GUIDE ACTIVITY INTELLECTUAL OUTPUTS

INNOVATIVE SCHOOLS ADAPTED TO THE DIGITAL SOCIETY FOR IMPROVING TECHNOLOGICAL EDUCATIONAL SKILLS

Project no. 2020-1-ES01-KA201-082648

Co-funded by the Erasmus+ Programme of the European Union

OUTPUT 3
FLIPPED CLASSROOM TOOLKIT

IN THE FLIPPED CLASSROOM, STUDENTS FIRST WATCH, VISUALIZE RELATED VIDEOS, INVESTIGATE, AND IN THEIR CLASS TIME, COLLABORATE AND CARRY OUT PRACTICAL ACTIVITIES

3

output

ACTIVITY 1

TITLE VEGETABLES AND FRUITS

ABSTRACT

This lesson is about consuming fresh vegetables and fruits.
Why are they important? For our health, of course.

Some examples of vegetables that are good to be consumed every day, if possible:
- carrot,
-green salad,
- cucumber, tomatoes,
- potatoes,
-radish,
- spinach;
In this lesson every vegetable above is described.

Some examples of fruits that are good to be consumed daily, if possible:
- Strawberry,
-raspberry,
-cherry,
-apple,
-apricot,
-pear;

In this lesson every fruit above is described.

AUTHOR/S

Scoala Gimnaziala Maria Rosetti

DATE 08/04/2021
VERSION 1

ACTIVITY 1

DIDACTIC OBJECTIVES

The purpose of this lesson is to make every pupil know about the importance of fruits and vegetables and why is it good to eat them fresh or prepared.
They will find out their importance by watching this material:
- Because they keep us healthy
- Because they have a lot of vitamins
- Because they are tasty....

Reference objectives:
-to identify the fruits
-to identify the vegetables
-to know about their importance for our health.

At the end of the lesson students must know:
-to present a fruit/a vegetable at his/her choice
-to use the information received to play an interactive game

- [x] SCIENCE
- [x] TECHNOLOGY
- [ ] MATHEMATICS
- [ ] GEOGRAPHY/HISTORY
- [ ] LANGUAGES
- [ ] LITERATURE
- [ ] MUSIC
- [ ] OTHERS .....

EDUCATION LEVEL

This activity is prepared to be completed by...

- [ ] 12 - 14 YEARS
- [ ] 14 - 16 YEARS
- [x] OTHERS: 6-12 YEARS

ACTIVITY 1

TOOLS NEEDED

- Smartboard
- Laptop
- PPTmaterial

DEVELOP ACTIVITY

CONDUCT OF THE ACTION

5 MINUTES - Lesson organization

Teacher's activity - Check if there are optimal conditions for the lesson. Prepare the teaching material necessary for the lesson.

Student activity - Students prepare their notebooks, papers, pencils.

Verification of knowledge

- Orally check the knowledge acquired from the film presented by asking students to individually talk about fruits and vegetables. .

20 minutes collaboration

– Students will be grouped in 2 teams to work together on same topic but in different way to express

– Ask students to follow the pictures in the textbook that represent a fruit and a vegetable and to say the names of them.

And ask the students to try to imagine that they are a fruit or a vegetable and what should they do show others why are so important for the health of humans.

20 minutes expositions

– Students' analysis, hypotheses are issued.

– 5 min Quiz

ACTIVITY 1

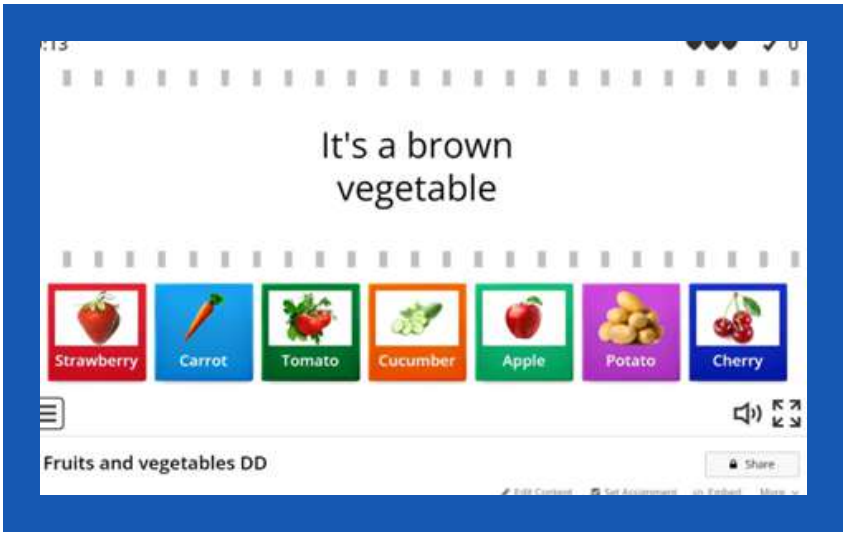
RESOURCES

- smartboard
- laptop
- PPTpresentation

STUDENT'S EVALUATION

https://wordwall.net/resource/17070934/copy-fruits-vegetables
https://wordwall.net/resource/17071074/copy-lesson-10fruits-vegetables

ACTIVITY 1



BIBLIOGRAPHY

- Math and Science, Ed Joy
- Internet, Wordwall
- www.Youtube.com
- www.google.com

SCALABILITY

Activity could be done to students between 6 – 7 years old, preparatory class or 1st level.

ACTIVITY 2

TITLE FOOD PYRAMID

ABSTRACT

A food pyramid is a representation of the optimal number of main food portions to be eaten each day. Each type of food contains specific nutrients, all of them are important for us but in different proportions. Some nutrients are healthy for our body, others are extremely unhealthy.

AUTHOR/S

IPS Maffeo Pantaleoni

DATE 15/04/2022

VERSION 1

DIDACTIC OBJECTIVES

- To know the food pyramid
- To differentiate between healthy and unhealthy food
- To understand the concept of drinking water and doing sport
- To understand the importance of food sustainability and conviviality
- To identify the different foods.
- To analyze the problems of food-related diseases

- [x] **SCIENCE**
- [x] **TECHNOLOGY**
- [ ] **MATHEMATICS**
- [ ] **GEOGRAPHY/HISTORY**
- [ ] **LANGUAGES**
- [ ] **LITERATURE**
- [ ] **MUSIC**
- [ ] **OTHERS .....**

ACTIVITY 2

EDUCATION LEVEL

This activity is prepared to be completed by...

☐ **12 - 14 YEARS** ☑ **14 - 16 YEARS** ☐ **OTHERS .....**

TOOLS NEEDED

- Computer-tool: Screencast-O-Matic, Google Classroom
- Definitions
- Concepts
- Principles
- Food Book
- images
- Web
- Software
- Hardware
- Blackboard/Whiteboard
- Sheets of paper
- Pens

DEVELOP ACTIVITY

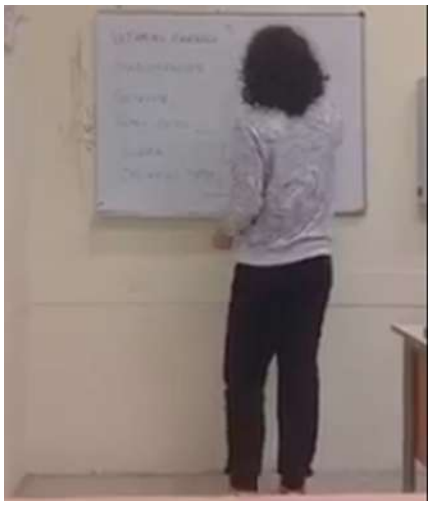
Students watch a video with the explanation of the teacher at home as a theoretical part of the activity, in which proportions of food to be eaten daily and principal nutrients are explained.
They will find the video on the school platform Google Classroom and learn the main concepts following their time and having the opportunity to listen to the recording again and again until they don't get the teaching.
At school they will implement a practical activity of completion of a mind map based on the Food Pyramid to show their knowledge of the topic.

ACTIVITY 2

RESOURCES

- Video

Students exercises:



ACTIVITY 2

STUDENT'S EVALUATION

The assessment will be based on how much they learn at home using the video and the written text on the book and on their skill in organising their learning by themselves without the mediation of the teacher, in other words, their sense of responsibility will be part of the assessment too.

BIBLIOGRAPHY

- Web: https://www.alimenti-salute.it/content/piramide-alimentare
- Text book

SCALABILITY

The task requested can be performed at various levels, it is sufficient to change the difficulty of the requested competences or to use a funnier activity for younger students such as a true/false game or a snakes and ladders activity.

MORE INFORMATION

Students learn how to deal with food and get to know the important concepts of “healthy” and “unhealthy” food starting to think in terms of nutrients contained in it.

ACTIVITY 3

TITLE FRESH WATER: A LIMITED RESOURCE.

ABSTRACT

When studying the water cycle, we tend to believe that water is an unlimited resource. But the distribution of fresh water on the planet as well as the multiple forms of pollution make it an increasingly limited and valuable resource. The main objective of this activity will be to make students aware of this reality so that they change their behaviour towards more sustainable habits.
The following contents will be addressed: distribution of water on the planet, consumptive and non-consumptive uses of water, main forms of water pollution and actions for the care and maintenance of the hydrosphere.
It has been decided to use a flipped classroom methodology, which implies a greater involvement of the students, as another of the objectives pursued is that today's young people gain autonomy and develop the "learning to learn competence".

AUTHOR/S

IES Mediterráneo

DATE 1/6/2021
VERSION 1

DIDACTIC OBJECTIVES

- To know the distribution of water on the planet.
- To differentiate between consumptive and non-consumptive uses of water.
- To understand the concept of drinking water.
- To understand the processes of water purification and potablilization.
- To identify the different forms of water pollution.
- To analyze the problems related to water scarcity and pollution.

ACTIVITY 3

- [x] SCIENCE
- [ ] LANGUAGES
- [ ] TECHNOLOGY
- [ ] LITERATURE
- [ ] MATHEMATICS
- [ ] MUSIC
- [ ] GEOGRAPHY/HISTORY
- [ ] OTHERS .....

EDUCATION LEVEL

This activity is prepared to be completed by...

- [x] 12 - 14 YEARS
- [ ] 14 - 16 YEARS
- [ ] OTHERS .....

