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Project Code: 2022-1-LV01-KA210-SCH-000082391
Project Title: « ROAD TO GREEN FUTURE»

Training materials for educators, parents and the public

The brochure summarizes the results prepared during the project activities

2024

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Content

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TEACHERS GUIDE AND TRAINING CONTENT FOR CLIMATE COACHING

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Road to Green Future Guide for teachers and training content for climate coaching

1. Environmental sustainability and climate change
2. Towards a greener economy
3. What are green skills
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References

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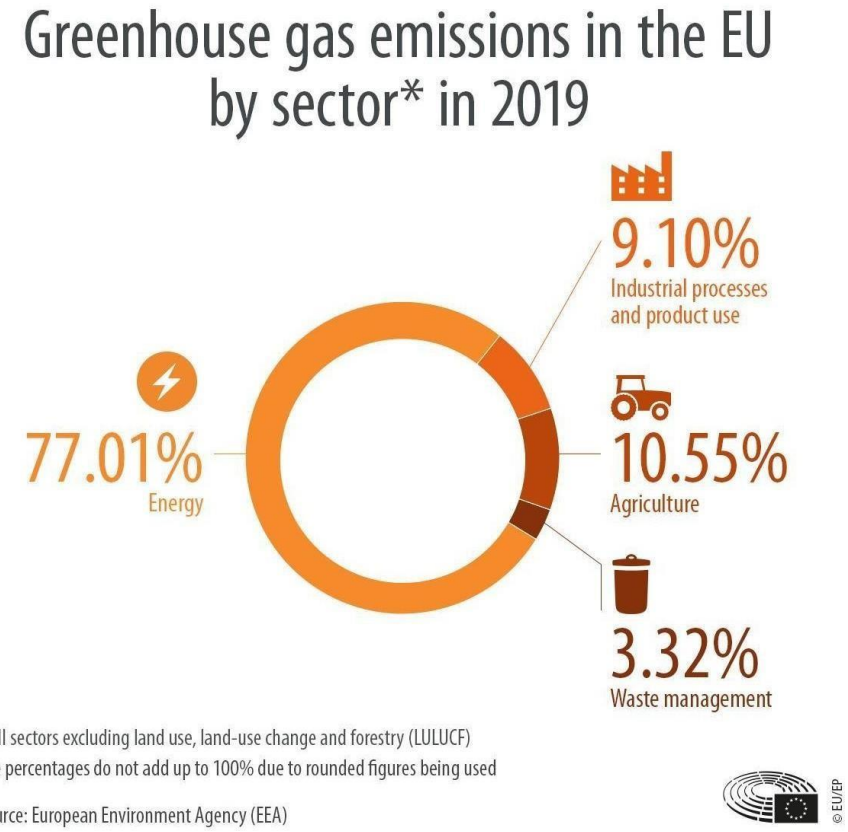
1. Environmental sustainability and climate change

Climate change is already affecting Europe in various forms, depending on the region. It can lead to biodiversity loss, forest fires, decreasing crop yields and higher temperatures. It can also affect people's health.
In 2021, the EU made climate neutrality, the goal of zero net emissions by 2050, legally binding in the EU. It set an interim target of 55% emission reduction by 2030 with the ***European Green Deal***, this goal of zero net emissions is enshrined in the climate law. The European Green deal is the roadmap for the EU to become, climate-neutral by 2050.



The ***Climate Pact***, the movement of people united taking steps to build a more sustainable Europe, launched by the European Commission as part of the European Green Deal, will continue the EU's work in this area and actively support labor organizations, educational bodies, and public authorities to help those seeking employment in the green economy.

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In order to tackle pressing environmental challenges like climate change, pollution and plummeting biodiversity, nations and businesses need to transition towards greener, resilient and climate-neutral economies and societies.
For this reason, the International Labour Organization ILO created the *Guidelines for a just transition toward environmentally sustainable economies and societies for all*.

A **Fair Transition** means greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind.
A Fair Transition involves maximizing the social and economic opportunities of climate action while minimizing and carefully managing any challenges – including through effective social dialogue among all groups impacted, and respect for fundamental labor principles and rights.
Ensuring a just transition is important for all countries at all levels of development. It is also important for all economic sectors – by no means limited to energy supply – and in urban and rural areas alike. [1] And it is crucial to teach it in the schools.

2. Towards a greener economy

A properly functioning circular economy does not only depend on the government and industry, consumers, too, have a role to play by choosing sustainable products, using them longer, repairing them or recycling them at the end of their life cycle.

The **circular economy** is an economy model that aims to minimize the withdrawal of resources, the biological ones, by reintegrating them into the biosphere and the technical ones by prolonging their use, promoting their reuse and putting them back into the cycle with recycling, thus minimizing production and waste disposal. The circular economy aims to replace the linear operating model of the traditional economy which is based on the massive withdrawal of natural resources, their transformation into products that are consumed, generating large quantities of waste that are disposed of.

The **green economy** aims to save and efficiently use resources and energy, on the development of renewable energy, recycling and renewal of materials in order to have better quality inclusive well-being, protecting natural capital and eco-systemic services.

The green economy is a vision of the economy in the era of the global climate crisis and environmental scarcity which therefore considers the ecological question a decisive driver for the possibilities of development, better well-being and social inclusion that takes into account not only a more equitable distribution of goods, but also of the damages caused to natural capital and ecosystem services. The circular economy can be considered the pillar of a green economy.

The transition to a climate-neutral economy will trigger a fundamental transformation across a wide range of sectors. New jobs will be created, while some jobs will be replaced and others redefined.

[1] https://www.europarl.europa.eu/news/en/headlines/priorities/climate-change/20180703STO07129/eu-responses-to-climate-change

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It's becoming necessary to:

- promote and support green employment
- address the skilling and reskilling of workers
- anticipate changes in workplaces of the future
- teach green skills to students from all ages

For this reason, **green skills**[2] are now a requirement for accessing the most diverse professions, because of the great importance that environmental issues are acquiring even within the production sector[3].

3. What are green skills

According to the definition of UNIDO - the United Nations organization for industrial development, **Green Skills** are the *knowledge, abilities, values and attitudes needed to develop and support a sustainable and resource-efficient society*.[4]

Green Skills today means all those skills that allow us to respond to the need for sustainable reconversion of production in every type of reality, from public and private offices to shops, industries, and companies.

