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Learning Topic	Lesson Plans	Introduction	Overview of the LP	Timeline	Learning Objectives	Teaching methodology	Instructional Strategies	Materials & Resources	Assesment Plan	Reflection & Feedback
Climate Change and Science	*World of Threatened and Endangered Plant Species*	***This Lesson Plan was developed to provide secondary grade students with a special resource to facilitate their understanding of endangered plant species conservation.Moreover,one of the aims was for the young students to understand that endangered species is a global issue and to learn the difference between the terms threatened, endangered, and extinct.They also will learn facts about select endangered plant species from around the world, with focus on those found in Europe/Romania, and be able to discuss.***	This lesson plan is designed as a STEAM lesson. By working on the activities,the students will gain extensive knowledgeOn how global warming affects local plants ,Will learn about threatened or endangered species of plants in their area and will be able to identify of create ways of protecting these plants from the devastating effects of climate change.	2 lessons,50 minutes each. Throughout the first lesson, the students are introduced to a scripted slide show which acquaints them with several endangered plant species in different countries and then an emphasis on species in Romania. Students will then use this knowledge to play "The World of Threatened/Endangered Species" game with their classmates. The second lesson focuses on research and collecting data ,based on the knowledge acquired by the students in the first lesson. It is an outdoor activity and working in teams, students go on a plant hunt using the description and pictures found on the data charts. Students collect leaves as evidence of finding the plant	Students are expected to gain extensive knowledge of climate change & global warming,to get familiarised with the role of Science in studying endangered plant species and to find out important arguments of integrating Science into environmental problems.	Teaching methods such as brainstorming, data collection, online / field research and group collaboration help students improve both their skills and understanding of the importance of medicinal plants and ways to prevent them from disappearing.	The instructional strategies involve both multimedia resources and practical applications. The students are engaged into using their skills like observing, describing, identifying, collecting and filling in information in such a way that the strategies applied turn into a dynamic and interactive learning experience.	The internet is a main resource, along nature itself in the second part of the lesson. The materials needed in order for the teacher and students to complete their tasks are printed resources on Endangered plant Species, computer and electronic devices, projector, interactive whiteboard, paper sheets,pens/pencils. These various tools ensure a hands-on and comprehensive way of teaching and learning all along.	Assessment involves the students collecting and pressing the leaves from the plants (that are not threatened/endangered) discussed during the nature walk. Students can use their collected data along with the pressed leaves to create a poster board presentation. In this practical way, they can practically demonstrate that the lesson's objective of familiarizing students with the importance of the local medicinal plants and acknowledging the fact that they must be protected from the damaging factors.	By being able to research and create their own scripted slide show for the first part/lesson, and creating a poster board presentation after the outdoor lesson. the students demonstrate their ability of collecting and interpreting data .The reflection and feedback help students see the relevance of their learning about threatened and endangered plant species, their progress, and their potential to achieve their goals. Positive feedback can also boost students' confidence and self-efficacy, essential for their motivation and persistence .
	Broken Webs	***This Lesson Plan was developed to provide fourth grade students to facilitate their understanding of greenhouse effect topic. They will learn about food chains. The students will investigate the problem after being informed through various resources. Through different means, they investigate the distinction of both natural habitats and consequently, food chains,***	The lesson plan is designed as a STEM lesson. By working on the activities, students will gain extensive knowledge about the main reasons why animal or plant species become threatened or endangered, understan (and explain) the interdependence of species within an ecosystemand be able to identify the causes of habitat destruction. Students are expected to begin to adopt an ecological lifestyle and to consider the	50- minutes. During the first part of the lesson, students get acquainted to the Broken-Webs concept. The teacher explains to the students that the community is made up of a large number of species that interact with each other through competition, predation, mutualism, commensalism and parasitism. During the second activity, the students must work on a project together. They are divided into 4 groups and given large	Students are expected to gain knowledge on Broken Webs and, on the fact that habitat loss is a primary cause in endangered species and explain the process.	