TOOLS NEEDED

- Computers, cell phones
- Magazines
- Newspapers
- Painting materials

DEVELOP ACTIVITY

1. Students should view the video at home.
2. The teacher clarifies the most important concepts and solves the students' doubts.
3. Debate on the environmental problems surrounding water.
4. Design and creation of posters for an awareness campaign.
5. Oral presentation of posters.
6. Student assessment using Socrative application.

RESOURCES

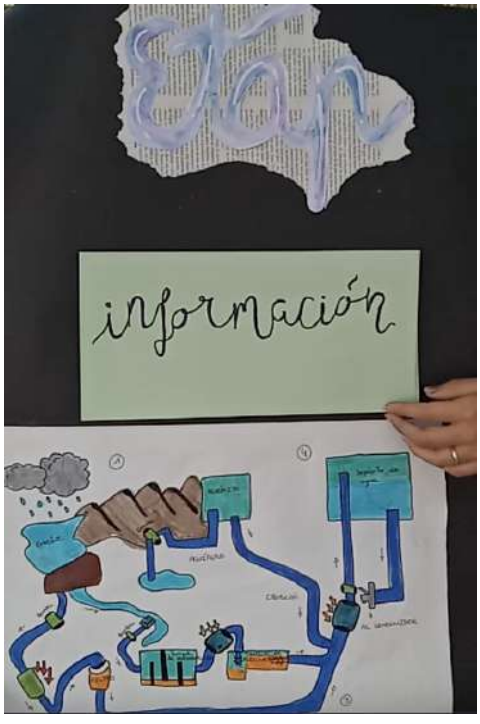
TEACHER

Video created to watch at home with the theoretical contents.
Evaluation questionnaire developed in the Socrative application.

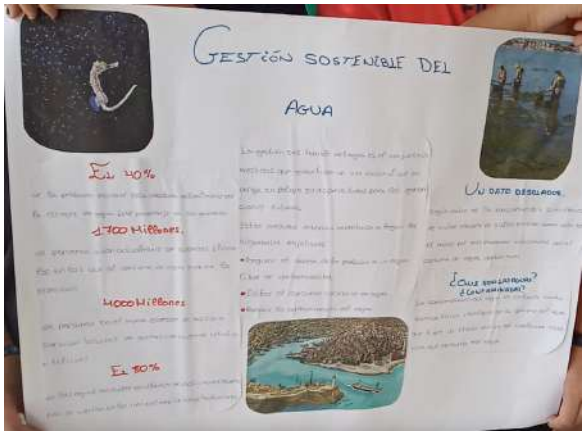
STUDENTS

Posters for awareness campaign on the responsible use of water.

Students exercises:



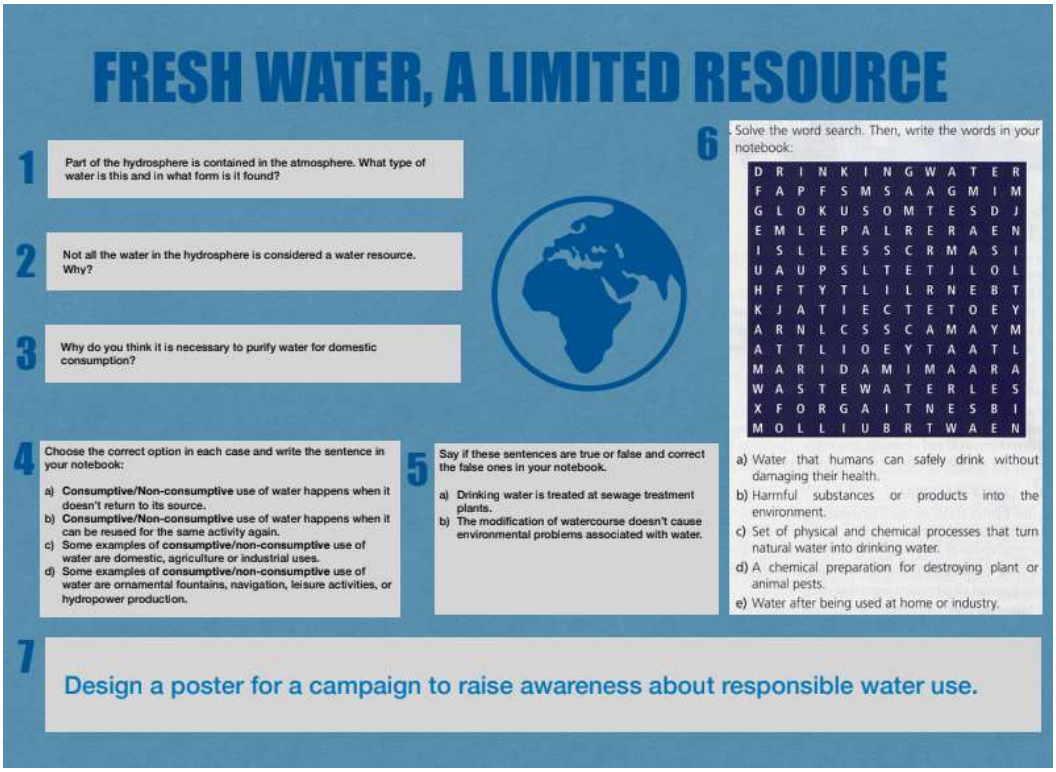
ACTIVITY 3



STUDENT'S EVALUATION

Three of the tasks are aimed at assessing the students' skills and knowledge: debate, oral presentation and the questionnaire using socrative application.

ACTIVITY 3



FRESH WATER, A LIMITED RESOURCE

1 Part of the hydrosphere is contained in the atmosphere. What type of water is this and in what form is it found?

2 Not all the water in the hydrosphere is considered a water resource. Why?

3 Why do you think it is necessary to purify water for domestic consumption?

4 Choose the correct option in each case and write the sentence in your notebook:

a) **Consumptive/Non-consumptive** use of water happens when it doesn't return to its source.
b) **Consumptive/Non-consumptive** use of water happens when it can be reused for the same activity again.
c) Some examples of **consumptive/non-consumptive** use of water are domestic, agriculture or industrial uses.
d) Some examples of **consumptive/non-consumptive** use of water are ornamental fountains, navigation, leisure activities, or hydropower production.

5 Say if these sentences are true or false and correct the false ones in your notebook.

a) Drinking water is treated at sewage treatment plants.
b) The modification of watercourse doesn't cause environmental problems associated with water.

6 Solve the word search. Then, write the words in your notebook:

D	R	I	N	K	I	N	G	W	A	T	E	R		
F	A	P	F	S	M	S	A	A	G	M	I	M		
G	L	O	K	U	S	O	M	T	E	S	D	J		
E	M	L	E	P	A	L	R	E	R	A	E	N		
I	S	L	L	E	S	S	C	R	M	A	S	I		
U	A	U	P	S	L	T	E	T	J	L	O	L		
H	F	T	Y	T	L	I	L	R	N	E	B	T		
K	J	A	T	I	E	C	T	E	T	O	E	Y		
A	R	N	L	C	S	S	C	A	M	A	Y	M		
A	T	T	L	I	O	E	Y	T	A	A	T	L		
M	A	R	I	D	A	M	I	M	A	A	R	A		
W	A	S	T	E	W	A	T	E	R	L	E	S		
X	F	O	R	G	A	I	T	N	E	S	B	I		
M	O	L	L	I	U	B	R	T	W	A	E	N		

a) Water that humans can safely drink without damaging their health.
b) Harmful substances or products into the environment.
c) Set of physical and chemical processes that turn natural water into drinking water.
d) A chemical preparation for destroying plant or animal pests.
e) Water after being used at home or industry.

7 Design a poster for a campaign to raise awareness about responsible water use.

BIBLIOGRAPHY

- Biología y Geología Geniox 1º ESO Andalucía (Oxford University Press)
- Biology and Geology 1ESO Andalusia (Algaida)
- Biology and Geology 1ESO Andalusia (Santillana)
- Biology and Geology 1ESO Andalusia (Anaya)
- https://freshwaterwatch.thewaterhub.org/content/water-limited-resource-archived

SCALABILITY

This activity can be developed in levels:

- lower: (third cycle of primary education) eliminating the operation of water purification and purification plants.
- upper: (third of secondary education) expanding the issues of environmental problems.

ACTIVITY 4

TITLE GLOBAL WARMING. CAUSSES AND EFFECTS

ABSTRACT

The main causes of global warming:
Humans are increasingly influencing the Earth's climate and temperatures by burning fossil fuels, cutting down rainforests and raising animals. These activities generate huge amounts of greenhouse gases, in addition to those already naturally present in the atmosphere, thus contributing to the greenhouse effect and global warming.

Fossil fuels
Fossil fuels are coal, oil and natural gas. Their combustion is used to produce electricity and thermal power in thermo-electric power stations, but also to set in motion the means of transport.

Deforestation and vegetation burning
Deforestation and vegetation burning are two other causes of global warming. Trees help regulate climatic conditions by absorbing carbon dioxide from the atmosphere.
Therefore, when trees are cut down, this beneficial effect is lost, and the carbon dioxide stored by the trees is released back into the atmosphere, accentuating the greenhouse effect.

The intensification of animal growth
The intensification of animal growth also leads to an increase in the amounts of methane in the air. Animals produce methane during digestion and methane is also a gas that contributes to global warming. The most quantity of methane is produced by cattle.

Rice fields
Rice fields that are irrigated and managed worldwide, with flood cycles followed by periods of drought, can produce twice as much greenhouse gas pollution as 200 coal-fired power stations.

ACTIVITY 4

GLOBAL WARMING EFFECTS

Global warming and climate effects affect all regions of the world.
The main effects are:

- melting glaciers and rising sea and ocean levels;
- desertification;
- extreme meteorological phenomena;

Glaciers are melting, sea and ocean levels are rising, leading to flooding in low-lying areas and the extinction of some animal species in the future.

Desertification is a phenomenon of gradual transformation of fertile soils into deserts caused by climate change (severe and prolonged drought) and human activities (overexploitation of land).

Extreme weather events and rainfall are becoming more common in some regions, while other regions are facing extreme heat waves and drought.

AUTHOR/S

Scoala Gimnaziala Maria Rosetti

DATE 18/05/2021

VERSION 1

DIDACTIC OBJECTIVES

Students:

- They will have an overview of the phenomenon of global warming and the causes that produce it;
- They will understand how these causes work globally;
- They will understand each cause occurs;
- They will be able to understand how temperature on Earth changes and what the long-term effects are;
- They will find out that all regions of the planet are affected, not only those where pollution takes place;
- They will be able to understand the phenomenon as a whole and the main causes and effects.