Green skills can be summarized in two main areas:

- predisposition to energy saving
- attitude to environmental sustainability

The demand for green skills is now transversal and concerns all professions. An increasing number of companies are looking for professional profiles able to work with tools and products related to eco-sustainability. There are entire production sectors such as sustainable tourism, sustainable construction and mechatronics where the foundations of the Green Economy have a great impact[5].

Companies evaluate, as green skills for work, all those factors such as the attitude to energy saving and environmental sustainability, so they turn to human resources that demonstrate ability, skills, and attention in making corporate activities more environmentally friendly. Among the new trends that change the labor market, there is not only the creation and/or activation of new green jobs, in fact, but the attitude to energy saving and environmental sustainability is also the first skill required by companies immediately after the so-called soft skills.

[2] https://europa.eu/climate-pact/about/priority-topics/green-skills_en
[3] https://www.ilo.org/global/topics/green-jobs/WCMS_824102/lang--en/index.htm
[4] https://www.unido.org/stories/what-are-green-skills
[5] https://jobspa.it/blog/competenze-green-piu-richieste-in-futuro

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Why green jobs are essential for the future (video). International Labour Organization:

https://youtu.be/cSIg0hSm6OM?si=9JmKTNPLC3kdquHC

4. Circular economy within the machinery revamping

The "green professions" include both specific professions, which are required to meet the new needs of the Green Economy, and those that will have to face the challenge of reskilling skills in a green key.

The hope of European companies is that positions related to the reduction of environmental impacts in the technological-digital field will develop. As an example, in the most structured companies, it can be found the position of the mobility manager: a person in charge of corporate mobility, who is responsible for coordinating employee travel from home to work in a more sustainable way .

The fundamental principle on which the economic model of the circular economy is based, which aims to minimize the withdrawal of resources by promoting the reuse of biological resources by reintegrating them into the biosphere and of the technical ones by prolonging their use, is perfectly suited to the refitting sector and machinery revamping.

The concept of circular economy is the basis for explaining some of the benefits of refurbishing obsolete machinery. This covers the economic as well as the social and environmental aspects.

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The adoption of the circular systems in the industry consists of reuse, sharing, repair, revamp, refurbishment, remanufacturing and recycling to create a close-loop system, minimizing the use of resource inputs and the creation of waste, pollution and carbon emissions. Many of these aspects are included in the machinery revamping.

The recovery of obsolete machinery will have a strong influence on this whole model as it responds not only to environmental programs for waste management, energy efficiency and raw material reduction, but will also contribute decisively to the circular economy.

The machinery revamping brings positive financial and economic benefits. By raising the productivity of industry, modernized machines also raise the overall production of the economy; as a result, employment, national income, and the growth rate of the economy increase[6].

Source https://www.climate-kic.org/wp-content/uploads/2019/07/DRCE.pdf

[6] https://blog.ener2crowd.com/circular-economy-e-green-economy/

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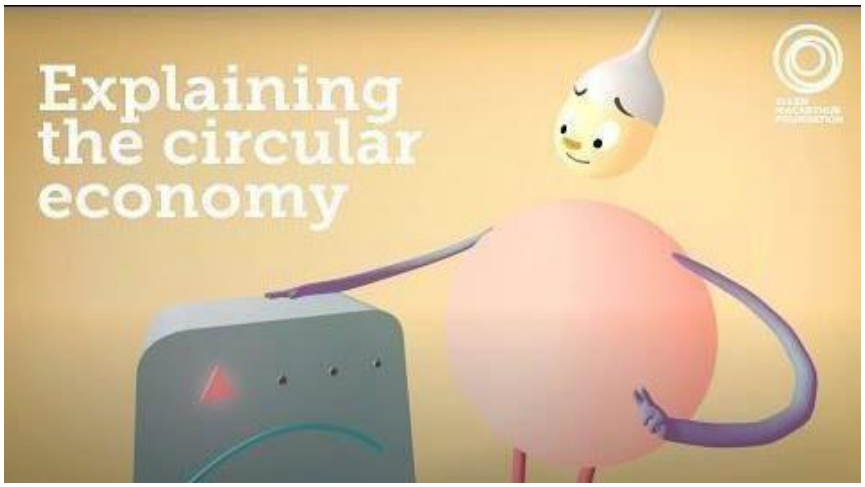
Machinery revamping is one of the key elements of circular economy. The companies that are using this system are able to retail and recycle the machines or their parts and modernize their equipment. In this way, companies will reduce the costs, update the machines according to their needs and follow the method of the digital circular manufacturing and modernizing of machines.

What If We Don't Buy Products and We Buy Service? Circular Economy Explained (Video): https://youtu.be/Cd_isKtGaf8?si=R58uD_Fb6yhboutn



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5. Benefits of revamping for a greener economy

Economic benefits

- Increase in productivity

Replacing outdated machines can be quite expensive. For companies, revamping is the best solution to update their machines and systems according to their needs at the lowest cost.
The use of machines after revamping helps producers to increase their income because a piece of updated machinery will operate faster. Users, operating a computer or one part of the new machine, will be able to complete the work faster than many workers engaged in doing the same work manually.

- Increased efficiency of the worker

By increasing the efficiency of workers, they can perform their duties in a better way than they would do manually. In this way, they will produce more accurately and faster qualitative products in larger quantities, moreover workers with more skills and competencies will be able to also increase their income.

- Create employment opportunities

Machinery creates employment and increases productivity, reducing costs for the industry and making goods and products cheaper; this leads to demand increase. The industry needs more workers in order to face the demand.
Some of the categories of increasing demand are Mechanical Engineers, Aerospace Engineering and Operations Technicians, Electro-mechanical Technicians, Sales Engineers, Computer and Information Research Scientists, Computer Programmers.

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Social benefits

A need to update or “revamp” such machines, without wasting resources for buying new equipment, results in a variety of benefits for businesses and the society itself.
In fact, revamping or “retrofitting” has become a highly significant approach in achieving sustainability at all social, economic, and environmental levels, and improve people’s standard of living.

- Reusing machinery components makes the process of modernization cheaper and more attractive, it also optimizes energy performance and help to prolong the life of machines

- Revamping pieces of machinery creates educational opportunities. It requires educated and skilled manpower for their operations, repairs, maintenance, and modernization. This leads to the demand of formal or non-formal technical education, which in turn creates a demand for relevant teaching staff. Educational opportunities regarding revamping extend to a large number of education fields, for example, engineering, machine learning, 3D design, software development, etc.