Brainstormig /Investigative method/Elaborative questioninoing/Oral presentation	Teaching strategies include providing a thorough understanding of the Broken Webs. In the first part, the teacher explains to the students what Broken Webs (food chains) are: their importance and uses a video, to exemplify the main points and for them to learn more about the process involved in any food chain. The second part consists of a project based on assumptions. The third part	Computer and electronic devices/Video projector/Large sheets of blank paper or whiteboards/Writing utensils.	The evaluation includes the engagement of the students in all the activities. The evaluation will be done using worksheets and the students' presentations.	At the end of the lesson, to assess the students' achievements, the teacher gives them a worksheet and the students will explain the reasons why the given chains are broken. This interactive reflection allows for immediate feedback, fostering a continuous improvement loop. The lesson content also encourages student to understand the main reasons why animals or plant species become threatened or endangered. Moreover, the feedback given by the
	Global Warming and Green House Effect	***This lesson plan was developed to provide 4th grade students a better understanding of global warming and a greenhouse effect. Science will be the instrument through which the students meet the information and later on, act against global warming in a personal***	The Lesson Plan is designed as a STEAM lesson. By working on the activities, students will gain extensive knowledge about the main reasons why there are so many problems caused by the greenhouse effect, understand and explain the appearange of the worldwide	15 minutes- During the first part of the lesson, students get acquainted to the greenhouse affect concept. The teacher shows the students pictures depicting natural disasters. After asking them questions about the images, the teacher explains that all this is happening because	Providing examples of potential problems and negative consequences and global warming and a greenhouse effect/ designing the concept through a poster/ proposing actions to reduce the greenhouse effects to save our planet.	Brainstorming/Inquiry-based teaching/Discussion/Application of science in real contexts	Teaching strategies providing a thorough understanding of the greenhouse effect. In the first part, the teaher explains the students what greenhouse effect is, what the consequences of global warming are and presents real life facts about the	Computer and electronic devices/projector/interactive whiteboard/internet access/sheets of paper/coloured pencils/pens/marker	The evaluation includes engagement of the students in all the activities by using worksheets and the students' presentations.	At the end of the lesson, to assess the students achievements, the teacher gives them the opportunity to express their own ideas about preventive actions to reduce global warming and the greenhouse effect. The lesson content also encourages students to understand the main reasons why global
Climate Change and Technology	*Greenhouse effect*	***This Lesson Plan was developed to provide secondary grade students to facilitate their understanding of greenhouse effect topic. They will: Knowledge of greenhouse effect & green Technology' importance in tackling climate change relevant problems.***	The lesson plan is designed as a STEM lesson. By working on the activities, students will gain extensive knowledge about climate change and global warming, create a high temperature alarm, create informational content on the topic. Students are expected to begin	First par: 2x50 min; Second part:2x50 min Trought the first part, te students have overview, discuss about the topic, doing simple experiments. In the second part students use micro:bit to create a code for led indication the high temperature.	Knowledge: Knowledge of greenhouse effect & green Technology' importance in tackling climate change relevant problems Integrating technology into environmental problems Skills:	Testing, Experiments, Discussion, Demonstracion	Teaching strategies include providing a thorough understanding of the greenhouse effect. Students do experiments in the first part, discuss and create informative content on the topic. In the second part, you build code for the micro:bit - an	https://www.youtube.com/watch?v=SNS-DnQHQmE What is Greenhouse effect? Record sheets for the experiment https://ouhrsmirn-my.sharepoint.com/:w:/g/personal/irina_smirnenski_com/	Assessment includes participation in the discussion about the greenhouse and creating a temperature alarm code, students demonstrate their ability to collect and interpret data. Reflection and feedback help students see the relevance of their GHG	By being able to investigate the problem through experiments and create their own observational data for the first part/lesson effect, the conclusions drawn during the experiments in the first part, the code created in the second part.