ACTIVITY 4

- [x] SCIENCE
- [ ] TECHNOLOGY
- [ ] MATHEMATICS
- [ ] GEOGRAPHY/HISTORY
- [ ] LANGUAGES
- [ ] LITERATURE
- [ ] MUSIC
- [ ] OTHERS .....

EDUCATION LEVEL

This activity is prepared to be completed by...

- [x] 12 - 14 YEARS
- [ ] 14 - 16 YEARS
- [ ] OTHERS .....

TOOLS NEEDED

- Smartphone, computer or tablet
- Internet
- Socrative account for teachers.
- Drawing tools, white sheets, pencils.

DEVELOP ACTIVITY

Students will watch home video about global warming, its causes and effects.
In class, the material will be repeated and explained to the students.
Students will develop simple drawings to illustrate ways to reduce pollution and reduce the effects of global warming.
Based on the material, they will have to answer questions in the Socrative application.

ACTIVITY 4

RESOURCES

Students exercises:

ACTIVITY 4

STUDENT'S EVALUATION

The evaluation of the activity includes several stages:
Assessment in class through feedback received from students and the questions they ask the teacher.
The drawings of the solutions that they elaborated after viewing the material and that refer to the actions taken by each individual.
The answers to the questions in the Socrative application.

BIBLIOGRAPHY

We have used the following sites and applications:

- https://climate.nasa.gov/causes/
- https: //b.socrative.com/teacher/#import-quiz/58776029;
- https://ec.europa.eu/clima/change/consequences_ro;
- The meet recorders application from the Google application suite;

SCALABILITY

For higher levels, other causes of global warming and their detailed explanation through the chemical and physical processes that take place can be included. With these explanations, students will be able to deeply internalize the causes and effects of global warming.

MORE INFORMATION

Students should understand that each of them can contribute to global warming, but through their actions they can also contribute to reducing global warming. They must be the ones who, through the knowledge they accumulate and understand, are the vectors that can convince that an ecological lifestyle contributes to the good of the planet.

ACTIVITY 5

TITLE MUST-MUSTN'T

ABSTRACT

Must is a modal verb
Let's look at the different uses of MUST:

MUST

1. To express obligation or duty

This also refers to laws and regulations.

- I must memorize all of these rules about modal verbs.
- People must remain seated until the show is over.
- You must wear a seatbelt at all times.

2. To emphasize the necessity of something

- Humans must have drinking water at least every two days.
- You must give up smoking, it's bad for you.
- We must have a special permit to camp in the national park.
- You must study the last two chapters before the test.
- Plants must have light and water to grow.
- You must drive carefully.

3. Deduction - Sure that something is true (Certainty)

We use this when we don't know but we are certain that it is true (based on evidence).

- Look at all of that snow. It must be really cold outside.
- The ground was wet this morning. It must have rained last night.
- Dinosaurs were very big, they must have eaten a lot.
- It's five in the morning and you still haven't gone to bed? You must be tired!
- Jack must be home. I heard a noise coming from his room.

ACTIVITY 5

4. Expresses positive logical assumptions (Must + have + past participle)

- That must have been my mother calling me last night, nobody else has my number.
- He must have won the lottery with the new house and car he has just bought.
- She must have been at home - her car was there.

5. A strong recommendation

Something that is highly recommended (stronger than using should)

- We really must get together for dinner sometime.
- You must see the new Peter Jackson movie, it's fantastic.
- The ice cream here is delicious. You must try some.

Mustn't

The negative is Mustn't which refers to prohibition (negative obligation)

Mustn't = Must not

- You mustn't use your smartphone while you are driving.
- You mustn't get on the subway if you haven't paid for the ride.
- You must not open the gift until it is your birthday.
- We must not tell anyone.

AUTHOR/S

Sultantepe Prof. Dr. Cemil Taşçıoğlu Ortaokulu

DATE 26/04/2021

VERSION 1

DIDACTIC OBJECTIVES

- Students will be able to talk about obligations.
- Students will be able to understand short, simple prohibitions.
- Students will be able to make sentences about strong recommendations.
- Students will be able to emphasize the necessity of something.
- Students will be able to express obligation or duty.

ACTIVITY 5

- [ ] SCIENCE
- [ ] TECHNOLOGY
- [ ] MATHEMATICS
- [ ] GEOGRAPHY/HISTORY
- [x] LANGUAGES
- [ ] LITERATURE
- [ ] MUSIC
- [ ] OTHERS .....

EDUCATION LEVEL

This activity is prepared to be completed by...

- [x] 12 - 14 YEARS
- [ ] 14 - 16 YEARS
- [ ] OTHERS .....

TOOLS NEEDED

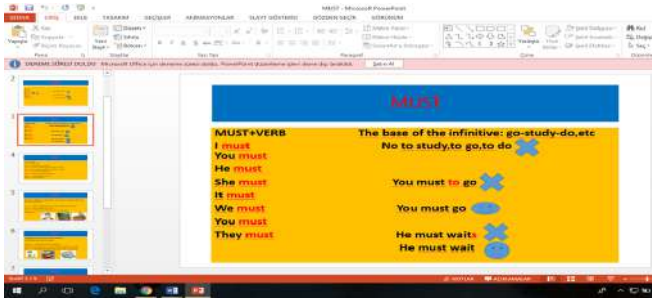
- Smart Phone
- Laptop
- Internet
- Tripod with lights
- Tripod with lighting umbrella
- PDF
- Socrative

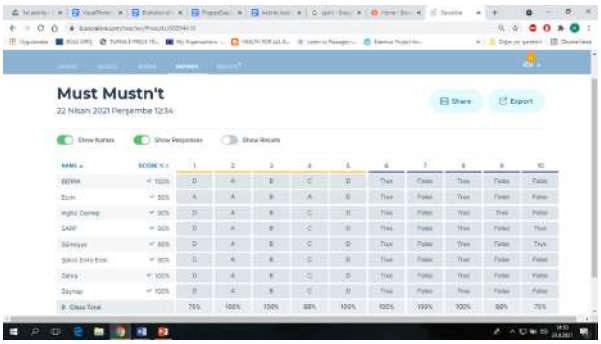
DEVELOP ACTIVITY

Teacher preparing the video (2 hours)
The video prepared in advance by the teacher is uploaded to the system (5 minutes)
Student watches the video (5 minutes)
What the student has learned is tested (5 minutes)
After opened the schools in Turkey, we completed the activity in classroom with students. In the class first teacher reminded the subject what they watched at home as homework and students were ready for activity. Students gave some examples about MUST-MUSTN'T and students wrote 10 sentences about MUST-MUSTN'T on their notebooks. Then finally students made test on socrative about MUST-MUSTN'T. Result was perfect.

ACTIVITY 5

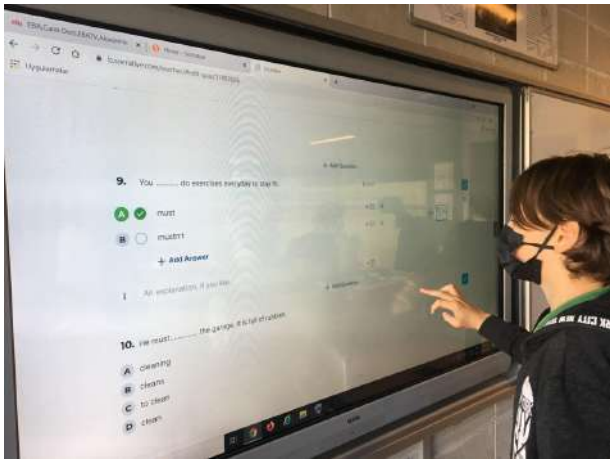
RESOURCES

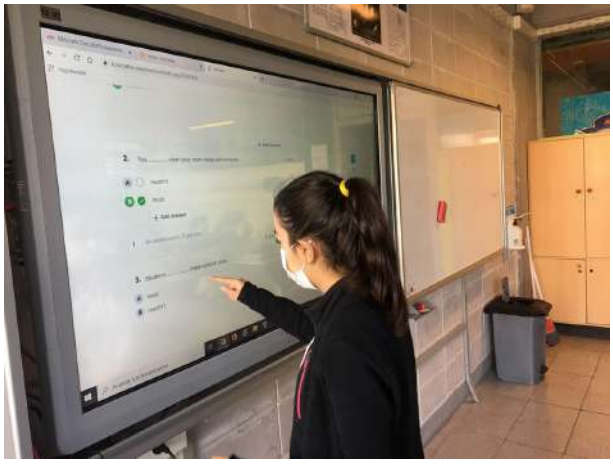


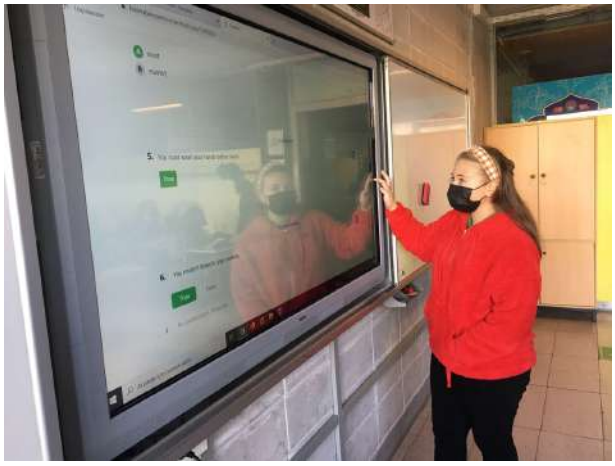


ACTIVITY 5

Students exercises:







ACTIVITY 5

STUDENT'S EVALUATION

After the lesson presentation, video was delivered to students by email. Then students studied lesson by video. After that Teacher arranged a quiz for students on Socrative. Students logged in Socrative and they answered 10 questions in 15 minutes. 5 questions were multiple choose and 5 questions were True/False. After that quiz, Students had same quiz but with contest with groups. In 4 groups 8 students had Space Race . 8 students took the exam. 3 students had 100 marks, 4 students had 90 marks and 1 student had 80 mark.
Finally students had an Exit Ticket Test, 5 students had 100 marks.

BIBLIOGRAPHY

- Hamilton House ELT-Hot Shots1
- Socrative

SCALABILITY

In this activity,I worked with 12 years old students. For higher grade students, you should give more details examples and harder questions. Even they can present subject in classroom for classmates.

