in Brighton, UK, and the coordinating school Upper Secondary School Futurum based in Prague, Czech Republic.

There were 9 participating teachers exchanging their best practices from subjects at each school which are Arts, Maths, English, and Science.

In the first part of the project, we focused on teachers' skills with this technology. Participating teachers learned how to use VR glasses, how to instruct new users, how to prepare the classroom, and health and safety issues.

In the second part, participating teachers did shadowing jobs in different countries to observe teaching methods, equipment, number of students, and other aspects that will help define topics for their VR lessons. These shadowings also helped teachers to understand different school systems.

After that, we planned the content of the sample project VR lesson. Each teacher prepared at least one lesson plan with three different topics.

There are not many examples of using VR in education. We decided to share our experience through the lesson plans. We set the project manual/textbook, which includes all the lesson plans. We also share the plans online on the website so the project has a greater audience reach. This manual/textbook can help schools to implement Virtual reality technology in education. It can show the teachers the possibilities of this technology in various subjects and support them in starting the process.

In the last part, participating teachers demonstrated the VR lessons. At each school, lessons were focused on one subject. Focus groups were composed of 15-20 pupils from the local school and 10 international students from partner schools.

ABOUT PROJECT





ABOUT THE PARTNER SCHOOLS



STŘEDNÍ
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ŠKOLA
FUTURUM

Upper Secondary school Futurum

The coordinator of the project is **Upper secondary school Futurum**, pedagogical school which focuses on the education of new teachers. Education itself is a big topic at the school and its future is key to students' success in later life when they transform from student to teacher after graduation.

The common goal is to build an environment that connects individual areas and projects into meaningful cooperation and dialogue about future development.



Kaurialan
lukio

Upper Secondary school Kaurialan lukio

Kauriala secondary school is located in Hämeenlinna, 100 km north of Helsinki, with about 600 students, aged 15/19, and 30 teachers + five members of other staff. Kauriala High School is a part of Tavastia Education Consortium, which includes e.g. four upper secondary schools, Tavastia Vocational school and Vanajavesi community college (VOP). Internationalisation is one of the main things of Kaurialan lukio. We have a long history of international projects both Erasmus and also international projects funded by Finnish National Board of Institution.

MET Brighton
Metropolitan
College



Brighton Metropolitan College

Brighton Metropolitan College is a large Further Education institution based in the South of England. The international department has a strong emphasis on Art and Design and offers students a variety of access courses to help progress students to higher education. The college has around 3,500 young learners, 1,000 undergraduates, 7,500 adult learners and 800 apprentices. Along with a large number of teachers and support staff.

LESSON PLAN

VR CLASSROOM

ENGLISH 1

Teacher name: V. Krajcovicsova (Czech Republic), V. Taipale (Finland)

Home school: Kaurialan lukio, Hämeenlinna, Finland

Subject: English

Topic 1: Communication skills

Alternative Topic 2: Learning languages with the help of games

Alternative Topic 3: Language and culture

Number of students: 15

Aims of lesson:

Practice using VR headsets.

Connect and learn about different cultures.

Compare communicating in real life versus online.

Lesson objectives:

Students will be able to:

-know the basics of VR headsets

-understand the limitations of technology - recognize differences between American and British English

Resources and materials:

VR headset

Mondly

Motivation:

Help students practice using VR headsets as well as teach them about the cons and pros of technology. Connect students from different cultures and let them teach others about their culture and customs. Native English speakers may help the others to better understand the differences between American and British English.

Instruction:

Each student practices to use the VR headsets with the help of First steps.

The second step is to practice using Mondly (English students can choose Am English and/or try some foreign language).

Form groups (one student from each country).

Discuss your experience using Mondly and VR in general (here teachers will provide questions, such as do the students think Mondly or VR is an efficient way to learn or practice a language, do they prefer to interact online or face to face, how would they start a conversation in real life, what is considered polite when, for example, eating at a restaurant, etc.)

Share your thoughts with the whole group.