	How can we explain about greenhouse gases to younger student from the primary school	***This lesson plan was developed to provide secondary school students to facilitate their understanding of the topic of the greenhouse effect. They will: Learn about greenhouse gases and analyze data, mind map, build 3D models of greenhouse gases, create information flyers for younger students and organize an***	The lesson plan is designed as a STEM lesson. By working through the activities, students will gain in-depth knowledge of greenhouse gases, create models of greenhouse gases, create informational content on the topic, and share it with younger students. Students are expected to begin to adopt an ecological lifestyle	First part: 2x50 min Second part: 2x50 min During the first part students discover the topic about greenhouse gases - watching video, take a notes, mindmaps discuss, doing an simple experiment. Second part - create 3D models, flayers "What can we do?" with mane goal: to inform the younger students from rimary school.	Knowledge: Knowledge of greenhouse effect The information is important to be public in order to have a good effect Using technology to make the topic public. Integrating technology into environmental problems Skills:	Testing, Experiments, Discussion	Teaching strategies include providing a thorough understanding of greenhouse gases. In the first part students watch a video and analyze it, discuss and create informational content on the topic - flyers, in the second part create 3D models, in the third part organize and an exhibition	Resources: https://www.youtube.com/watch?v=sTvqIijvVTg https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions https://sketch.io/sketchpad/ https://coggle.it/ https://www.canva.com/	Assessment includes students notes in the first part about the greenhouse gasses, the 3D models, create in the second part, and participating to organise the event in the third part. Fourth part: public lesson	By being able to explore the greenhouse gas problem through experiments and create their own observational data for the first unit/lesson, conduct experiments, create models and organize an information event, students demonstrate their ability to collect and interpret data, search for solutions of the problems, organize an information
	Acid rain	***Secondary school students to facilitate their understanding of the topic of acid rain. They will: Learn about acid rain and analyze data, discuss videos, search for solutions "What can we do to reduce acid rain", make flyers and organize a public lesson at school.***	***This lesson plan was developed to provide secondary school students to facilitate their understanding of the topic of acid rain. They will: Learn about acid rain and analyze data, discuss videos, search for solutions "What can we do to reduce acid rain", make flyers and organize a public lesson at school.***	2x 50 min The experiment is take a week	Knowledge: Knowledge of acid rain The information is important to be public, there have a good effect. technology is important to make the topic public. Integrating technology into environmental problems	Testing, Experiments, Discussion	Teaching strategies include providing a thorough understanding of acid rain. In the first part, students watch a video and analyze it, discuss and create a mind map with notes, and Padlet, find out which human activities create acid rain. In the second part, they conduct an	https://www.youtube.com/watch?v=OQVVzFPChAU&t=22s https://www.climateandweather.net/wp-content/uploads/2022/08/Acid-Rain-Side.jpg	Assessment includes students' notes in the first part about acid rain, part two - the experiments carried out, part three: creating a flyer "What we can do to reduce acid rain", part four: organizing a public lesson in school.	By being able to explore the problem through experiments and create their own observational data for the first part/lesson and create a What We Can Do flyer, students demonstrate their ability to collect and interpret data, search for solutions to problems, organize information campaign and attract followers. Reflection and
	Earth is in our hands	***This lesson plan was developed to provide secondary school students to motivate their commitment to save the Earth. They will: what it means to be an eco activist, how they can be one, how important it is to have eco behavior, what we can do for the Earth. Activity 1. Climate change: We are the problem and a solution***	The lesson plan is designed as a STEM lesson. The students from secondary school will: what it means to be an eco activist, how they can be one, how important it is to have eco behavior, what we can do for the Earth.	40/50 mins x 2 During the first part, the students discover what mean an eco-activist, why is so important to be that.	Knowledge of climate changes Technology is important to feel deep inside the global problem with climate change. Integrating technology into environmental problems Students will explore how the environment of their own community has	self-study, Discussion	Activity 1. Climate change: We are the problem and a solution Activity 2. What means Climate Activist Activity 3. How the Earth is changing self-study, discussion, Activity 4. How my Home changed. What to do?	https://www.youtube.com/watch?v=cbuHNX8AygI&t=17s https://earth.google.com/web/@9.0403228,18.8896453,44.73205131a,12706123.79615325d,30y,0h,0t,0r/data=MikKJwoICEIxYnBmNUZNY1ZRSjYtZHZBbUdDcHJnZEITRnJxZlFsOUcgAQ	The evaluation includes the engagement of the students in the first part - the activities for awareness of what it means to be an eco activist, how the climate has changed over the years, in the second part what we can do and how to inform the public about the problem	By being able to explore the issue of climate change over the years through observations for the first unit/lesson and create an Eco Activist, students demonstrate their ability to collect and interpret data, search for solutions to problems, organize an information campaign and attract followers. Reflection and feedback help students see