- Replacing or renewing outdated components of a machine, which results in better effectiveness of the entire machine, also results in a better workplace environment. Revamping ensures that a machine functions according to the latest technology demands and current standards of practices. In this way, the everyday work of employees dealing with machines and construction work is improved, including their working conditions and safety aspects.

- Revamping creates employment. Although a general notion regarding the machine industry tends to hold that machines replace the human workforce, a lot of human creativity is still needed when modernizing machines. when updating a machine, there are many levels that must be conserved: structure, dimensions, security systems etc. This turns revamping into an almost manual technique, unique to each brand and context, the need to Workers are always needed to manufacture new machines, or maintain, repair, and modernize older ones.

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Environmental benefits

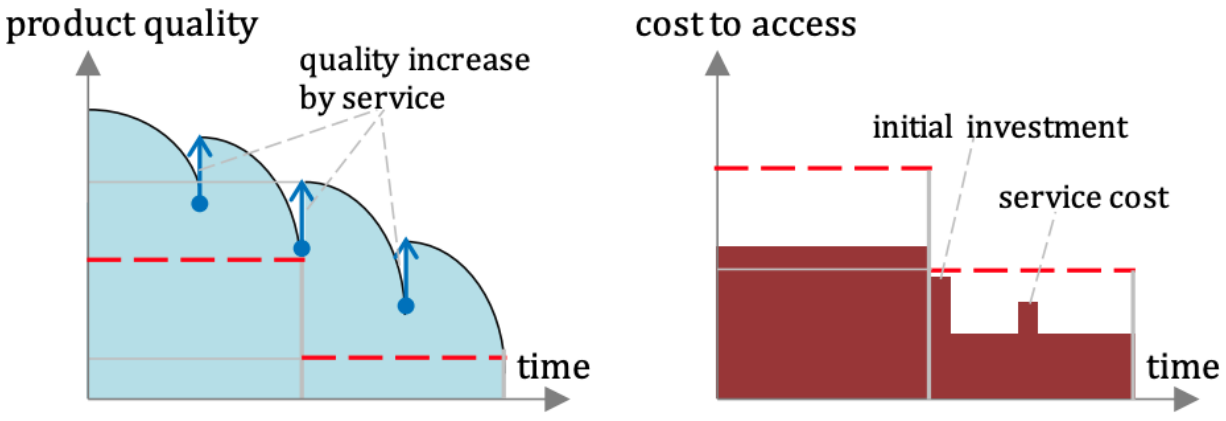
Today environmental sustainability is an important part of any economic activity and particularly in the field of industry.

The recovery of obsolete machinery will have a strong influence on this whole model as it responds not only to environmental programs for waste management, energy efficiency and raw material reduction, but will also contribute decisively to the circular economy.

One of the biggest challenges that industry is facing today is the need to further improve its **environmental performance** in order truly to become compatible with sustainable development. The industry must be an active actor in the process through responsible entrepreneurship and eco-efficiency. Increased environmental performance will mean reducing the negative environmental impacts that occur at each stage of the product life-cycle, from the extraction of raw materials through the production processes, transport and distribution of products to the use and disposal of products.
We must think about the need to promote a more sustainable model of economic activity that meets the double challenge of reducing its emissions and using its resources efficiently.
In this way, the model will move from being part of the problem to being part of the solution.

When we talk about sustainability, we do not refer exclusively to environmental issues, such as energy efficiency or climate change. The principle of sustainability is based on the connections between the environment, society and the economy.

Machinery revamping ensures that machines function smoothly according to modern technology demands. When modern equipment is up-to-date, through incorporating the latest technologies and features, they work more efficiently and are more probably to eliminate potential faults.
As a result, state-of-art components used for revamping results in the expand of the performance capacities of machines and leads to an overall more efficient workplace, that is safer and user-friendly for workers and employees, while being profitable for the employers.



Modernized machines help to increase the production and durability of goods and products.

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6. A more sustainable economic model - The Triple Bottom Line (TBL)

In 1994, author and entrepreneur, John Elkington, built upon the concept of the **triple bottom line** (TBL) in hopes to transform the current financial accounting-focused business system to take on a more comprehensive approach in measuring impact and success. Historically, businesses operated in service solely to their financial bottom line. However, as a result of the triple bottom line theory and application, some businesses began to realize the connection among environmental health, social well-being and the organization's financial success and resilience.

Triple bottom line theory expands business success metrics to include contributions to environmental health, social well-being, and a just economy. These bottom-line categories are often referred to as the **three "P's"**: **people**, **planet**, and **prosperity**[7].

The rationale of this theory consisted in encouraging companies to operate in the reference economic context through strategies and decisions that were able to simultaneously enhance (I) the environment (planet), (II) the social context (people) and (III) the economic-financial aspect (profit). These were three elements which, if jointly considered by the company, would have allowed the creation of greater production value, while operating, at the same time, greater attractiveness for investors and consumers and favoring an environment more consciously oriented towards ecological and social sustainability between employees.

Image Source: https://www.researchgate.net/figure/The-interconnection-of-the-elements-of-the-Triple-Bottom-Line-concept_fig1_329185478

[7] https://sustain.wisconsin.edu/sustainability/triple-bottom-line/

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- **People**

  This bottom line measures businesses' impact on human capital. A company using the triple bottom line has a responsibility to not only shareholders but also employees, vendors, customers, the community where it does business and anyone else impacted by the organization, whether directly or indirectly. It recognizes the interdependency of all the human relationships and interactions that enable the company to operate. This can translate into actions such as providing quality healthcare benefits and flexible work schedules to employees, offering opportunities for professional or educational advancement, creating a safe work environment, and engaging in fair labor practices.

- **Planet**

  Companies following the TBL model work to reduce their ecological footprint. They recognize that the smaller environmental impact a company has, the longer it can operate. At its most basic level, this involves not producing products that are unsafe or unhealthy for the planet and the people on it, but it also includes reducing consumption, waste and emissions. It involves specific actions, such as using renewable energy sources, reducing energy use, disposing of toxic materials safely and adopting a host of green corporate policies.

- **Profit**

  All companies are concerned about their financial standing, but businesses committed to the triple bottom line look at profits in terms of not just what they can do for shareholders, but also how they can help the broader community. In this model, a company helps stimulate economic growth and create wealth by compensating employees fairly, supporting local suppliers with its business, generating innovation, and paying its fair share of taxes. It also makes financially prudent but ethically driven decisions.