(If English students participate, they could tell more about the differences between Am and British English, and maybe teach the others some phrases/slang. If not, the teachers can provide examples or ask the students to find examples online).

For more informations
about VR English
classrooms open



[Or click here](#)

LESSON PLAN

VR CLASSROOM

ENGLISH 2

Teacher name: Krajcovicsova (Czech Republic), Taipale (Finland)

Home school: SPGŠ Futurum, Prague, Czech Republic

Subject: English

Topic 1: Travelling (guided tour)

Alternative Topic 2: Culture similarities and differences between the two participating countries

Alternative Topic 3: Observing changes of famous landmarks through time

Number of students: 15

Aims of lesson:

Connect students from countries participating in the project

Practice authentic communication

Practice vocabulary related to tourist attractions and landmarks, describe scenery

Lesson objectives:

Students will be able to

- Describe and talk about a specific place
- Participate in a discussion about said places
- Exchange information about selected places in countries participating in the project
- React to questions during a Q&A

Resources and materials:

VR headsets – the app *Wander*

Motivation:

Connecting students from the countries that are participating in the project via authentic communication, the students will exchange information about places which they will visit afterwards and discuss their experiences

Immersion

Student activation

Instruction:

Choose three places in your city that you believe are worth visiting (the choice is up to you – it may be a famous landmark or a hidden place which is visited primarily by locals, your favorite café, museum, etc.).

Create a social group in *Wander* and use the app to walk your foreign classmates through the places that you've selected.

Introduce these places to your classmates from different countries. You should tell them why you think this place is worth visiting, describe the place, tell them something about its history or some fun facts.

Be prepared to answer questions (from your classmate(s) or teacher(s)).

Follow up:

The students should visit at least one place that was described during the activity in VR and make a short vlog from their trip

Reflection / Evaluation/ Reminders:

The students will be asked to complete an evaluation form

LESSON PLAN

VR CLASSROOM

ART 1

For more informations
about VR Art
classrooms open



[Or click here](#)

Teacher's name: Kristýna Florián
Home school: Upper secondary school Futurum
Age range: 15+
Subject: History/ Art
Topic 1: Step into a famous painting
Alternative Topic 2: Remaking 2D abstract paintings into 3D
Alternative Topic 3: Transform your own 2D painting into 3D
Number of students: 5 – 10, maximum 15

Aims of lesson:

- Find out more information about selected world-famous art pieces and artists
- Deepen knowledge about the history of art
- Understanding the possibilities of 3D and 2D space
- insight into 3 Dimensional painting

Lesson objectives:

- Students will be able to recognize differences between 2D and 3D paintings
- Students will understand some advantages of using 3D paint

Resources and materials:

- Projector
- Computer
- VR headsets
- Students needs tablets/computers/ phone
- Speakers
- Hard paper sheet/ cardboard
- materials for drawing or painting

Applications and software

- Tilt brush/ Multibrush or other applications where you can do 3D painting
- For topic 1 – Art Plunge
- [Art Plunge on Oculus Quest 2 | Oculus](#)
- If it is not possible to get it here is just a teaser -
- [Art Plunge | Stepping INSIDE Famous Works of Art in VR \(w/Fun Facts!\)](#)
- Software Oculus

Introduction:

- Who is virtual reality artist? Discussion
- Play the video about virtual artist teek Match or any another virtual artist
- [Step Inside a Painting with Virtual Reality - YouTube](#)
- Discussion about the difference between 3D and 2D painting and what are the odds for the audience
- Topic 2 and 3 – Introduction about artists and art pieces. Showing the art pieces which will be in the application. Explain some further details and symbols in paintings. Present some pieces of information about the selected artists.
- Topic 3 – Show the reference abstract artist and artworks for inspiration

Instruction:

Topic 1:

- the class gets VR headsets – instruction on how to use VR seats, solve technical issues
- Guide students to open the application Art plunge
- Every student goes through paintings on their own time
- After they are finished. Everybody cleans VR headsets and put them back into boxes.