	Melting glacial ice	***This lesson plan was developed to provide secondary school students to know more about melting gracial ice. They will: what is the problem, doing experiments, watching videos, create their own animation to share with other students; create a flyer "What can we do". Share with other the products of the activities.***	The lesson plan is designed as a STEM lesson for the students from secondary to know more about melting gracial ice. Working on the activities students will gain extensive knowledge of the eco problems and find solutions about it. They will share the knowledge with other and it will be important about their	40/50 mins x 2. In the first part activities are: what is the problem, doing experiments, watching videos, create their own animation to share with other students. Second part: create a flayer "What can we do". Share with other the products of the activities. So, they can help to the comunity to be eco-friendly.	Learning about Melting glacial ice Learning about human activity, which is the reason for the Melting glacial ice. Experiment – create a model of Melting glacial ice. Share the results with other students in the school.	Experiments, Discussion	Teaching strategies include providing a thorough understanding of the melting glatial ice. First part: "Melting glacial ice". Activity 1. A global problem about Melting glacial ice. Activity 2. Create an animation "Melting glacial ice". Second part. Experiment 1. Why are	https://www.youtube.com/watch?v=OQVVzFPChAU&t=22s https://www.youtube.com/watch?v=yLm7PSvxW8g&t=34s	The evaluation includes the engagement of the students in the first part - the activities for knowledge about melting glacial ice, watch a video, discussion, make an animation about the topic. To be active about find the solutions: students create a "to do" list, create a flayer and shaare it with	By being able to research and create their animation create a presentation flyer, students demonstrate their ability to collect about melting glacial ice, watch a video, discussion, make an animation about the topic. To be active about find the solutions: students create a "to do" list, create a flayer and shaare it with their goals. Positive feedback can also increase
Climate Change and Engineering	*The Cities of the Future - Smart Cities*	***This lesson plan was designed to allow secondary school students to get in touch with the role of engineering in science and technology in combating climate change. Students will understand that engineering in its various branches can be very important and applied in different***	This lesson plan was developed to sensitize students about climate change in the role of the engineering that has to think about the concept of "Smart City".	90 mins. First time, teacher presents the role that Engineering can play in "Today's World", in the fight against Climate Change. Then it will be a brainstorming that leads to the idea of smart cities and the issue of urban mobility and the pollution that exists in large cities; the sustainable development of the extraction	Learning about Smart Cities in Europe and their characteristics; Knowing about the necessary conditions to be "a smart city"; Read information about good engineering practices in combating climate change; Viewing a documentary about smart cities;	Forms of teaching: collective; group and individual.	Teaching strategies include providing a thorough understanding of the cities of the future and the smart cities. First part: Learning about Smart Cities in Europe and their characteristics; Activity 1. Teacher presents the role that Engineering	Materials: Computer and electronic devices, projector, interactive whiteboard, paper and pencil. Resources: https://www.ordemengenheiros.pt/fotos/editor2/alteracoesclimatic	The evaluation includes the engagement of the students in all the activities. The evaluation will be done using questionnaires and the students presentations.	By making their oral presentation on smart cities, students will be able to show what they have learned and reveal their critical thinking about this environmental theme.
	Smart cities and the future of urban mobility	This lesson plan was developed to provide secondary school students to facilitate their understanding of the concept of "Smart City", their learning of the difference between a traditional and a smart city and the necessary conditions to be considered a smart city. They can also know smart mobility concept in a	This lesson is designed to prepare students for being conscious citizens who can solve some solutions to build a smart mobility city.	90 min. 1st Step: As a motivational strategy, students will watch a short documentary about "How do you live in a Smart City"? A discussion follows on what conditions are necessary for a city to be smart? 2nd Step: After the discussion, the teacher projects the following scheme on the	Students are expected to learn the concept of "Smart City"; the difference between a traditional city and a smart city; the necessary conditions to be considered a smart city and to Know smart mobility concept in a city and solutions.	Learning Methods & Techniques: Exposing methods; Brainstorming; Oral presentation Elaborative interrogation; Online research; Viewing of documentaries.	Teaching strategies include providing a thorough understanding of the future in the smart cities and the people's behavior to live in. First part: in this part, students have to know the conditions to live in a smart city. Activity 2. Group works: what should be done in Barcelos to	Materials: Computer and electronic devices, projector, interactive whiteboard, paper and pencil. Resources: https://www.ordemengenheiros.pt/fotos/editor2/alteracoesclimatic	The evaluation includes the engagement of the students in all the activities. The evaluation will be done using questionnaires and the students presentations.	By doing and presenting their group works, students made a list of things that need to be done in Barcelos for this to be a smart mobility city. Therefore, this class allows students to have a conscious and critical thought with a focus on environmental problems.