  In recent years, mainly due to the growing interest in environmental and social issues and in order to identify a criterion that was - even more than the Triple Bottom Line - capable of evaluating an investment as socially responsible, they have been elaborated by economic doctrines more avant-garde the so-called ESG (Environmental, Social, Governance) factors. Today, banking and financial institutions, and even more specialized organizations such as ESG rating agencies, are increasingly using the aforementioned paradigm as a yardstick to guide investment choices and the allocation of capital. From this it follows that a company, for example, to access certain forms of financing or public incentives, must necessarily make sustainable and responsible investments, respectful of environmental and social aspects, as well as aimed at generating profits.

  The environmental and social components play an increasingly key role also in the choices of consumers who prefer companies that carry out their business in a sustainable and responsible way. This creates a strong link between socially responsible investments and corporate reputation.

  The growing protection of the environment and respect for human capital are two aspects that, today in particular, require specific attention in any area. Thanks to the Triple Bottom Line concept and ESG factors, social and environmental issues play a role of increasing importance in the economic sector, and their evaluation represents an essential step in the sustainable and responsible investment strategies of companies[8].

[8] www.business.com/articles/triple-bottom-line/

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7. Importance of addressing Climate Change in Education

In a rapidly changing world, understanding and addressing climate change has become more critical than ever. As educators, teachers play a pivotal role in shaping the perspectives and actions of the next generation. For this reason, it is important to teach climate change and provide insights into effective strategies for imparting this knowledge to students in a meaningful way. Teaching climate change means:

- Be a Global Relevance. Climate change is a global issue that transcends borders and affects people worldwide. By teaching climate change, educators empower students to comprehend the interconnectedness of our world and the shared responsibility we bear for its future.

- Interdisciplinary Connections. Climate change is not confined to a single scientific discipline; it touches upon various subjects such as biology, chemistry, physics, geography, and social sciences. Integrating climate change into different subjects helps students appreciate its multifaceted nature.

- Critical Thinking and Problem-Solving. Teaching climate change fosters critical thinking skills as students analyze complex data, evaluate evidence, and develop solutions to address environmental challenges. These skills are essential for navigating an increasingly complex and interconnected world.

- Preparation for the Future. As stewards of the planet, students need to be equipped with the knowledge and skills to mitigate the impacts of climate change. Teaching them about sustainable practices and environmental conservation prepares them to make informed decisions and contribute to a more sustainable future.

Strategies for Effective Climate Change Teaching:

- Real-World Applications: Connect climate change concepts to real-world examples and current events. Discussing tangible impacts, such as extreme weather events, rising sea levels, or shifts in ecosystems, helps students relate the abstract theories to their daily lives.

- Interactive and Experiential Learning: Engage students through hands-on activities, experiments, and simulations. By experiencing the concepts firsthand, students are more likely to internalize the information and develop a personal connection to the subject.

- Incorporate Diverse Perspectives: Highlight the social and economic dimensions of climate change. Explore how different communities are affected and consider the diverse perspectives on environmental justice. This fosters empathy and a deeper understanding of the broader implications of climate change.

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- Coss-Curricular Integration: Collaborate with colleagues to integrate climate change topics across different subjects. This multidisciplinary approach helps students see the interconnectedness of climate change and promotes a holistic understanding of the issue.

- Encourage Action and Advocacy: Empower students to take action. Encourage them to participate in environmental initiatives, engage in community projects, or advocate for sustainable practices. By involving students in real-world solutions, educators instill a sense of agency and responsibility.

Teaching climate change is not just about conveying information; it is about cultivating a generation of informed and empowered individuals who can contribute to a sustainable future. By integrating these strategies into our teaching practices, we can inspire students to become active stewards of the environment and advocates for positive change. In doing so, we equip them with the knowledge and skills needed to address one of the most pressing challenges of our time.

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8. Some interactive methods to teach Climate Change

a. Promote and develop Green Skills through Gaming: Penji protects the planet!(online game)

Penjii Protects the planet is a mobile game that aims to teach players how to save their planet. This game is developed by Caped Koala Studios a result of an Erasmus+ project "Promoting Green Skills Through Games" project with partners from Austria, Croatia, Ireland and Spain all working together to promote Green Skills.

This game is an endless runner-style game, where the penguin Penjii runs around the planet to combat the problems facing our planet.

Penjii visits 4 different parts of the world (the Antarctic, a Beautiful Beach, a Chaotic City, Your Home) and each level aims to teach players about a specific problem facing our environment and planet.

https://capedkoala.com/penjii-protects-the-planet/

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b. Develop Green Skills through learning by doing: The renewable power of greenskills for women in Zambia (video)

The women in the Kalulushi compound in the Copperbelt Province, built their own houses with green technologies. With the help of the ILO through the Zambia Green Jobs Program and the Zambia Homeless and Poor people Federation, they got a loan to buy a small plot of land and they were trained in green technologies skills learning by doing to build houses using bricks made by sustainable materials.

The students can investigate real case situations around the world and inspire themselve to find solutions for combating the extreme wether conditions and adaptate to climate change.

https://www.youtube.com/watch?v=4K3AiZaiMoc

c. Educational Video for Kids

1. Climate Change For Kids - Global Warming (Learning Videos For Kids)

https://www.youtube.com/watch?v=tykLKCT7DyY

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Engaging and straightforward videos explaining climate change facts tailored for children are a powerful educational tools within classrooms. Following the video, teachers can seamlessly introduce the following questions:

- What causes global warming, and how does it impact the Earth's climate?
- Can you name a few examples of how global warming affects wildlife and their habitats?
- Which are the green hose gases that pollute the environment?
- What role do trees play in fighting against global warming, and why is it important to plant more trees?

2. Reduce, Reuse and Recycle, to enjoy a better life | Educational Video for Kids.

https://www.youtube.com/watch?v=OasbYWF4_S8

Some qusetions that teachers can introduce to the students:

- Why is it important to reduce, reuse, and recycle?
- Can you name three everyday items that can be recycled, and what can they be turned into?
- How can reducing our use of plastic contribute to a healthier planet?
- What are some creative ways we can reuse items instead of throwing them away?

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PROGRAM TO COMBAT CLIMATE CHANGE

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Program to Combat Climate Change

What is the Climate Change Program?