Topic 2:

- Split students into pairs
- Teacher gives student task to picking one of the printed abstracted paintings or find online one of the presented art pieces .
- Half of the class gets VR headsets – -
- Another student from the pair has in front of him an example of abstract painting – a printed picture or on a computer screen. This student guide another one with a VR headset to paint part of the picture.
- After some time they switched positions.
- The task is to try to remake a selected 2D abstract art piece into a 3D space painting
- The final piece teacher or student saves, captures the room, and makes a video of the whole piece.
- Everybody cleans VR headsets and put them back into boxes.

Topic 3:

- Task is to design 3D abstract painting
- Split students to half
- The first group is painting or drawing their abstract painting with classic media on paper.
- The second group - instruction on how to use VR seats, and solve technical issues. Guide students to open the application Multi brush/ Tilt brush. They will design their 3D abstract painting. The final piece teacher or student saves, captures the room, and makes a video of the whole piece.
- The groups switched positions. So the first group will try to remake their 2D piece into 3D. And the second group will try to transfer their 3D virtual painting to 2D space by using classic media on paper.
- The teacher will download the results from the headsets – connect them with a cable. Download from the files.
- After that one group cleans VR headsets and put them back into boxes. The rest of students cleans the working space.

Assesment activity:

Topic 1:

- Discussion about the difference between classic paintings and virtual ones. What is the advantage and disadvantages of each media? Do both media have the same target group?

Topic 2:

- Presenting each piece. Comparing with the original one.
- Discussion about the difference between classic paintings and virtual ones. What is the advantage and disadvantages of each media? Do both media have the same target group?
- Discussion about making the pieces, what were the pros and cons. How was the cooperation between partners

Topic 3:

- Presenting each piece made by virtual and classic media.
 - Discussion about the difference between classic paintings and virtual ones. What is the advantage and disadvantages of each media? Do both media have the same target group?
- Discussion about making the pieces, what were the pros and cons of both media.

Follow up:

Students can go around the class and look at the VR sets created by their classmates. Or the art pieces can be recorded and downloaded to computers, shared on one drive, and presented in the front of whole class, where the students can speak up about their pieces.

It also can be conceived as a competition and students can vote for the best/ the most original art piece.

LESSON PLAN

VR CLASSROOM

ART 2

Teacher's name: Piritta Malinen

Home school: Upper secondary school Kauriala

Age range: 15+

Subject: Art and design

Topic 1: Designing a fountain

Alternative Topic 2: Sculpturing

Alternative Topic 3: Design

Number of students: 5 – 10, maximum 15

Aims of lesson:

- Acknowledging the basics of design
- Learn the basics of the design process
- Increase the creativity
- Realize the power of group working
- Practice the VR technology
- Develop the 3D modeling practices
- Understand the relationship between design and environment / surroundings

Lesson objectives:

(Students will be able to...)

- Understand the aims of the design process
- Use different visual tools for expressing their ideas
- Share the ideas

Resources and materials:

- Projector
- Computer
- VR headsets
- Students needs tablets/computers/ phone
- Speakers
- Hard paper sheet/ cardboard
- materials for drawing or painting

Applications and software

- Tilt brush/ Multibrush or other applications where you can do 3D painting
- Possibly 360-kameras

Introduction:

Study, document and observe the fountains in Brighton.

What values (listed below) you would think each of their design might be emphasizing?

Choose some of the fountains as your inspiration, take pictures of them. You might also have some other inspirational pictures.

In small groups choose some of the values of the design that you emphasize

What are the values of the design – which ones are you emphasizing?

Aesthetics

Ergonomics

Ecology

Economy

Empathy

Usability

Accessibility

Ethics

Playfulness

Aims of lesson:

- Acknowledging the basics of design

Decide the Purpose of your fountain:

Playfulness

Watering

Refreshing

Decoration

Powermaking

Something else?

In what surroundings / place is your fountain located? How does the location affect the design?

Make a design using the VR software. Take screenshots documenting the process.

Reflection / Evaluation/ Reminders:

Remember to document the inspiration, possible scetching, mindmapping of the designing.