	Mobility in my city	***With this lesson plan, teacher want their students to know smart mobility concepts in a city and some solutions to improve the eco-mobility. Students can learn how the engineering can help and be useful on finding mobility solutions in a city and how to put them in practice. They should yet examples of smart cities around the world that could inspire them to have a conscious vision of the city.***	With the development of this class, students will search and know about smart mobility, including how can it works in a city, by thinking about smart mobility solutions for his city.	90 min + 30 min. 1st Step: As a motivational strategy, students will watch a short documentary about the - "10 Smartest Cities In The World". From the video, a discussion begins on some characteristics of these smart cities and on the way they "look at the issue of urban mobility". 2nd Step: Based on the discussion, the different solutions presented by cities in relation to this issue are recorded on the board. Then the teacher invites the class to watch another short 1m30s video about smart solutions to be applied in cities from the point of view of mobility. 3rd Step - Next, the teacher invites the students to reflect on their city of Barcelos	Learning about smart mobility; smart economy; smart governance; smart environment; smart people; smart living and adapting habits into good choices to provide climate changes.	Learning Methods & Techniques: Exposing methods; Oral presentation take a quiz to do in the city; Online research Viewing of documentaries Forms of teaching: collective; group and individual.	Activity 1: As a motivational strategy, students will watch a short documentary about the - "10 Smartest Cities In The World". From the video, a discussion begins on some characteristics of these smart cities and on the way they "look at the issue of urban mobility". Activity 2: Based on the discussion, the different solutions presented by cities in relation to this issue are recorded on the board. Then the teacher invites the class to watch another short 1m30s video about smart solutions to be applied in cities from the point of view of mobility. Next, the teacher invites the	Materials: Computer and electronic devices, projector, interactive whiteboard, paper and pencil. Resources: https://youtu.be/E6I0wLG7cSI (10 Smartest Cities In The World) https://www.youtube.com/watch?v=y5_eLz36tL0 (Changing How We Move with Intelligent Transportation Solutions | Smart City)	The evaluation includes the engagement of the students in all the activities. The evaluation will be done using questionnaires and the students presentations.	With this class, students perform a statistical treatment of the questionnaires to the population of Barcelos about what they would like to see resolved about the mobility of their city and how. They record the results, the solutions presented and then publish them on the school's website and send them to the municipal council.
	Shaping Eco citizens	***This lesson plan is developed to raise awareness about climate change through the topic Eco cities and Eco citizens. Working on the lesson plan students will learn about climate change and global warming, define "Eco citizen", describe how an Eco city should look like, list types of renewable energy sources, describe waste sorting and how it should be done and use Art to learn about climate change and global warming.***	***The lesson plan is conceived as a school project that takes a whole school day for its implementation. Working on the activities students will gain extensive knowledge of climate change & global warming, new terms Eco city & Eco citizen and integrate Art into environmental problems. It is expected that students will start applying ecological lifestyles and consider environmental consequences before taking a decision.***	***School project day. There are several parts that are included in the lesson plan: 1. Introduction - talking to students about what they consider an Eco city; 2. Part 1 - research the topic using technologies; 3. Part 2 - making an Eco city model and 4. Presentation - creating the video using the produced Eco city model.***	***Students are expected to learn about climate change and global warming, define "Eco citizen", describe how an Eco city should look like, list types of renewable energy sources, describe waste sorting and how it should be done and use Art to learn about climate change and global warming.***	***The main teaching method used in this lesson plan is Project Based Learning. Along with it there are several more methods used to reach the set goals - brainstorming, online research, oral presentation and self produced creative work.***	***Instructional strategies include providing a thorough understanding of the term Eco cities and Eco citizens. Also during the lesson plan students gain knowledge about all possibilities that they can contribute that their schools or local communities become more "eco friendly".***	***Lesson plan requires different materials and resources like computer and electronic devices, projector, interactive whiteboard, recycling materials, cardboard (70x50 cm), pen and paper, scissors and glue. All resources students will research online using online materials.***	***Assessment involves evaluating to what extent students gained knowledge on the topic and to what extent they are willing to make changes in their everyday lives in their homes, school and local communities.***	***The lesson plan finishes with an activity where students can organize a meeting with the city mayor and present their final video product of their Eco city model. Students can also present possible innovations in their local community so their city becomes more Eco city. After a period a talk can be organised with the students to see the desired impact.***