This program is the result of the Erasmus+ Project 022-1-LV01-KA210-SCH- 000082391 "Road To a Green Future" and has been developed, in accordance with the United Nations Sustainable Development Goals, by a team of teachers and trainers involved in this project from Turkey, Latvia, Italy, and Spain, with the aim of raising awareness and training the school community on climate change and promoting concrete actions to achieve sustainable development goals. In a rapidly changing world where increasingly extreme climatic phenomena, rising temperatures, greenhouse gas concentrations, glacier melting, and sea level rise are observed, schools assume a fundamental strategic role. Simply narrating climate change is not enough; it is necessary to introduce "climate education" into programs and promote the active citizenship of young Europeans, inspiring them to become protagonists of change through the adoption of virtuous behaviors to build sustainable, inclusive, fair, and peaceful societies.

During the C2 mobility of the Project held in Italy from March 11th to 15th, 2024, the project partners collaborated on the preparation of the program by identifying the content, activities, strategies, initiatives to include, and methods to integrate and adapt

the program into school curricula and extracurricular activities. This program will provide students with the knowledge, skills, and enthusiasm needed to become environmentally responsible citizens.

Why Teach Climate Change?

"Less you know about something, less value it has for you, and therefore, it is easier to

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destroy," the words of indigenous activist Nemonte Nenquimo, addressed in an open letter to the leaders of the Earth while the Amazon was burning, emphasize the importance of a deep understanding of climate change, which can be conveyed to the new generations primarily through schools. Through climate education, we can increase students' awareness of environmental issues and encourage them to connect their lives to climate change. By addressing these issues with a multidisciplinary approach, which is cross-cutting to all teaching subjects, we will enable students to understand the multifaceted nature of environmental challenges, fostering critical thinking essential to navigate an increasingly complex world.

Who is the "Program to Combat Climate Change" Created For?

The program will be implemented by the three schools that have joined the project: Daugavpils Draudzīgā Aicinājuma Vidusskola in Latvia, Borsa Istanbul Etimesgut Suvari Ortaokulu in Turkey, and Istituto Comprensivo Corrado Melone in Italy. The target audience of the program is teachers engaged in promoting environmental and climate education and students aged 6 to 17. The implementation of the program also aims to indirectly reach the families of students, all school staff, and the local community.

Statement of Commitment to Sustainability and Climate Action

We recognize the need to address climate change and its profound implications for present and future generations. As educational institutions dedicated to promoting critical thinking, innovation, and global citizenship, we are committed to taking proactive actions towards sustainability and climate resilience. We firmly believe that education plays a crucial role in shaping attitudes, behaviors, and actions towards a more sustainable future. Therefore, we

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are committed to integrating climate change education into all aspects of our school institutions, enabling students, staff, and community members to become informed advocates and agents of change.

Program Objectives

1. Teacher Training

- Provide training sessions and workshops for educators to enhance their understanding of climate change and sustainability.
- Equip teachers with resources, tools, and strategies to effectively teach concepts of climate change and promote environmental protection in the classroom.

2. Student Engagement

- Raise awareness among students on climate change and sustainability through lessons, educational campaigns, workshops, seminars, and public events.
- Organize experiential learning activities, school trips, and projects focused on environmental conservation and climate resilience.
- Engage parents, families, and the entire local community in climate action efforts to create a culture of environmental responsibility.

3. Conduct Energy Audit and Improve Energy Efficiency

- Understand the energy consumption of our school and identify areas where energy savings are possible. For example, increase energy efficiency by turning off lights when not needed (identifying one responsible student for this in each class); turn off and unplug electronic devices used in class when lessons end, and reduce the use of heaters when possible.

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4. Be Plastic Free

Eliminate the use of plastic bottles, using glass or steel water bottles instead.

5. Plastic Clean-Up Blitz

- Organize two clean-up blitzes per year to teach young people that they need to act to have a positive impact on our environment.

6. Waste Reduction

- Reduce the waste we produce by encouraging students not to buy disposable products or products with packaging; reuse snack containers and bags and implement an efficient recycling program.
- Motivate students to recycle and reuse their old clothes by organizing fairs where they can exchange old clothes, games, and toys.
- Discourage the purchase of low-cost items online through reflection on the social, environmental, and economic impact of such purchases and the importance of supporting ethical and sustainable companies.

7. Teach Food Education

- Study the link between food choices and climate change, encouraging the consumption of local fruits and vegetables, organic foods, and seasonal foods.
- Learn to read food labels to understand what we are eating.

8. Support Local Agriculture

- Encourage the use of local food to reduce the carbon footprint associated with food transportation and processing.

9. Promote the Use of Sustainable Transportation

- Encourage students to walk or cycle. Organize a day where students come to school by bike or a bike tour, at least once a year.

10. Create Green Spaces at School

- Regularly plant trees and flowers to reduce the carbon footprint of the school and make the environment more pleasant, promoting connection with nature and

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physical, mental, and social well-being.

- Create a green classroom to allow students to spend more time outdoors and take advantage of "green" educational opportunities such as outdoor educational labs, gardening activities, and creation of educational gardens.

11. Measure and Monitor Progress

- Measure and monitor the progress made in the activities described, celebrate successes, and identify areas where improvements can be made.
- Regularly assess student learning outcomes, behavioral changes, and environmental impact to identify the level of ongoing improvement. Organize a day where students come to school by bike or a bike tour, at least once a year.

Conclusion

Through the 'Program to Combat Climate Change', we aim to promote and integrate climate education within the mission and values of the school in order to prepare students to be conscious, responsible, and active citizens capable of addressing the challenges of climate change and contributing to the creation of a sustainable future for all.

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A GUIDE TO SUSTAINABLE LIVING

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TO GREEN
FUTURE

Project Code: 2022-1-LV01-KA210-SCH-000082391
Project Title: « ROAD TO GREEN FUTURE»

How to Stop Climate Change and Do Your Part to Save the Planet

The problem is complex, but thankfully, the goal is simple: reduce our carbon footprint. The starting point begins when you understand your own ecological and carbon footprint and you reach the finish line when every person on the planet has achieved net zero carbon emissions. Sounds impossible, right? It's easier than you might think! All of life releases carbon dioxide into the atmosphere. Plants need it to live. But too much CO2 can have a devastating impact. Our day-to-day activities, from surfing the internet to grabbing a cup of coffee, release greenhouse gases into the air, like carbon dioxide (CO2) from our car's gasoline tank, or methane emissions from the production and transport of coal. If you're living in the new millennium, then you have a carbon footprint, and it's contributing to global warming. The key to saving our planet is working together to reduce our carbon footprint. Global warming is a big problem, but that doesn't mean kids like you can't help! Kids can actually make a really big impact when it comes to climate change. We'll walk you through easy changes you can make to be more energy-efficient, then get into some cool stuff you can do to raise awareness about global warming