LESSON PLAN

VR CLASSROOM

ART 3

Teacher's name: Karena Morrison

Home school: Brighton MET

Level of education: Age of 16-19

Subject: Use Tilt Brush, a virtual reality tool, to create and develop fashion designs, fashion designs

Topic 1: Fashion design

Alternative Topic 2 : Womens wear

Alternative Topic 3 : Homewear

Alternative Topic 4: Animal wear

Number of students: 15

Aims of lesson:

Students will learn how to use Tilt Brush, a virtual reality tool, to create and develop fashion designs

Lesson objectives:

(Students will be able to...)

- Understand where Virtual Reality fits under a wider umbrella term of 'Extended Reality' or XR for short, with a few other emerging technologies.
- Understanding of how the software Tilt brush is used by artist.
- Understanding of how to use the tools in Tilt brush to create a fashion design.
- Understand the basic elements of fashion design and conceptualising

Resources and materials:

Virtual Reality headsets

Tilt Brush software

Sketchbooks and pencils for traditional drawing

[Other lesson plans](#)

Applications and software

Tilt brush/ Multibrush or other applications where you can do 3D painting

Instruction:

1. Introduction to Tilt Brush and virtual reality technology (10 minutes)
 - Discuss the basics of virtual reality and how it is used in the fashion industry.
 - Discuss the different elements of Fashion design
 - Show examples of how to conceptualise your designs.
 - Show examples of fashion designs created using Tilt Brush
2. Sketching and brainstorming session (30 minutes)
 - Students will create a mood board with ideas to come up with inspiration for their design.
 - Students will use traditional sketchbooks and pencils to brainstorm and sketch fashion design.
 - Discuss how these sketches can be translated into 3D designs using Tilt Brush.
3. Hands-on demonstration of Tilt Brush (20 minutes)

Students will put on their VR headsets and follow along as the instructor demonstrates the basic tools and functions of Tilt Brush

4. Independent Tilt Brush practice (60 minutes)
 - Students will use Tilt Brush to begin creating their own fashion designs
 - The instructor will provide individual guidance and feedback as needed
5. Sharing and critique (30 minutes)
 - Students will share their Tilt Brush designs with the class and receive constructive feedback from their peers and the instructor
6. Conclusion and next steps (10 minutes)
 - Review what was learned in the lesson
 - Discuss any homework assignments and future plans for using Tilt Brush in the fashion design process.

Assessment activity:

Participation in class discussion and sketching session

Completion of independent Tilt Brush practice

Quality and originality of final Tilt Brush fashion design

Participation in sharing and critique sessions.

Follow up:

Students add activity to the google classroom and share designs and reflection with the group.

Reflection / Evaluation/ Reminders:

See reflection form from VR Classroom - Art

LESSON PLAN

VR CLASSROOM

MATH1

For more informations
about VR Math
classrooms open



[Or click here](#)

Teacher's name: Markku Pohjola
Home school: Kaurialan lukio
Age range: Not specified
Subject: Mathematics
Topic: Mathematical objects in VR
Topic 2: Sierpinski pyramid model in VR
Topic 3: Basic geometry tasks in VR
Grade level: 1st, 2nd
Number of students: <20

Aims of lesson:

Aim is to study mathematics in an unconventional way in VR using GeoGebra Mixed Reality.

Lesson objectives:

Students will be able to solve mathematical questions in virtual environment.

- Geometrical problems
- Easy examples, like sorting different geometrical objects
- More difficult examples, like calculating a volume for 4th Sierpinski fractal pyramid

Resources and materials:

- VR set with GeoGebra MR. 1 set for 2-3 students.
- Computer, iPad or some device to stream that is seen in VR (1 for 2-3 students)
- Questions written on paper to solve for students

Instruction:

- Students are split in pairs (preferably, groups of 3 will do as well) and every pair gets a VR set with GeoGebra installed. Also need optional device to stream what is seen in VR.
- Guiding to „how to work with GeoGebra“ is needed (moving in the area, zooming and moving objects etc.)
- Pairs will complete prepared tasks together

Assesment activity:

- After the tasks are complete, discuss about the problems and possible difficulties in them.