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Climate Change and Art	*Save our planet!*	*This lesson plan is developed to raise awareness about climate change through the topic endangered animals . Working on the lesson plan students will learn about climate change and global warming, define the endangered animals, detect most endangered animals in your country, describe reasons why some animals become endangered, describe ways humans can help animals from becoming endangered and use Art to learn about climate change and global warming.*	*The lesson plan is conceived as a school project that takes a whole school day for its implementation. Working on the activities students will gain extensive knowledge of climate change & global warming, endangered animals and integrate Art into environmental problems. It is expected that students will start applying ecological lifestyles and consider environmental consequences before taking a decision.*	*School project day. There are several parts that are included in the lesson plan: 1. Introduction - talking to students about endangered animals; 2. Part 1 - research the topic using technologies; 3. Part 2 - making a theater play and 4. Presentation - creating the video of the theater play.*	*Students are expected to learn about climate change and global warming, define the endangered animals, detect most endangered animals in your country, describe reasons why some animals become endangered, describe ways humans can help animals from becoming endangered and use Art to learn about climate change and global warming.*	*The main teaching method used in this lesson plan is Project Based Learning. Along with it there are several more methods used to reach the set goals - brainstorming, online research, oral presentation and self produced creative work.*	*Instructional strategies include providing a thorough understanding of the term endangered animals. Also during the lesson plan students gain knowledge about all possibilities that they can contribute that the protection of endangered animals becomes even more alive.*	*Lesson plan requires different materials and resources like computer and electronic devices, projector, interactive whiteboard, recycling materials, scissors, glue, coloring pens. All resources students will research online using online materials.*	*Assessment involves evaluating to what extent students gained knowledge on the topic and to what extent they are willing to make changes in their everyday lives helping save the endangered animals.*	*The lesson plan finishes with an activity where students using tablets or mobile phones, when finished with the play, will make a video of the theatre play. The theatre play can be presented to the whole school during some school event or celebration. Teachers can organize a visit to a museum, ZOO or an aquarium. After a period a talk can be organised with the students to see the desired impact.*
	Our beautiful flora!	*This lesson plan is developed to raise awareness about climate change through the topic endangered plants . Working on the lesson plan students will learn about climate change and global warming, define the endangered plants, detect most endangered plants in your country, describe reasons why some plants become endangered, describe ways humans can help plants from becoming endangered and use Art to learn about climate change and global warming.*	*The lesson plan is conceived as a school project that takes a whole school day for its implementation. Working on the activities students will gain extensive knowledge of climate change & global warming, endangered plants and integrate Art into environmental problems. It is expected that students will start applying ecological lifestyles and consider environmental consequences before taking a decision.*	*School project day. There are several parts that are included in the lesson plan: 1. Introduction - talking to students about endangered plants; 2. Part 1 - research the topic using technologies; 3. Part 2 - making an art work and 4. Presentation - organizing art exhibition.*	*Students are expected to learn about climate change and global warming, define the endangered plants, detect most endangered plants in your country, describe reasons why some plants become endangered, describe ways humans can help plants from becoming endangered and use Art to learn about climate change and global warming.*	*The main teaching method used in this lesson plan is Project Based Learning. Along with it there are several more methods used to reach the set goals - brainstorming, online research, oral presentation and self produced creative work.*	*Instructional strategies include providing a thorough understanding of the term endangered plants. Also during the lesson plan students gain knowledge about all possibilities that they can contribute that the protection of endangered plants becomes even more alive.*	*Lesson plan requires different materials and resources like computer and electronic devices, projector, interactive whiteboard, recycling materials, scissors, glue, cardboard. All resources students will research online using online materials.*	*Assessment involves evaluating to what extent students gained knowledge on the topic and to what extent they are willing to make changes in their everyday lives helping save the endangered plants.*	*The lesson plan finishes with an activity where students organize art exhibition. The art exhibition can be presented to the whole school and members of a local community to raise awareness about the topic. Teachers can organize a visit to a botanical garden, nature park or a national park. After a period a talk can be organised with the students to see the desired impact.*
Climate Change and Math	*All around the climate change*	*Through this lesson plan, students approach the global warming and climate change from mathematical aspect with the help of data and learners see the impact of the human on the climate.*	*With the help of the lesson plan, student will gain intesive knowledge about climate change and its relation with the maths. Through the help of quantitative data, students will try to find the link themselves, so that they can see how maths can be integrated and help us find solutions.*	*Lesson will be done in two 40 minutes sessions. Students will inform themselves prior to the class, then they will observe how the impact on climate change is monitored and lastly they will apply the theoretical and mathematical knowledge.*	*Students are expected to learn about the human impact on the climate change, how mathematics are useful in tackling climate change problems, calculating carbon footprint, and read a simple dataset.*	*Inquiry and problem based learning with the support of brainstorming, testing and problem solving.*	*This section involves using self-learning as students inform themselves on the matter, and then they apply this theoretical knowledge with the combination of math through working on different datasets.*	*Computer and internet connection are the must to apply this lesson plan in a class. Also the students need pen and pencil to work.*	*Assesment involves students using the data to calculate their personal and household carbon footprint to see the human impact on the climate change.*	*We have a follow up activity: Students calculate their personal and household footprint on a monthly and yearly basis. Then decide on new habits to reduce their footprint, and calculate it again on a monthly and yearly basis. In the end they find the difference it would make in a decade to understand the significance of*