ACTIVITY 6

TITLE CATEGORIES, CHAINS AND TROPHIC NETWORKS IN ECOSYSTEMS

ABSTRACT

Consumers take over the organic substance produced by the producers, transform it into their own substances, ensuring the circulation of matter in nature;
Decomposers return inorganic substances to the environment, in order to be assimilated by green plants through photosynthesis.

Trophic categories

The producers are usually the plants. No ecosystem can exist without producers, because all the ecological systems of the Earth are dependent on solar energy, which producers transform into chemical energy, stored in organic substances .

Consumers are animals. They fall into 3 categories:

- **First order consumers**: they feed on plants (phytophagous, herbivores)
- **Second-order consumers**: animals that feed on primary consumers as parasites or predators They use organic substances indirectly from producers.
- **Consumers of order III and IV** are animals that feed on secondary consumers. They are large carnivores that do not fall prey to other animals and are also called top carnivores: ex. Lion, eagle, shark, etc.

Decomposers are represented by microscopic bacteria and fungi that decompose, by oxidation, organic substances into inorganic substances, from matter from the death of producers and consumers. These inorganic substances are returned to the biotope and will be used by producers in photosynthesis.

The trophic chain can also be defined as a trophodynamic unit of food transformation and circulation, in which organic matter circulates from one species to another in one dirección. Each body that are part of the trophic chain forms a link in the trophic networks.

ACTIVITY 6

The number of links in a trophic chain is variable - often there are 3-5 links.
The first link is the producers, which are usually the plants. The last link is always the decomposers.
The trophic network is a system of interconnected and interdependent trophic chains, which results from the interconnection of trophic chains in a biocenosis.
In a complex biocenosis, consisting of several species, there are several trophic chains. Certain connections are established between them and thus the trophic network of a biocenosis is born.

AUTHOR/S
Scoala Gimnaziala Maria Rosetti

DATE 11/04/2021
VERSION 1

DIDACTIC OBJECTIVES

The purpose of the lesson: to know the trophies, chains and trophic relationships that are established between the species of a biocenosis, which can be reproduced in the form of trophic networks.

Reference objectives:

- To identify the component elements of a trophic stem ecosystem
- To explain the spatial and functional organization of an ecosystem
- To explain the importance of each trophic link in the stability of a natural ecosystem
- To demonstrate an ecological way of thinking in making decisions (decision related to the conservation of natural ecosystems)

ACTIVITY 6

Operational objectives: At the end of the lesson students must know:

- To correctly define the category, the chain and the food web in an ecosystem and to represent them graphically;
- To draw up at least one chain scheme and one trophic network scheme;
- To identify the role of polyphagous species in maintaining biocenoses , exemplifying at least 2 species
- To have the ability to communicate and collaborate with teammates to achieve a common product
- Use the information received to create an interactive game on your laptop or smart phone

- [x] **SCIENCE**
- [ ] **LANGUAGES**
- [ ] **TECHNOLOGY**
- [ ] **LITERATURE**
- [ ] **MATHEMATICS**
- [ ] **MUSIC**
- [ ] **GEOGRAPHY/HISTORY**
- [ ] **OTHERS .....**

EDUCATION LEVEL

This activity is prepared to be completed by...

- [x] **12 - 14 YEARS**
- [ ] **14 - 16 YEARS**
- [ ] **OTHERS .....**

TOOLS NEEDED

- Video projector
- Laptop
- Smart boards or video screen
- Manual
- Laptop/ Smart phones
- Drawings with different ecosystems,
- Drawings with chains and trophic networks
- Films about the integrity of the ecosystem and the circulation of C, O2 , CO2 and N2 in Nature

ACTIVITY 6

DEVELOP ACTIVITY

CONDUCT OF THE ACTION

5 MINUTES - Lesson organization

Teacher's activity - Check if there are optimal conditions for the lesson. Prepare the teaching material necessary for the lesson.

Student activity - Students prepare their books and notebooks, papers, pencils, markers for the posters

At the beginning of the class, the teacher explains the task of the lesson based on the material sent home to the students "Categories, Chains and Trophic Networks In Ecosystems"

Then the students carry out a practical exercise, during 20 minutes,they will draw a chains and trophic networks in different ecosystems. – Activity for 20 minutes

At the end of the task, the students will present their work to the rest of the class.

Verification of knowledge

Is evaluated the movie sent to the students at home before the lesson.

The Socrative test is applied

https://b.socrative.com/teacher/#import-quiz/58726324

20 minutes collaboration – students will be grouped in 2 teams to work together on same topic but in different way to express

- Orally check the knowledge acquired from the film presented by asking students to individually make trophic chain schemes in which the same species is part of several trophic chains. Ask students to point out the species that are part of several food chains and specify what kind of species they are after feeding.
- Ask students to follow the pictures in the textbook that represent a trophic network in a pond and to say the names of the creatures that represent common links for several trophic chains and that result from the intersection of trophic chains.

Emphasizes that the trophic node is common links for several food chains, and the number of trophic nodes in a network depends on the abundance of species in an ecosystem.

ACTIVITY 6

And ask the students to try to explain the proverb: "If you shoot a vulture you will have a swarm of locusts on you"
Explain that it is important to know the food webs and what are the consequences of the disappearance of links in an ecosystem.

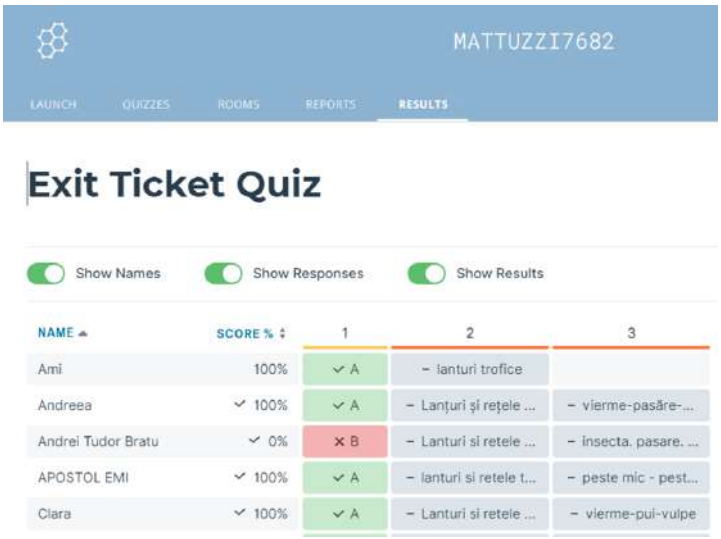
Carefully analyze the creatures in a meadow
- frog, lizard, quail, hedgehog, falcon and owl;
And out of a puddle
- carp and pike are part of several trophic chains that intertwine at certain points of contact as nodes and all these form a food web.

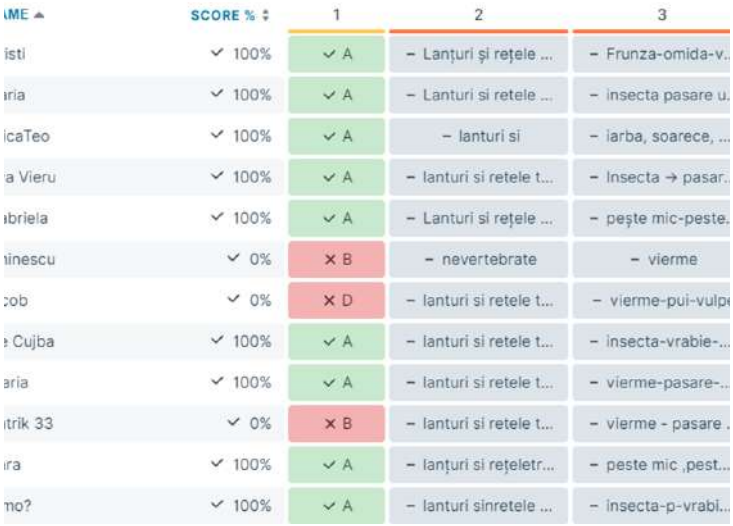
20 minutes expositions
– Students' analysis, hypotheses are issued.

RESOURCES

Students exercises:

ACTIVITY 6





STUDENT'S EVALUATION

Evaluating student performance
- 5 min Quiz
EDPUZZLE
https://edpuzzle.com/media/60a52c357c9232413fed5a6f

INVITE THE STUDENTS
https://edpuzzle.com/join/gaarova

Kakoot test
https://create.kahoot.it/auth/register?_ga=2.61817775.228046545.1618673736-744455997.1618673736&deviceId=24c85afd-5b64-4efc-8a57-a5d937d63a23R&sessionId=1618673735925

HOME EVALUATION TEST
Fill in the blanks with the missing notions:
The main trophic categories in an ecosystem are: ...., ...
The trophic category which, with the help of solar energy, is able to produce organic substances from inorganic substances, through the process of photosynthesis.

ACTIVITY 6

The decomposers are ..... and .....
Consumers who feed on plants are called ....., And those who feed on animals are called ....
The food chain consists of several .... represents the passage of the substance ....
..... from one link to another ensuring the circuit ..... in nature.
Give three examples of trophic chains:
a) parasite-type food chain in which the human being is a secondary consumer;
b) aquatic trophic chain in which the person is a tertiary consumer;
c) mixed trophic chain (terrestrial and aquatic)

Assessment level based on specific competencies

Ability level	In the acquisition phase	Basic level	Medium level	Advanced level
	4-5	5-6	7-8	9-10
Knowledge	Minimum knowledge about the taught subject that is updated with the help of the teacher or classmates.	Students understand the significance of the trophic chains and networks	Description of the functional organization of an ecosystem in terms of the transfer of organic substances	An excellent knowledge of the thema that allows the issuance of arguments and contributes to the realization of logical schemes that are the basis for acquiring new information.