1 Use Less Water

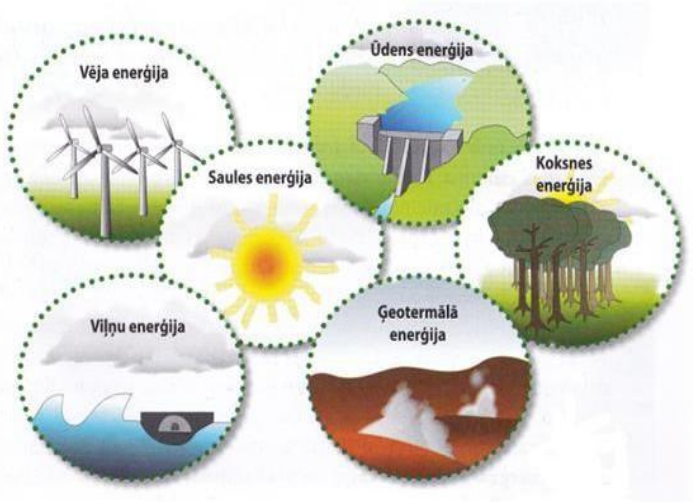
Taking shorter showers is an easy way to make a big impact. If you shorten your usual shower time by just 1 minute, you'll save 3,000 liters of water a year! It helps to turn off the faucet when you're brushing your teeth or washing your hands, too. Be sure to keep the water off until it's time to rinse!

2 Drink tap water instead of bottled water

Plastic water bottles waste tons of energy and create pollution. Plus, most plastic bottles can't be recycled so they just end up in a landfill! If your parents buy bottled water, ask them to stop and explain why plastic bottles are bad. If you like carrying water with you, get a reusable bottle and fill it with tap water instead

3 Turn off lights and unplug devices

Electronics keep using energy when they're plugged in. Devices with remotes, like TVs and gaming consoles, are always using power—even when they're off! To avoid wasting energy, unplug electronics when you aren't using them. Another easy solution: plug your devices into a power strip with an on/off switch and hit the "off" switch when you leave the room.



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4 Close your doors and windows

This saves energy because it prevents hot/cool air from escaping. In the summer and winter, make sure you close all doors behind you and don't leave windows open. Hot and cool air can escape quickly, which means your furnace or air conditioner has to work harder and use more energy

5 Use less paper

Avoid printing out things unless you really need them. It takes a lot of energy and trees to make paper products! Instead of buying new books, borrow some from the library or read e-books. You can also ask your parents to buy recycled notebook and drawing paper for school and artwork. Find fun alternative to gift wrap or re-use gift wrapping paper

6 Walk and bike more often

Cars are one of the biggest sources of greenhouse gas emissions. "Greenhouse gases" are gases that block heat from escaping the planet, which makes the planet too warm. If you're going somewhere close, walk or ride your bike instead of getting your parents to drop you off.[9] If it's too far to walk or bike, take the city bus or train

7 Recycle or reuse items instead of trashing them

Generating less trash saves energy and prevents overflowing landfills. Talk to your parents about taking advantage of your local or city recycling program so paper, plastic, newspaper, glass, and aluminum cans don't end up in landfills. When buying new stuff, look for products with zero waste or eco-friendly packaging

8 Ask your parents to switch to CFL or LED light bulbs

CFL and LED light bulbs are super energy efficient. They use 75% less energy than incandescent bulbs and last about 10 times longer! Your parents can buy them at your local hardware, grocery, and discount stores

9 Eat less meat and dairy

Changing your diet may seem minor, but it helps a lot. The meat and dairy industries create a lot more pollution than people realize. In fact, livestock accounts for about half of the world's greenhouse gas emissions!

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10 Buy from local farmers markets and businesses

Shopping locally is energy-efficient and supports your community. Transporting fresh produce to your local grocery store releases a lot of pollution into the air! Sticking with locally-grown and in-season produce helps prevent that. Asking your parents to shop at local farmers markets for produce is another great idea.

11 Talk to friends and family about climate change

Spread the word so everyone can do their part to help the planet. It's a bit scary to think about sometimes, but global warming is getting worse, so we have to take action now! Sharing information with your friends, family, and classmates can help a lot

12 Share information about global warming on social media

Social media makes it easy for you to reach a lot of people at once! Share articles, links, and infographics with your friends and followers to educate them about climate change. Encourage reposting so you can reach as many people as possible. You can also use social media to connect with other kids who are interested in helping the environment

13 Start a recycling program at your school

Ask your administrators how they're handling waste operations. If your school doesn't have a recycling program in place, talk to other concerned kids and teachers about helping you start one. Then, hang posters around your school to educate others and support the program. You can even form a Green Team with other students to help you spread the word!

14 Act against forest loss

As far as possible, avoid anything that may be a fire hazard. If you want to buy wood, choose wood with a certification or seal showing its sustainable origin. Plant a tree! Throughout its life, it can absorb up to a ton of CO_2

15 Implement the 3 sustainability "Rs"

Put the 3 R's of sustainability into practice
Reduce: consume less, more efficiently.
Reuse: take advantage of second-hand markets, to give new life to items that you don't use anymore or find something that someone else has gotten rid of that you need. You'll be saving money and reducing your consumption.
Recycle: packaging, waste from electronics, etc

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ECO EVENTS

LET'S MAKE COMPOST (ORGANIC FERTILIZER)

PURPOSE:
To evaluate organic waste and observe the formation of fertilizer.
TOOLS
5 litre used bottle or cardboard box
waste materials for compost
Green materials:fruit and vegetable peels, tea and coffee waste,
freshly pruned herbs, egg shells.
Brown materials: dry leaves, kraft paper, sawdust, wood chips, cardboard pieces,
soil, water, spray bottle

LEARNING-TEACHING PROCESS
1. Show students some soil that you have put in a large container and let them touch it.
Support their observation process by asking the following questions.
• What color is the soil?
• What does it smell like?
• Is it soft or hard?
• Is it hot or cold?
• Is it moist or dry?
2. Draw attention to a different feature of the soil with the question "Do you think this is healthy soil?"

Explain compost and soil and follow the instructions together.