Follow up:

- There are multiple pre-made questions in GeoGebra MR itself. Students can study them to deepen their understanding of maths.
- Also there is a graph you can draw mathematical functions with. Drawing needs more advanced knowledge of two-parameter functions.
- Questions can be made more difficult. Like, what would be the volume of Sierpinski fractal, when the order goes to infinity? What is the mathematical equation for Sierpinski pyramid?

Reflection / Evaluation/ Reminders:

- Students might feel uncomfortable calculating math in virtual reality. There is no calculator in the software, so students might have to take off the head-mounted device at times and solve problems on paper (or computer).
- Using GeoGebra MR needs certain amount of space for each pair.

LESSON PLAN

AR CLASSROOM

MATH 2

Teacher's name: Markku Pohjola

Home school: Kaurialan lukio

Age range: Not specified

Subject: Mathematics

Topic: Mathematical modelling in AR (augmented reality)

Number of students: <20

Aims of lesson:

Aim is to model practical object with mathematical functions in augmented reality using GeoGebra AR

Lesson objectives:

- Make a function of a coffee mug with computing in GeoGebra.
- Examine that object in augmented reality (with phone or iPad).
- Compare the real object and the object made out of functions in AR.

Resources and materials:

- Computer with GeoGebra installed
- iPad or phone with GeoGebra AR installed

Instruction:

- Students are split in small groups (2-3 preferably)
- There will be a step-by-step guide on how to proceed with mathematical modeling.

Assesment activity:

- After the tasks are complete, discuss about the problems and possible difficulties in them.

Follow up:

- You can basically model a lot of different common things. Students can try different stuff and put them in AR. There are easier shapes in GG (balls, cones etc) that can be easily drawn and exported to AR.

Reflection / Evaluation/ Reminders:

- Mathematical functions may be complex, however they work nicely. Understanding those functions would need deeper understanding. Thus a paper guide and personal guidance is needed.

LESSON PLAN

VR CLASSROOM

BIOLOGY 1

For more informations
about VR Biology
classrooms open



[Or click here](#)

Teacher's name: Tomáš Vitásek
Home school: Upper secondary school Futurum
Age range: 15+
Subject: Biology
Topic 1: Human anatomy
Alternative Topic 2: Mechanics of human body
Alternative Topic 3: Human genetics
Number of students: 5 – 10, maximum 15

Aims of lesson:

- Find out more information about human body, especially human skeleton and muscles.
- Deeper knowledge about the bones and muscles
- Understanding the possibilities of 3D and 2D space

Lesson objectives:

- Students will be able to find proper bones in the model of human body.
- Students will be able to make a model of human skeleton from bones.
- Students will understand some basics of genetics.

Resources and materials:

- Projector
- Computer
- VR headsets
- Speakers
- Pen and paper for notes

Links for:

Video introduction:

<https://www.youtube.com/watch?v=kw9EJbezIK4>

Applications and software

- For topic 1 and 2
 - o Neos Classroom
 - o VRX Labs Biology
 - o Youtube VR
- For topic 3
 - o Punnett squares

Introduction:

- Human body in 360 video
 - o <https://www.youtube.com/watch?v=kw9EJbezIK4>
 - Discussion about possibilities of 360 videos and photos in biology, especially human body.

Instruction:

Topic 1:

- The class gets VR headsets – instruction on how to use VR seats, solve technical issues.
- Guide students to open the application YouTube VR
- Every student watch 360° video of human body
- Then everybody opens VRX Labs. Students are guided by the teacher in the app.

Assessment activity:

- Then every student has opportunity to try some minigames in the app
- After they are finished. Everybody cleans VR headsets and puts them back into boxes.

Topic 2:

- The class gets VR headsets – instruction on how to use VR seats, solve technical issues.
- Guide students to open application Neos Classroom
- Help foreign students with language.
- Every student study the mechanics of the human body.
- Teacher can help foreign students with language, but there is almost no need of using language.
- Everybody cleans VR headsets and puts them back into boxes.