ACTIVITY 6

Specific competence	The student rarely has questions or opinions about what is being discussed.	Identification of biotope factors and biocenosis components	Correct use of biology-specific terminology in different communication situations Presentation of information using various methods of communication .	The student must explain human involvement in ecosystems, specifically in influencing trophic chains by removing links or introducing new species.
attitudes	The teacher must constantly intervene during the student's activity.	Making slogans to urge young people to conserve the environment	Applying knowledge of biology in everyday life ; explaining the effect of pesticides and herbicides on ecosystems	Creating a kahoot game

BIBLIOGRAPHY

- Aglaia Ionel, Victoria Oaida - Biology, textbook for the 8th grade, Ed. Humanitas;
- Viorel Lazar Mariana Nicolae - Lesson basic form of organization of the teaching-learning-assessment in biology discipline, Ed. Arves.
- MEN school program;
- Methodological guide for applying the biology program, CNC

ACTIVITY 7

TITLE VIDEO “IF THERE WERE 100 PEOPLE IN THE WORLD”

ABSTRACT

Abram Lincoln once said: "All men are born equal, but this is the last time they are." The events that happen immediately after our birth already determine many things in our life, such as the family we belong to and, in a broader view, the type of society in which we came into the world.
Everything, especially as children, influences us, molds us and it is not possible for two human beings to be subjected to the same identical external influences, have the same experiences and therefore grow in the same way, each of us is and will grow differently from others.
The populations and cultures that live in the world today are all profoundly different from each other, and there is nothing wrong with that. The question becomes a little more complicated when the differences are transformed into inequalities which, understood as a difference in resources and privileges, qualify society itself, highlighting data that lead us to think that there are "better" others, where "best" does not mean merit, but rather a better management of resources thanks to mechanisms of social selection.

The video begins by showing the division of the population by gender, by nationality, by religion: women and men are in a perfect balance, as far as nationality is concerned, Asians conquer 60 places, against 14 Americans, 11 Europeans and 15 Africans. , while as far as religions are concerned, 33 would be Christians, 21 Muslims, 14 Hindus, 6 Buddhists, 10 of other religions and 16 non-believers.

ACTIVITY 7

The interesting considerations come when data and statistics go a little more specifically, touching sensitive buttons and taking into consideration the types of resources and goods that most of us will take for granted, but which from an international perspective they are definitely relative. Let's take money, for example. In the hypothetical world village of 100 people, 15 would live on $ 2 a day, 56 (the most important slice) would spend from $ 2 to $ 10 a day, 13 from $ 10 to $ 20, 9 people from $ 20 to $ 50, 6 $ 50 to $ 90 and one person over $ 90 per day. This means that one person (yes, only one) would control 50% of all the money in the world and that 71% of the entire world population would live on less than $ 10 a day. The point is not that there are people who are richer than others, who earn more than others or who have more "things", because, again, there is nothing wrong with that. Probably these people are reaping the rewards of all the years spent studying and striving with their work to be where they are today. The point is that not everyone has been given the opportunity to lead this type of life, to choose specific studies, to one day have a job that would allow them to live better. This is confirmed by the following data in the video: 14 out of 100 people would be illiterate, only 7 out of 100 people would go to university.

Such a marked imbalance of resources leads to a world in which, although 87 people have access to clean water, 13 still do not; if 77 people can be said to be lucky to have any type of home, 23 still do not; and although a large portion of the population has a normal relationship with food, there are still 15 undernourished people and one who is about to starve. Our future is not only given by the commitment we show in achieving our goals, but also by the possibilities that are offered to us and by the environment in which we live. In light of these data, many concepts that today we consider fundamental seem more faded and apparent, values that we thought were universally shared, such as the need for acceptance and the struggle to win a place in society, expire at the bottom of the ranking giving way to those resources that are not yet taken for granted in the world, even if they should.

ACTIVITY 7

AUTHOR/S

IPS Maffeo Pantaleoni

DATE 20/05/2021

VERSION 1

DIDACTIC OBJECTIVES

The purpose of the video is not only to make known a series of data but above all to explain and reason on the data by putting them together and comparing them.
Knowing that in the world there are still many inequalities related to sex, religion, race, wealth, the use of drinking water, the possibility of using sanitation and health services.
For this reason the final reasoning of the video, indeed, the final question that should push us to reflect even more, is so effective: "if there were 100 people, would we all fight harder for equality"? If there really were 100 people, would we all fight more for equality?

- ☐ **SCIENCE**
- ☐ **TECHNOLOGY**
- ☑ **MATHEMATICS**
- ☑ **GEOGRAPHY/HISTORY**
- ☑ **LANGUAGES**
- ☐ **LITERATURE**
- ☐ **MUSIC**
- ☑ **OTHERS: CIVICS AND SOCIAL SCIENCES**

EDUCATION LEVEL

This activity is prepared to be completed by...

- ☐ **12 - 14 YEARS**
- ☐ **14 - 16 YEARS**
- ☑ **OTHERS: 18 -20 YEARS**

ACTIVITY 7

TOOLS NEEDED

The video was searched on the INTERNET and questions were subsequently asked with Edpuzzle

- Computer
- Smartphone
- Tablet
- Interactive screen
- Internet
- EdPuzzle site

DEVELOP ACTIVITY

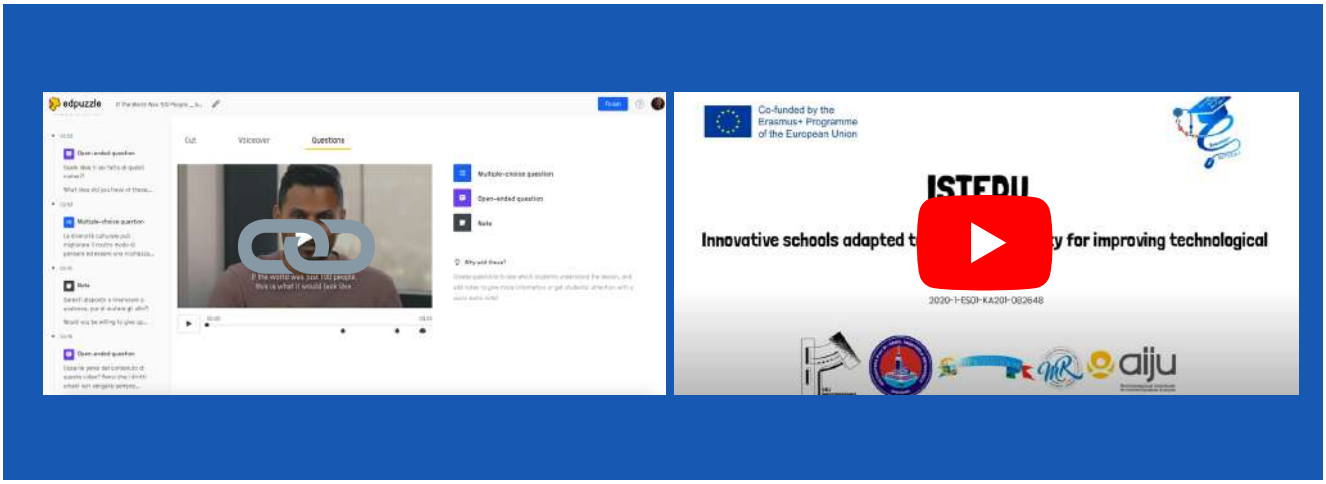
Due to the pandemic it was not possible to meet with the students, so the teacher searched for the video on youtube and it was assigned to the students. the video was uploaded to Edpuzzle and questions were assigned in both Italian and English to which the students answered. In this way the lesson becomes interactive.

1) Brain storming in the classroom on human rights
2) In the computer lab, the pupils listen to and watch the video on EdPuzzle, read the subtitles and do the multiple choice exercises, open questions and read the teacher's notes, within the video of EdPuzzle.
3) Debate in the classroom on the answers they gave.

RESOURCES

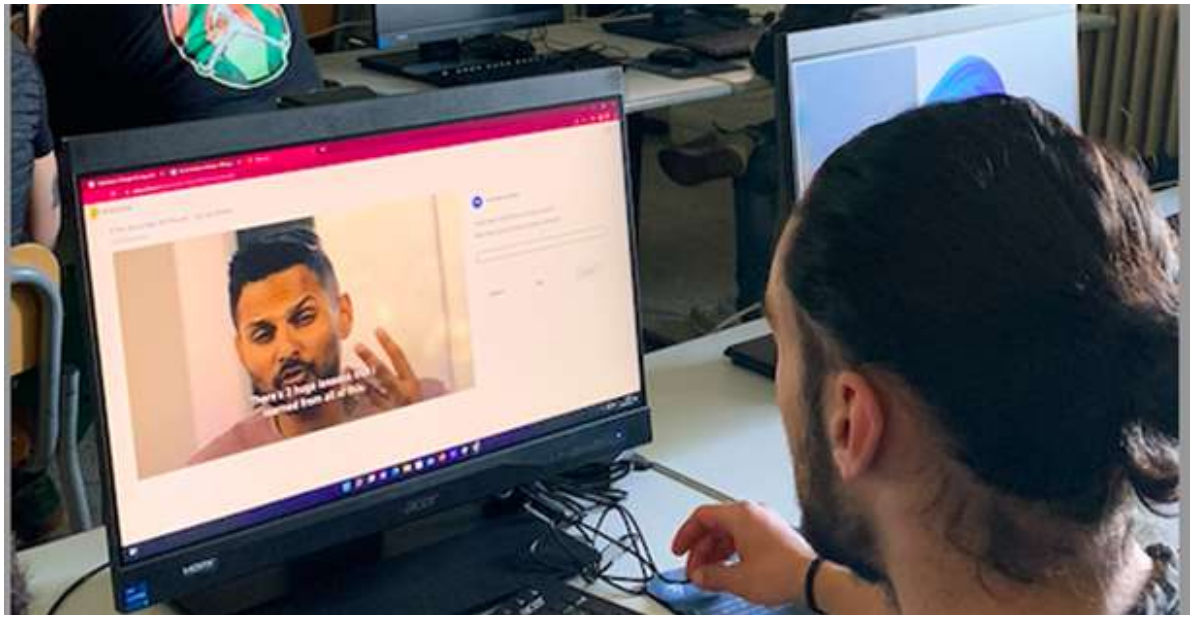
Photos of the activity on edpuzzle with the video and the multiple answered and open questions.