	Heat Wave	*In the "Heat Wave", this time students approach the term heat wave with the use of maths. They calculate, use percentages and work on the datasets they are given to see the long term effect, hence they will construct their own arguments.*	*Students observe and work on various datasets in order to see the long term effect of the climate change. Upon their work they will construct their own arguments autonomously.*	*Lesson will be done in two 40 minutes sessions and it consists of 6 parts that are possible to apply. Students are encouraged to understand the differences between weather and climate, and relevant maths vocabulary. Then, they will work on the available data. In the following parts, students observe the data and discuss the*	*Students are expected to learn about the global warming extensively, understand maths and integration of it into environmental problems, and work on the datasets.*	*Inquiry and problem based learning with the support of brainstorming, elaborative interrogation.*	*Students will inform themselves on the matter, and work on the datasets and percentages to develop criticizing skills in order to discuss the climate change in light of the questions.*	*Computer with internet connection is a must. Then paper, pencil and ruler is necessary to draw the dot map.*	*Assesment will take place after working on the dataset and answering to the questions corresponding to the output.*	*We have a follow up activity: Students select a city/region/country in a given database and follow the same steps and routine to develop its relevant calculation skills.*
	Climate Pattern	*In this lesson plan, students will work with real life numbers to understand the connection between human activity and climate change before developing inferences and predictions based on the data.*	*With the support of real life numbers and the data from different regions, students will work to find reasons and solutions to climate change and they will make some inferences and predictions with the help of climate change.*	*Lesson will be done in two 40 minutes sessions and it consists of 5 parts one being optional. Students will be introduced to relevant vocabulary, observe the average celsius for given years, and answering to the questions based on the findings.*	*Students are expected to learn about simple maths calculations, integrating maths into climate change and environmental problems, and how can maths be tool to reach a possible solution.*	*Inquiry and problem based learning with the support of brainstorming, elaborative interrogation.*	*Students will inform themselves on the matter, observe the average celsius for each year and discuss the climate change in light of the questions.*	*Computer with internet connection is a must in addition to graph paper, calculators, projector, paper, pencil.*	*Assesment will take place after working on the dataset and answering to the questions corresponding to the output.*	*We have a follow up activity and students will try to find answers to questions indicated in the lesson plan.*
Climate Change and CSP (ESICA)	*Sustainable Energy*	This lesson plan aims to actively engage students in scientific research focusing on the impacts of climate change on communities and the environment. It fosters the development of critical thinking skills, scientific literacy, and a sense of responsibility for the local environment. The overarching goals include learning about renewable energy, understanding scientific principles behind solar energy, and promoting awareness about climate change and its implications.	The lesson plan centers around the creation of a solar cooker, utilizing solar energy for cooking. The project involves various steps, including design and assembly, testing, cooking experiments, data analysis, and a final presentation. Students not only grasp the scientific principles behind solar energy but also develop critical thinking and practical application skills.	50-60 minutes / The project unfolds through a step-by-step process. Initial sessions focus on understanding solar energy's history and benefits, leading to the design and assembly of solar cookers. Testing, cooking experiments, and data analysis follow, concluding with a presentation showcasing the project's outcomes. The timeline ensures a comprehensive exploration of renewable energy concepts.	The learning outcomes encompass acquiring a deeper understanding of renewable energy sources, principles of solar energy, and environmental impacts. Students develop critical thinking skills, practical application of knowledge, data collection and analysis skills, and collaboration abilities. Attitudes such as environmental consciousness, curiosity, and appreciation for renewable energy are fostered.	The teaching methodology emphasizes research, observation, hands-on construction, trial and error, data collection, group collaboration, and discussion. Through collective, group, and individual approaches, the lesson plan accommodates diverse learning styles. Utilizing resources like handouts, the internet, and physical materials enhances the overall learning experience.	Instructional strategies include providing a thorough understanding of solar energy, its historical context, and practical applications. The step-by-step process involves designing and assembling solar cookers, conducting experiments, analysing data, and preparing presentations. Strategies aim to engage students in critical thinking, problem-solving, and collaboration.	The project requires materials such as a cardboard box, aluminum foil, glue, black construction paper, clear plastic wrap, thermometer, scissors, and writing utensils. Resources include handouts, internet references, and videos for additional insights. The diverse range of tools ensures a hands-on and comprehensive exploration of solar energy concepts.	Assessment involves the strategic evaluation of solar cooker effectiveness throughout the experiment. Students engage in individual reflection on the experiment's outcomes and group discussions to evaluate collaboration and success. This multifaceted assessment plan captures the project's educational and collaborative aspects.	Reflection and feedback are integral components of the lesson plan. Students are encouraged to reflect individually on the experiment's successes and areas for improvement. Group discussions facilitate collective reflection, while feedback on collaboration and success further refines the learning experience. This iterative process enhances understanding and ensures continuous improvement.