Topic 3:

- The class gets VR headsets – instruction on how to use VR seats, solve technical issues.
- Guide students to open application Punnet squares.
- Students use the app by their own.
- Everybody cleans VR headsets and puts them back into boxes.

**Assesment activity:
(Without headsets)**

Topic 1:

- Video is possible to watch on mobile phone.
- Discussion about possibilities in the app.
- Watching the work of students in VR on projector.
- Compare the human skelet model with the real model.

Topic 2:

- Discussion of the human body and its mechanics.
- Compare the human skelet model with the real model.

Topic 3:

- Discussion of genetics.
- Using of punnet squares in genetics.
- Work on another punnet squares without VR.
 - o For example, genetics of some disorders.

LESSON PLAN

VR CLASSROOM

BIOLOGY 2

Teacher name: Elaine Johnston
Home school: Chichester College Group, UK
Level of education: Further Education (Age 16 +)
Subject: Biology, Forensic Science
Topic: Forensic Investigation
Topic 2: Crime Scene Investigation
Topic 3: Forensic Anthropology and Anatomy
Number of students: 16-18

Aims of lesson:

Practice using VR headsets for exploring forensic applications
Compare the use of bespoke VR platforms vs off the shelf VR games vs online digital games for crime scene investigation.
Compare the use of VR anatomy app for examining skeletal structure vs Augmented Reality

Lesson objectives:

Students will be able to:

- know the basics of VR headsets
- use VR to investigate crime scenes
- evaluate pros and cons of various VR scenes vs digital scene
- evaluate pros and cons of VR vs AR

Resources and materials:

VR headset with RIVR CSI (cast to screen)
STEAM Platform and computer with CSI VR downloaded
[Red Herring Games | Murder Mystery Virtual tour created by Chris Lynn Photography \(crime-time.co.uk\)](#)
VR Human Anatomy App
AR Virtuali-tee T-shirts – app to be downloaded onto smart phones
Instruction sheet for CSI VR activity
Instruction sheet for Forensic Anthropology Activity
Answer booklet for Virtual Murder Mystery
Extension activity – disarticulated skeleton

Motivation:

Students to work together to learn how to use VR technology to compliment their in class learning. Working with students from different countries to share good practice and knowledge

Instruction:

Students to split into 3 or 4 groups. Each group will start at topic below and then rotate round so all groups have had a go at all activities.

Group 1: Anatomy VR vs Anatomy AR – label a skeleton activity and read about Forensic Anthropology

Group 2: CSI VR and Learn Genetics – investigate a crime scene then carry out digital interactive PCR and Gel Electrophoresis

Group 3: Virtual Murder Mystery – digital crime scene mystery with answer booklet

Group 4: RiVR VR Scene – have a go on new tech

Each group to follow the instructions on the worksheet or as instructed at the start of the lesson. Students may need help to get started with each VR platform.

Purpose of Group 1/2/3 is to make a comparison between each type of VR or digital activity – which worked best, which was most enjoyable. Within each group a UK forensic student will assist with highlighting justification for targeting evidence and collection procedures.

Purpose of Group 4 is to compare using VR with AR for learning about the skeletal system and relating back to Forensic Anthropology. Extension activity: Disarticulated skeleton cut out – cause of death

If only 3 groups then Group 4 activity can be carried out at the end as a whole group activity with headset cast to screen and all students suggesting where volunteer can investigate.

Share your thoughts with the whole group at the end.

Assessment activity:

Discussion

Link for videos:

[CSI VR: Crime Scene Investigation on Steam \(steampowered.com\)](https://steampowered.com)

[Virtual Labs \(utah.edu\)](https://utah.edu)

[Gel Electrophoresis \(utah.edu\)](https://utah.edu)

[All About PCR - Beta \(utah.edu\)](https://utah.edu)

[Can DNA Demand a Verdict? \(utah.edu\)](https://utah.edu)

[Red Herring Games | Murder Mystery Virtual tour created by Chris Lynn Photography \(crime-time.co.uk\)](https://crime-time.co.uk)