ACTIVITY 7



Students exercises:

ACTIVITY 7

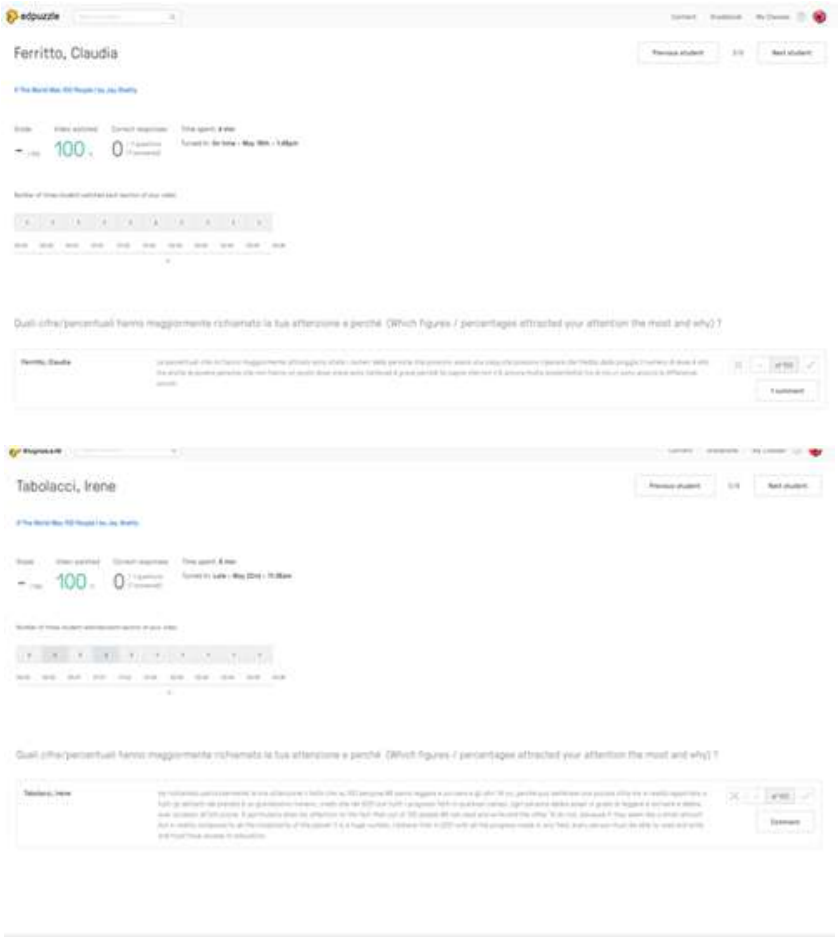


ACTIVITY 7

STUDENT'S EVALUATION

Students answered the questions in edpuzzle.

ACTIVITY 7



BIBLIOGRAPHY

- Youtube video: https://www.youtube.com/watch?v=LXqOd5noN8g
- https://edpuzzle.com/

SCALABILITY

The video is easy to use, it can be used in all levels of education

MORE INFORMATION

There are no changes to be made to use it in other levels of education

ACTIVITY 8

TITLE HOW WE CAN KEEP PLASTICS OUT OF OUR OCEAN

ABSTRACT

How much plastic gets in the ocean?

8 million m3 of plastic waste ends up in the ocean, ie 5 garbage bags for every 30 cm of coastline.

Where does the plastic in the ocean come from?

Plastic waste comes from mainland / land activities.

What about plastic garbage?

This waste floats and is scattered along the ocean. There are huge areas in the ocean where these residues have been accumulating due to ocean currents.

Plastic waste has been decomposed into smaller and smaller pieces and ingested by marine organisms (some of which we consume) and then reach the bottom of the ocean where it can continue to decompose.

Why is there so much plastic?

Plastic is easy to produce anywhere in the world and can be easily traded, there are no barriers in its production and marketing.

What can be done in this regard?

To solve the problem of plastic packaging we must effectively rethink the whole system, from one that is linear: from its use and transformation into a waste that must be disposed of, to one in which it can be recovered and returned to the economic circuit as material values.

Another way to solve the problem of plastic packaging is to keep it from becoming waste.

To do this, each participant in this chain needs to change the way they act.

Does only plastic waste pollute ocean waters?

Marine pollution comes in many ways: industrial, agricultural and urban waste drips into the sea fueling the explosion of oxygen-consuming algae that marine ecosystems need to survive.

ACTIVITY 8

How can nutrient pollution be combated?

When it comes to agriculture, soil health is essential for water quality and is the first thing that agricultural practices need to focus on. The more organic matter there is in the soil, the more nutrients the soil can retain such as phosphorus and nitrogen. Changing the system is difficult and labor-intensive for any farmer, but all farmers want to learn different processes and practices that will allow them to be efficient in their work and protect the soil.

AUTHOR/S

Scoala Gimnaziala Maria Rosetti

DATE 18/05/2021

VERSION 1

DIDACTIC OBJECTIVES

Students:

- They will have an overview of the huge amount of plastic waste that pollutes the ocean;
- They will understand the effects of plastic pollution on the cellular level of living organisms;
- They will understand why so much plastic is produced;
- Will be able to understand how plastic waste management can change;
- They will find out that ocean water pollution is not only caused by plastic waste but also by other human activities;
- They will understand the effect of nutrient pollution of ocean waters;
- They will be able to understand the way in which farmers, through agricultural work practices of the soil can reduce water pollution with nutrients and their eutrophication .;
- They will understand that anyone who needs food must be interested in agricultural practices, not just farmers.

ACTIVITY 8

- [x] SCIENCE
- [ ] LANGUAGES
- [ ] TECHNOLOGY
- [ ] LITERATURE
- [ ] MATHEMATICS
- [ ] MUSIC
- [ ] GEOGRAPHY/HISTORY
- [x] OTHERS: ECOLOGY

EDUCATION LEVEL

This activity is prepared to be completed by...

- [x] 12 - 14 YEARS
- [ ] 14 - 16 YEARS
- [ ] OTHERS .....

TOOLS NEEDED

- Smartphone, tablet or computer.
- Internet
- Edpuzzle account for teacher and students
- Kahoot account for evaluation.
- Drawing sheets
- Crayons

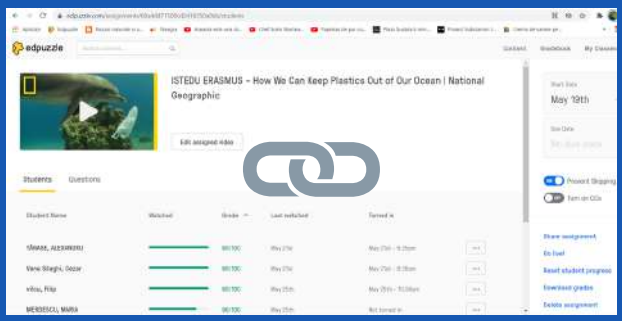
DEVELOP ACTIVITY

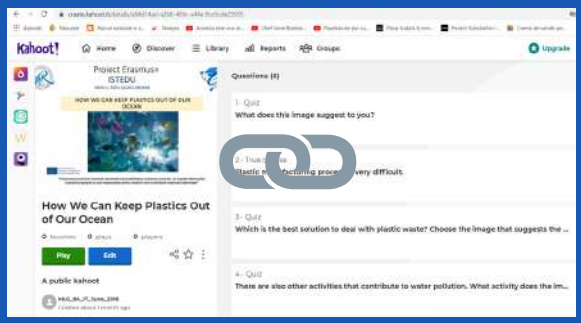
The teacher must choose and prepare the video in the Edpuzzle application. Make a virtual class of students via gmail account and students will watch the video Edpuzzle, answering questions.
In class, students can answer questions from the Kahoot app.
The evaluation of the activity will be done through a practical application, the realization of some graphic materials / drawings with ecological message, through which the students show the understanding of the reduction of the consumption of plastic materials in the daily life.

ACTIVITY 8

RESOURCES

Links to video in Edpuzzle and questions in Kahoot. Then the students carry out an activity on a drawing contest with the message of reducing plastic consumption.





Students exercises:

ACTIVITY 8

STUDENT'S EVALUATION

After the class was created in Edpuzzle, the link to the course was sent to the students. After the students followed the lesson, a test was organized in the Kahoot environment. The test consisted in 7 questions with 5-20 seconds to answer.

The evaluation was made according to the students' results and the personal success of each student.

Examination of the general difficulty.

Success rate of each question.

Feedback was received from the application as well as the students' oral feedback.

ACTIVITY 8

BIBLIOGRAPHY

- https://kahoot.com/
- https://edpuzzle.com/
- http://www.greeneducationfoundation.org
- https://www.herplanetearth.com/reduce-plastic-waste.html

SCALABILITY

The topic "How can we protect the oceans from plastic pollution" is a topic that attracts 5th and 6th grade students.

The lesson is an attraction that can be done face to face with students after their return to class.

In addition, our students may be asked to correlate with what they have learned in class in their daily lives. For example: anyone can help reduce plastic pollution by using environmentally friendly, alternative materials to plastic materials with greater durability.

MORE INFORMATION

Because plastic pollution of the oceans is a hotly debated topic and concerns us all, students can make posters that will catch everyone's attention and we hope that we will become aware of this topic.

Contests on this topic can be organized in class and symbolic prizes can be awarded.

These competitions can also be organized on a course basis.

For example, a program related to reducing the amount of plastic waste in each student's home.

Issues that emphasize the importance of reducing plastic pollution in the classroom in science or geography, articles about recycling in English classes that can be read.

ACTIVITY 9

TITLE DOMESTIC WASTE AND RECYCLING

ABSTRACT

Differences between Waste and Garbage:

Waste:

Any material that has expired and needs to be removed from where we live is called "Waste". Waste occurs in factories, homes, schools, and workplaces.

Garbage:

Materials that cannot be used in any way in wastes are called "Garbage". Paper, glass, plastic, cardboard, metals are not garbage.

We can use a material again and again in three forms.

1. **Reuse**: The use of waste materials without any action is called re-use.
   For example:
   Refilling water into pet bottles,
   Toys that growing children do not use
2. **Reduce**: Reduce means to minimise the amount of waste we créate.
   For example:
   Buy large economy-sized products instead of individual wrapped items.

3. **Recycle**: Reuse of wastes after some processes is called recycling.
   For example:
   Plastic recycling

Domestic Waste: Items that have fallen out of domestic use or are in the form of rubbish are collected as Domestic waste. Domectic waste water, waste oils, paper, bags, batteries, bottles, boxes, plastics, paint waste, old furniture, old clothes, metals, old electronic devices, vegetable and fruit waste, food waste are domestic waste. Plant and animal waste is called organic waste.

ACTIVITY 9

Some of the Domestic waste can be recycled.

Paper products
Metal products
Glass products
Plastic products
Battaries

Some Benefits of recycling:

It is ensured that our environment is kept clean
Contribution to economy.
Natural resources are protect.
Energy saving is provided.

AUTHOR/S
Sultantepe Prof. Dr. Cemil Taşçıoğlu Ortaokulu

DATE 15/05/2021
VERSION 1

DIDACTIC OBJECTIVES

- Students will not treat every waste as garbage.
- Students will know the way to use a product over and over again.
- Students will know the stages of recycling.
- Students will know the socio-economic benefits of recycling.
- Students will be able to classify waste in their schools and homes.
- Students will be able to understand the importance of recycling to protect nature and natural resources.