	Community gardening	This lesson plan aims to raise students' awareness about the significance of community gardening in promoting environmental sustainability, biodiversity, and the benefits of green spaces in urban areas. It also focuses on empowering students with the skills and knowledge to create their own community garden, fostering social responsibility, and enhancing communication skills through various activities.	The lesson plan spans a 50-minute duration, focusing on key goals such as creating awareness about community gardening, teaching the basics of setting up a community garden, and identifying relevant platforms. It also delves into sustainable gardening practices, emphasizing composting, water conservation, and natural pest control methods.	50 minutes / The class progresses through an engaging sequence, starting with an introduction to community gardening and its positive impact. The lesson includes showcasing local websites, playing a video, facilitating a round of questions, and discussing students' experiences and preferences. The session concludes with the distribution of a PDF brochure for practical guidance.	Students are expected to gain knowledge about the dangers of climate change, discover local community gardening groups, and identify suitable plants and implements for community gardens. The lesson also aims to develop skills in detecting, classifying, and building, fostering attitudes of environmental awareness, proactivity, and critical thinking.	Methods employed include feeding techniques through slides, problem-solving activities in identifying local community gardens, practical engagement through video and discussion, and valorizing methods via brochure distribution. The lesson accommodates collective, group, and individual learning approaches.	The instructional strategies involve a multimedia approach, incorporating slides and videos to introduce concepts. Students actively explore local websites, engage in discussions, and reflect on personal experiences. The distribution of a practical brochure enhances hands-on learning, making the lesson both informative and interactive.	Tools such as computers, electronic devices, projectors, and interactive whiteboards facilitate the multimedia aspects of the lesson. Evaluation relies on students' ability to identify the closest community garden. Resources include a projector, laptop, speakers, whiteboard, paper sheets, pencils, pens, and a PDF brochure offering step-by-step guidance for starting a community garden.	Assessment involves evaluating students' ability to identify the nearest community garden to their residence. This practical evaluation aligns with the lesson's objective of familiarizing students with local community gardening initiatives.	The lesson concludes with a round of questions and opinions, encouraging students to share their thoughts on the topic. This interactive reflection allows for immediate feedback, fostering a continuous improvement loop. The lesson content also sparks exploration of the possibility of initiating a community garden project within the school.
	Climate Change	This lesson plan, spanning 60 minutes, is designed to educate students on climate change, greenhouse gas emissions, and their impact. It aims to foster environmental awareness, promote sustainable behaviors, and inspire students to contribute to the UN's Sustainable Development Goals (SDGs). Additionally, the lesson focuses on developing problem-solving, collaboration, and critical thinking skills.	The lesson comprises two main steps. The first involves an informative and educational part, including videos on climate change, greenhouse gas emissions, carbon footprint calculation, and an introduction to the SDGs. The second step emphasizes discussion and group work, encouraging students to reflect on the material and collaboratively create action plans to combat climate change	60 minutes / The lesson unfolds in three steps. The first involves video presentations and carbon footprint calculations, while the second focuses on group discussions. The final step includes group work, where students create and present their action plans. The timeline ensures a comprehensive exploration of climate change topics. Step 1: Informative and Educational Part Step 2: Discussion Part Step 3: Group Work	The lesson aims to equip students with knowledge about climate change, greenhouse gas emissions, and the SDGs. Skills developed include problem-solving, critical thinking, and collaboration. Attitudes cultivated involve environmental awareness, proactive behavior, and a sense of responsibility towards combating climate change.	Various teaching methods are employed, including feeding methods through video presentations, problem-solving methods using YouTube searches, practical activities such as carbon footprint calculations, and valorizing methods involving group work and presentations. The lesson accommodates collective, group, and individual learning approaches.	Instructional strategies involve a multimedia approach, utilizing videos to introduce concepts. Students actively participate in discussions, reflect on material, and engage in group work to create actionable plans. This interactive approach ensures a dynamic and engaging learning experience.	Tools include computers, electronic devices, projectors, interactive whiteboards, pens, markers, white paper sheets, pencils, and speakers. Evaluation formats involve individual and collective assessments of students' proposed actions to fight climate change. Resources include available IT equipment, whiteboards, and additional materials for group activities.	Assessment involves students calculating their carbon footprint, actively participating in discussions, and collaboratively creating action plans. Individual and collective evaluations gauge students' understanding and contributions to combating climate change.	The lesson incorporates reflection through group discussions and encourages students to exchange ideas. The group work session fosters creativity, inspiration, and collaboration. Feedback is elicited through class discussions, allowing students to inspire one another with new solutions and proposals.