[Human Anatomy VR on Oculus Quest 2 | Oculus](https://oculus.com)

[Virtuali-Tee - Augmented Reality T-Shirt | Curiscope UK & EU](https://curiscope.co.uk)

[Analysing the bones: what can a skeleton tell you? | Natural History Museum \(nhm.ac.uk\)](https://nhm.ac.uk)

LESSON PLAN

VR CLASSROOM

BIOLOGY 3

Teacher's name: Pinja Paavilainen

Home school: Upper secondary school Kauriala

Age range: 15+

Subject: Biology

Topic 1: Step into an ecosystem

Alternative Topic 2: Ecosystem ecology examples

Alternative Topic 3 : Successful reservation actions made in different ecosystems

Number of students: 6 – 12, maximum 15

Aims of lesson:

- Find out more information about different ecosystems
- Deepen knowledge about the role of certain animals in their ecosystem
- Have a relaxing experience with introduction video which help make their relationship with nature stronger
- Understanding the possibilities of 3D space

Lesson objectives:

- Students will be able to describe how is the typical landscape of the ecosystem?
- Students will be able to tell the roles of some key species and why the species are important for the whole ecosystem?
- Students will be able to tell what kind of nature conservation action has been done in different ecosystems?
- Students will be able to get a positive and calming experience which make their relationship with nature stronger

Resources and materials:

- Projector
- Computer
- VR headsets
- Students needs tablets/computers/ phone

Links for:

<https://www.meta.com/blog/quest/celebrate-world-oceans-day-with-ecosphere-available-now-on-oculus-quest-/>

<https://www.oculus.com/experiences/go/2856269307784398/>

Applications and software

- Oculus headsets
- ecosphere

Introduction:

In ecosphere students can visit different ecosystems/places and learn new things about the ecosystems

1. How is the typical landscape of the ecosystem?
2. What are the roles of some key species? Why are they important for the whole ecosystem?
3. What nature conservation action has been done?

Instruction:

Topic 1:

- the class is divided into three groups which all have six members and students from all three countries
- Every group gets a one ecosystem of the options which are Borneo, Kenya and Raja Ampat
- the class gets VR headsets which includes the right video material from their ecosystem – instruction on how to use VR seats, solve technical issues
- Guide students to open the application ecosphere and enter to the blackboard of their topic ecosystem
- Every student watch through their environments 2nd video
- Groups will have a conversation about the first video they watched

Topic 2:

- Students watch the first video of their ecosystem and listens actively the narration

Topic 3:

- Students watch video about key species of their ecosystem and listen actively the narration

Assesment activity:

(Without headsets)

Topic 1:

- Discussion about the video the group members first watch. What observations they made about the ecosystem? How did the video make they feel like?
- Every group makes a short notes based on their conversation

Topic 2:

- Discussion about the video the group members watch after the introduction video. What observations they made about the ecosystem now? What they learned?

- Every group makes a short notes based on their conversation

Topic 3:

- Discussion about the video the group members watch about the animals. What observations they made about the ecosystem now? What they learned? What they learned about the animal/group of animal that was showcased in more detail in ecosphere

- Every group makes a short notes based on their conversation

Topic 4:

- Every group presents their own ecosystem to rest of the class: what observation they made, what they learned about the ecosystem and especially what they learned about the crucial animal/ group of animal and it's role to the ecosystem

MORE INFORMATION

The purpose of this manual is to help teachers with the implementation of VR technology in their classes.

This manual can be printed out and intended for wider use.

If you want to know more about the project check out our webpage:

<https://sites.google.com/gbmc.ac.uk/european-vr-classroom/>



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More information about partner schools:

<https://www.gbmc.ac.uk/>

<https://www.kktavastia.fi/lukiot-kauriala/>

<https://spgsfuturum.cz/>

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Teacher's Manual

Connecting European schools through VR classrooms

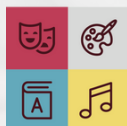
Erasmus + Programme

Project number: + 2020-1-CZ01-KA226-VET-094466

Project title: Connecting European schools through VR classrooms



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