- [x] **SCIENCE**
- [ ] **TECHNOLOGY**
- [ ] **MATHEMATICS**
- [ ] **GEOGRAPHY/HISTORY**
- [ ] **LANGUAGES**
- [ ] **LITERATURE**
- [ ] **MUSIC**
- [ ] **OTHERS .....**

ACTIVITY 9

EDUCATION LEVEL

This activity is prepared to be completed by...

☑ **12 - 14 YEARS** ☐ **14 - 16 YEARS** ☐ **OTHERS .....**

TOOLS NEEDED

- Smartphone, tablet or computer.
- Internet
- Voki account to create presentations
- Edpuzzle account to transfer the video to students by providing a classroom environment
- Tripod with lighting umbrella
- Kahoot account for evaluation

DEVELOP ACTIVITY

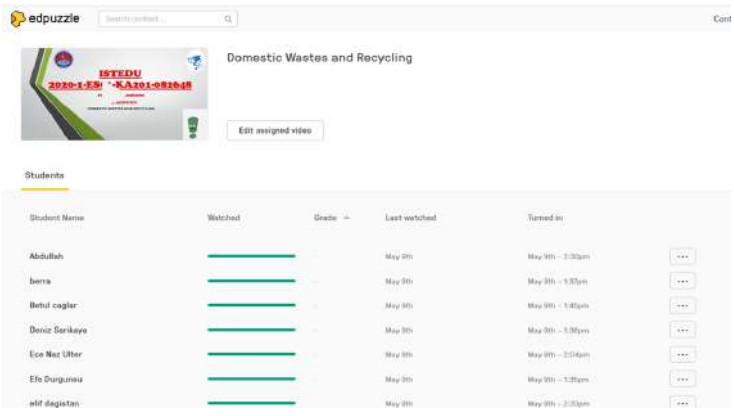
The presentation screen recorded to be created with VOKI has been added to the system and to the edpuzzle platform. In edpuzzle a link to the lesson was sent after the class, students held a Kahoot environmental competition. The quiz has 10 questions and 20 sec is given for its questions.

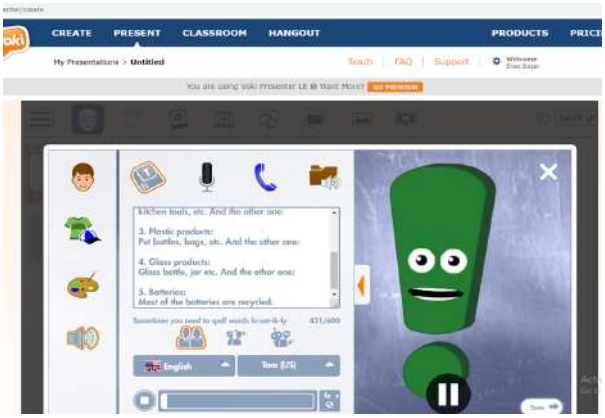
Teacher preparing the video (2 hours)
The video prepared in advance by the teacher is uploaded to the system (5 minutes)
Student watches the video (5 minutes)
What the student has learned is tested (5 minutes)

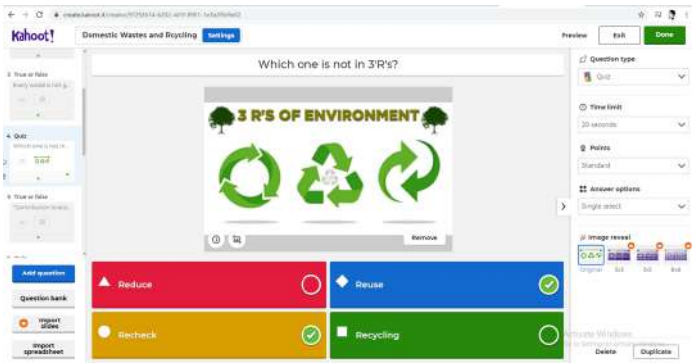
ACTIVITY 9

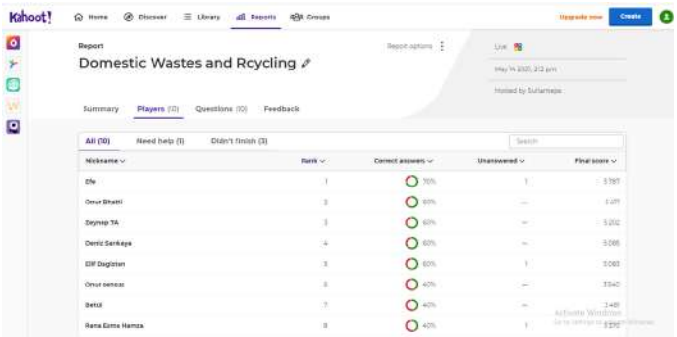
RESOURCES

The subject of technology is treated in a number of articles. For general treatment, see technology, history of; hand tool.



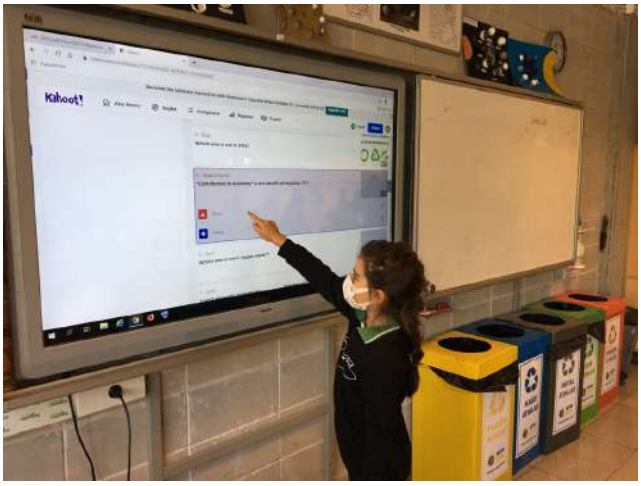






ACTIVITY 9

Students exercises:



STUDENT'S EVALUATION

The lecture presentation created with Voki was recorded with the screen recording method and added to the Edpuzzle platform. After the class was created in Edpuzzle, the course link was sent to the students. After the students watched the lesson, a quiz was conducted in the Kahoot environment. The quiz consisted of 10 questions and each question was given 20 seconds. According to the results of the students;

Student success
Exam general difficulty
The rate at which each question can be done by the student
Feedbacks such as student feedback were received.

BIBLIOGRAPHY

- https://kahoot.com/
- https://www.voki.com/
- https://edpuzzle.com

Without from these platforms, in line with the student's feedback, if necessary, a live lesson can be given to the student by using portals such as Zoom or Gmeet.

SCALABILITY

The subject of "Domestic Waste and Recycling" is a topic that appeals to 7th grade students. Our lessons that have to be processed virtually due to the pandemic conditions, the evaluations we do; It can be done face to face with students after the pandemic process.

In addition, our students may be asked to correspond to what they have learned in the course in daily life. For example:
Like a student throwing the battery in a box where only batteries are disposed of, collecting papers and throwing them into the paper waste bin.

MORE INFORMATION

Because of recycling is a very general subject, students can make posters that appeal to everyone.
Competitions on this subject can be held in schools and symbolic awards can be given.
These competitions can also be held on a course basis. For example, a program related to recycling in computer class, problems emphasizing the importance of recycling in Mathematics class, articles on recycling in English class can be read.

ACTIVITY 10

TITLE BASIC GEOMETRICS DRAWING

ABSTRACT

This is a technical drawing activity with an artistic ending. Students will learn some basic geometric drawings:

- Thales' theorem.
- The bisector of a segment.
- Drawing a parallel to a straight line through a point.
- Drawing a perpendicular to a straight line through a point
- Drawings a 60 degree angle.
- Finding the centre of a given circle

Finally students will apply what they have learned to draw a bicycle and give it an artistic and personal finish.

AUTHOR/S
IES Mediterráneo

DATE 24/05/2021
VERSION 1

DIDACTIC OBJECTIVES

The didactic objectives of the activity are as follows:

- To learn the technical foundations of these layouts.
- To apply these lines to the resolution of more complex works.
- To develop skills and abilities that enable students to express graphic solutions with precision, clarity and objectivity.
- Correct use of the compass, square and bevel, ruler and pencil.

- ☐ **SCIENCE**
- ☐ **TECHNOLOGY**
- ☐ **MATHEMATICS**
- ☐ **GEOGRAPHY/HISTORY**
- ☐ **LANGUAGES**
- ☐ **LITERATURE**
- ☐ **MUSIC**
- ☑ **OTHERS: ARTS**

ACTIVITY 10

EDUCATION LEVEL

This activity is prepared to be completed by...

☑ **12 - 14 YEARS** ☐ **14 - 16 YEARS** ☐ **OTHERS .....**

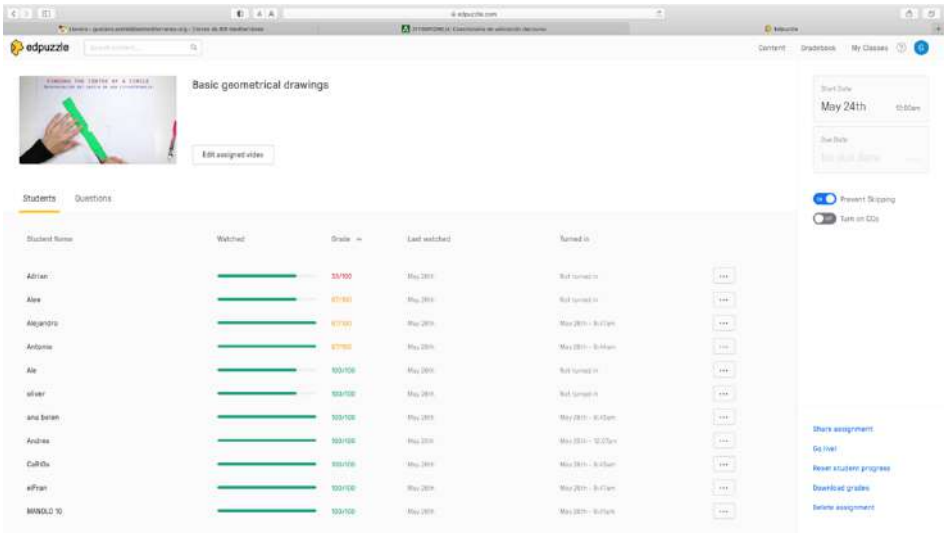
TOOLS NEEDED

- Drawing sheets
- Graphite pencil
- Eraser
- Compass
- Ruler
- Square and bevel
- Coloured pencils, felt-tip pens and watercolours
- Different types of paper for collage, glue and scissors.
- Smartphone, tablet or computer.
- Kahoot account for evaluation.