ONE DAY WITHOUT WASTE

PURPOSE
To raise awareness about the amount of waste we produce in our daily lives.
LEARNING-TEACHING PROCESS
Examine the waste in your classroom trash bin with your students. Evaluate the most commonly thrown waste together.
"Let's try to live without producing any waste for a day. Packaged foods, plastic bottles, canned drinks, plastic bags, plastic straws, food that we throw away because it's too much, everything... Let's collect the waste that we produce every day without realizing it in a box for a day. Let's see how much it will be. Let's call today a zero waste day..."
Chat with students about the effects of waste on nature that we are not aware of in our daily lives. Ask them which products are environmentally friendly and which materials they use most in their daily lives.
Evaluate the waste generated after zero waste day together. Discuss what can be done to avoid generating this waste, and what can be used instead. You can exhibit your waste generated in your school.

ZERO WASTE

PURPOSE
To create awareness about consumption habits and waste management (5D Steps: Think, Consume Less,

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Evaluate, Change, Transform).

LEARNING-TEACHING PROCESS

Let's take a T-shirt and examine its journey before it reaches us. Let's show students a short film called "The

Journey of the T-shirt."
Then, divide the students into groups and tell each group
one of the products below. You can add different products. Ask the groups to develop creative ideas by thinking of the steps of "Recycle, Reuse" or "Change, Use for Different Purposes" and to save them from becoming
garbage.

- Jar
- T-shirt
- Trousers
- Can
- Packaging box
- Glass bottle
- A plastic detergent box
- A notebook with empty pages

The groups that have completed their work can share the ideas they found to recycle waste with other groups and can exhibit them by designing a poster.

HOME WORLD PASSPORT

Starting from our closest environment and our closest
relationships,
* I promise to protect and develop natural life and natural resources,
* I promise to work for a sustainable life,
* I promise to pass on our universal knowledge that we will develop together to future generations,
* I promise to take care to act responsibly in order to live happily in our home, Earth.

NAME SURNAME SIGNATURE

Students are asked to prepare the following lists and complete their World passports.
1- "Causes of climate change" list
2- "I will do" list

‘‘Animals Becoming Extinct Due to Climate Change’’ News

“ Hello. We, the cheetahs, are not extinct yet, but some creatures can become extinct. Today, I want to share some news with you. In a report prepared by the Australian government in 2019, it was declared that the mosaic-tailed rats are extinct.
I wanted to share this news with you so that other creatures do not become extinct in the world. Let me tell you a little about mosaic-tailed rats.
Mosaic-tailed rats are rodents. They would hide during the day and go out at night. Their bodies were covered

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in reddish-brown fur. Although they had tiny ears, they had very long tails. Their favorite food was purslane. These cute creatures lived only in Australia. Unfortunately,
with the rise in ocean levels, their natural habitat was destroyed, and in this case, the mosaic-tailed rats became extinct. This is actually an important situation for our world, because the mosaic-tailed rat was recorded as the first mammal to become extinct due to the climate crisis caused by human activities. Did you know? The whole world published this news. It was talked about everywhere. They wanted to draw attention to the effects of climate change on living things.
I also know that by sharing this news, you too can do something about it."

Students are asked to conduct research, prepare new news and present them.

DİSCUSSİON CARDS

CARD 1:
Is someone right or wrong when they say, "I don't live near the sea, so sea level rise won't affect me."
Can you explain your opinion and the reasoning behind it?
CARD 2:
Is someone right or wrong when they say, "Saving electricity and water reduces global warming?"
Can you explain your opinion and the reasoning behind it?
CARD 3:
"We are too late to stop the warming of the world." Is someone right or wrong?
Can you explain your opinion and the reasoning?
CARD 4:
"Traveling by car can reduce global warming." Is someone right or wrong?
Can you explain your opinion and the reason?
CARD 5:
Is someone who says, "They are very opposed to cutting down trees, but we also need to meet our needs such as pens and paper." right or wrong?
Can you explain your opinion and the reasoning?
CARD 6:
"The world will not run out of water. Global warming will not affect water resources." Is someone right or wrong?
Can you explain your opinion and the reasoning?
CARD 7:
Is someone right or wrong when they say, "People can't do much to stop global warming?"
Can you explain your opinion and why?

GREENHOUSE EFFECT EXPERIMENT

Purpose of the Experiment: To understand that some gases in the atmosphere wrap around the Earth like a blanket and create a greenhouse effect, warming the Earth.

Materials: A jar, two thermometers, a plastic bag, rope
How to Perform the Experiment:
• A thermometer is placed in a jar.
• The jar is tightly covered with a plastic bag and tied.
• The other thermometer is left open.

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• The jar and thermometer are placed outside in a place where they can receive sunlight.
Observation:
• The temperature in the jar is noted every five minutes.
• The temperature on the thermometer left open is also noted.
Evaluation:
• Which one had the highest temperature?
Result:
The temperature will be higher because the jar with a lid creates a greenhouse effect.
The gases in the atmosphere also warm our Earth.

CHOOSE YOUR SIDE WITH SLOGANS

Write original slogans and sayings in the fields below. Then choose the best slogans by group discussion.
1. Environment-centered, environmental perspective
2. Human-centered, environmental perspective

Let's do design work on the selected slogans.

THERE ARE OTHER CREATURES APART FROM US

Purpose: To realize that the world does not belong only to us, but also to other living beings that have the right to live.
Method and Technique: Drama, animation
Everyone should think of another living being in nature for 1-2 minutes. Think about the living space of this being, its interaction with other species, and what it needs to continue its life. Try to imitate the appearance of that being. (For example, it can open its arms like a tree.)
Questions are asked.
*In the meantime, they are asked what they feel (anxiety, happiness, worry, emptiness).
*Who are you, where do you live? What is around you?
*What do you need to live? Do you have a purpose in life?
What is your biggest fear?
*What kind of environment would you like to live in?
Questions can be increased.