DEVELOP ACTIVITY

Students watch at home a video with the theoretical part of the activity, https://edpuzzle.com/assignments/60abf31d6582b6417f8d0ce1/watchin which technical drawing exercises, called Basic Geometric Drawings, are explained step by step.
The video is on the platform www.edpuzzle.com, the students cannot advance the video, they must also answer several questions that are interspersed, the playback stops at each question and does not continue playing until the question has been answered.

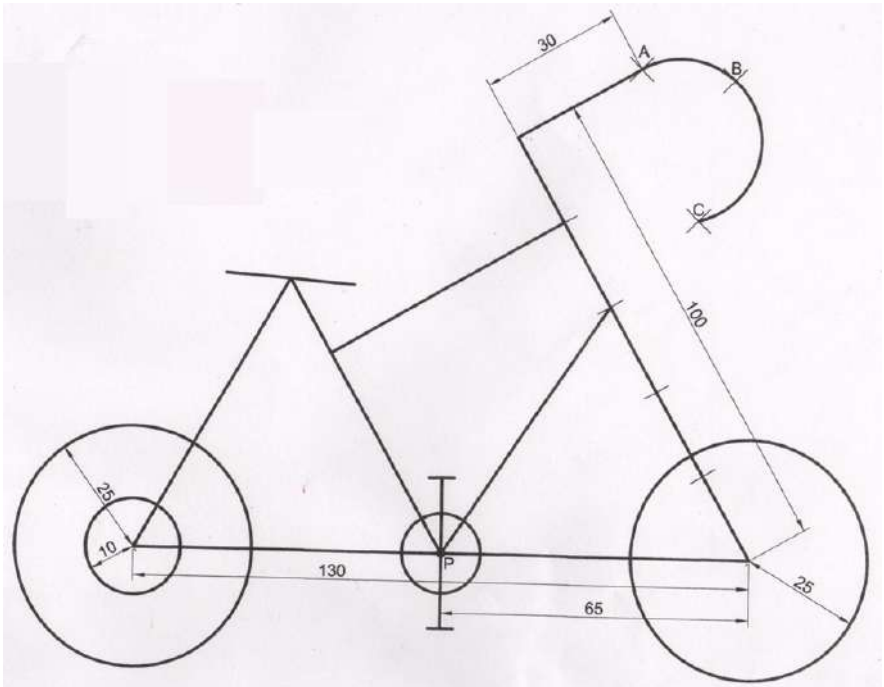
ACTIVITY 10



At the beginning of the class, the teacher explains the task:

BASIC GEOMETRIC DRAWINGS

1. Draw a 60º angle
2. Divide a segment into equal parts.
3. Draw a perpendicular line at the end of a segment.
4. Draw a circle passing through 3 points.
5. Draw a line parallel to another line passing through a point P.



ACTIVITY 10

Then the students carry out a practical exercise, during 20 minutes,they will draw a bicycle applying the Basic Geometric Drawings studied at home, up to this point the first part of the exercise in which all the students had to arrive at the same solution.

The second part of the exercise focuses on enhancing and developing the creativity of each student in order to obtain different, original and creative results from the same image, for which they will have to make an artistic interpretation of the bicycle that they had previously obtained by means of technical procedures.

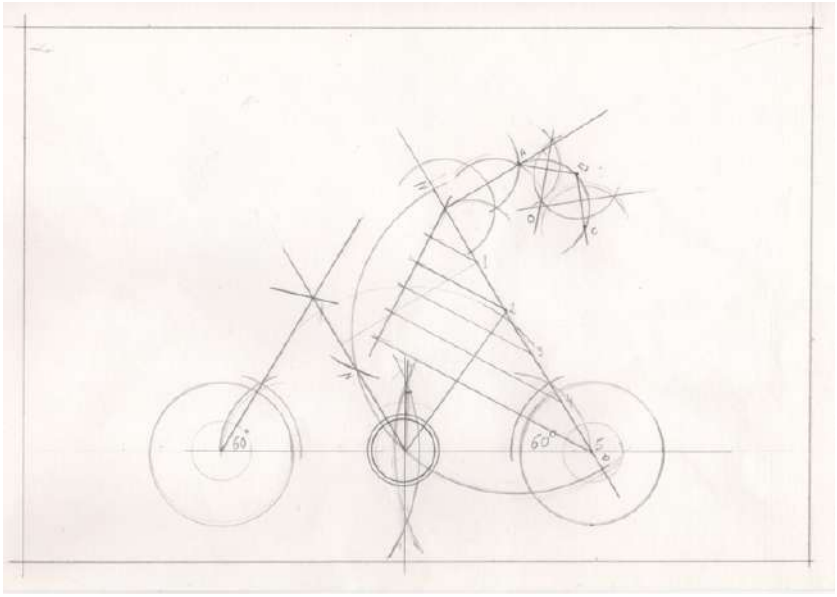
At the end of the task, the students will present their work to the rest of the class.

Finally, the contents studied will be evaluated by means of a Kahoot.

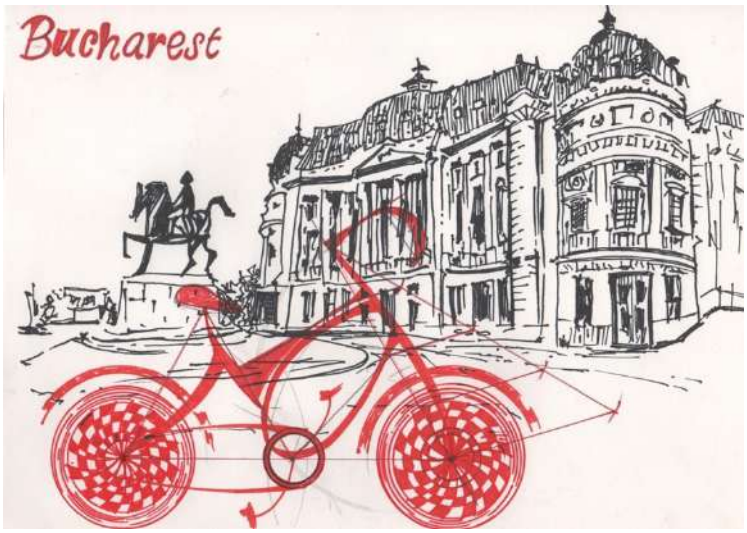
RESOURCES

ACTIVITY 10

Final solution:



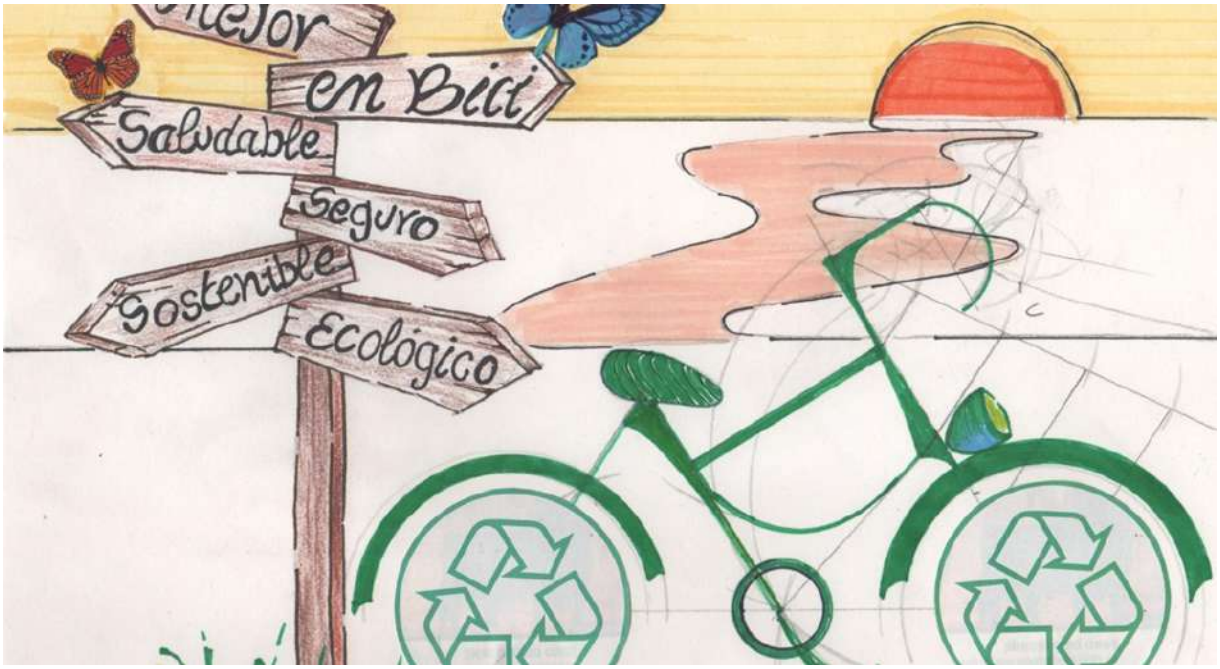
Students exercises:



ACTIVITY 10


Italia
Pisa


Istanbul


en Bici
Saludable
Seguro
Sostenible
Ecológico

STUDENT'S EVALUATION

To evaluate the activity we will consider 3 parts:

- The questions that the students have answered in edpuzzle.
- The activity carried out in class, for which we will take into account:
  - Geometric problem solving, assessing the method and reasoning of the constructions.
  - Solving geometric problems, valuing the finish and presentation.
  - Creative solutions provided.
  - Correct use of the artistic techniques employed.
- Students will take a 10-question test using the Kahoot application (Basic geometrical drawings-ISTEDU)

BIBLIOGRAPHY

We have used the following applications in this activity

- https://kahoot.com/
- https://edpuzzle.com

SCALABILITY

For higher levels, other geometric lines such as bisector, median, height, etc. can be included. With these lines, another practical activity would be sought in which the pupils would apply the geometric lines learned from an artistic point of view.

MORE INFORMATION

Students should do their homework trying to convey the idea that it is a healthy, ecological and sustainable means of transport because it does not pollute, does not emit greenhouse gases, does not generate noise, is economical and valid for moving around urban areas as well as the countryside, the beach or the mountains.
It is a healthy way of life within everyone's reach!