VOCABULARY

One of the things students struggle with is using new scientific vocabulary correctly and in the appropriate context. When starting the activity, introduce them to new concepts and have them create visual vocabulary boards that define and illustrate each word. Pairing the visuals with the concept definition will help students understand abstract concepts.
Suggested Global Warming Vocabulary:
Atmosphere
biodiversity
Carbon footprint
Paris Climate agreement
Climate change
Ecosystem
Gas emissions

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Fossil fuel
Greenhouse gas effect
Renewable energy
Ozone layer
Photosynthesis
Radiation
IPCC (Intergovernmental Panel on Climate Change)

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THE RESULT OF THE 1st TEST

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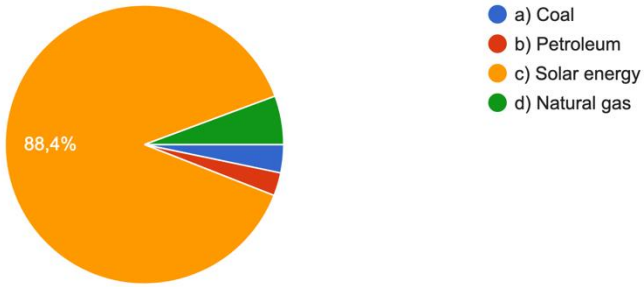
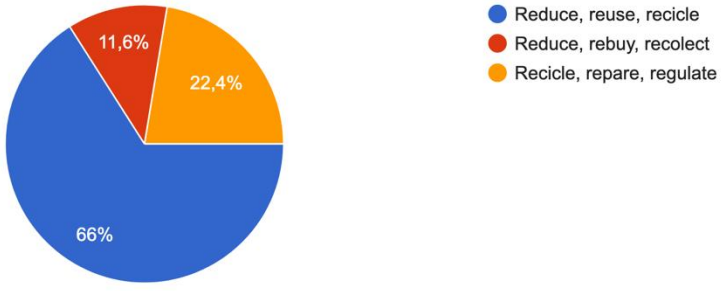
The result of the 1st test that contain 10 climate change questions to measure the intial skills of the students in about green area , it has been asnwered by 388 students in all the partner's countries. **(Latvia, Turkey, Italy, Spain)**
We represent each question by a graphic that shows us the initial level of them:

1. Which of the following sources of energy is renewable?
336 respuestas



2. What 3R means?
335 respuestas



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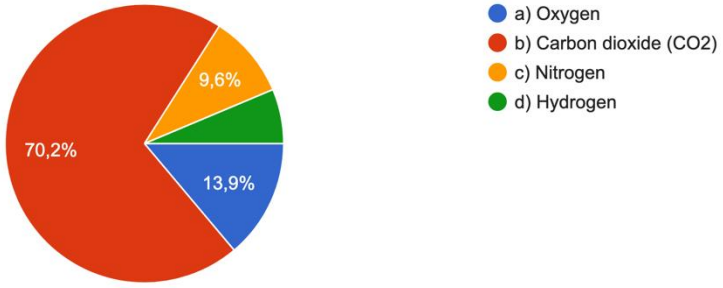
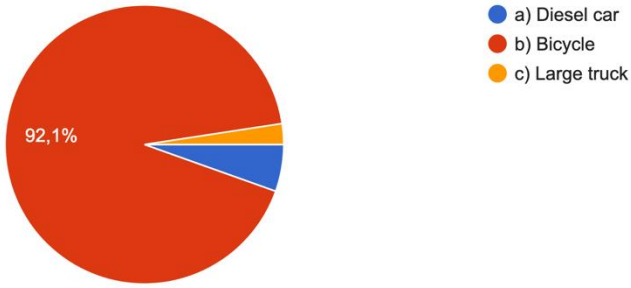
3. Which of the following gases is a significant contributor to the greenhouse effect?

332 respuestas



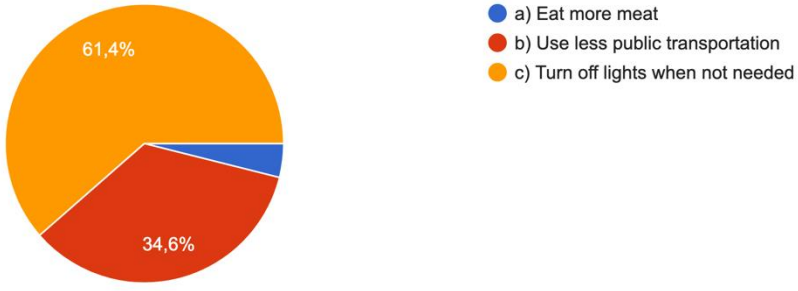
4. Which type of vehicle is more environmentally friendly?

331 respuestas



5. What can you do to reduce your carbon footprint?

332 respuestas



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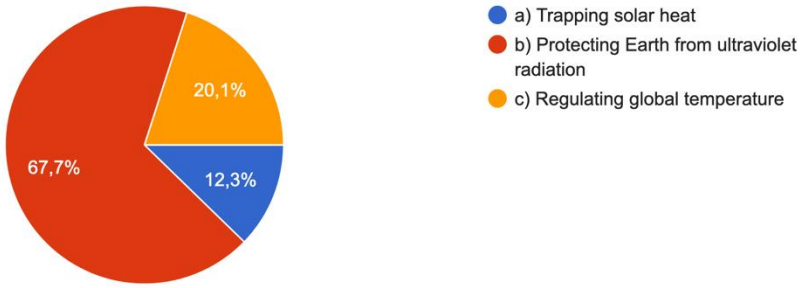
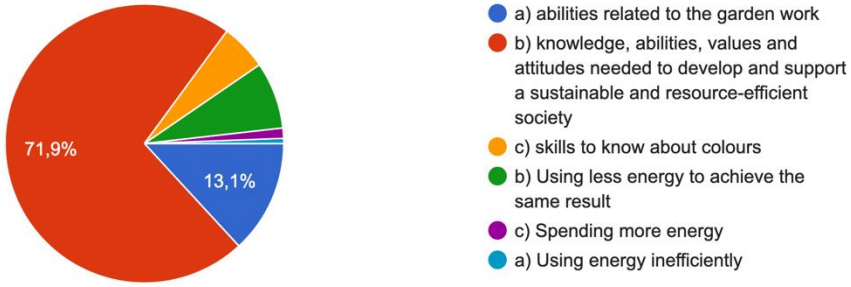
6. What is the purpose of the ozone layer in the atmosphere?

334 respuestas



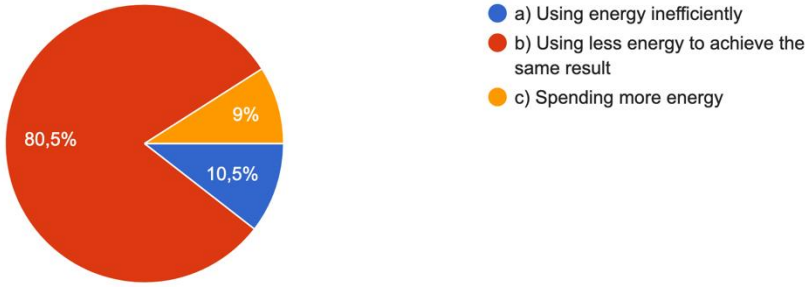
7. What are the green skills?

335 respuestas



8. What does "energy efficiency" mean?

333 respuestas



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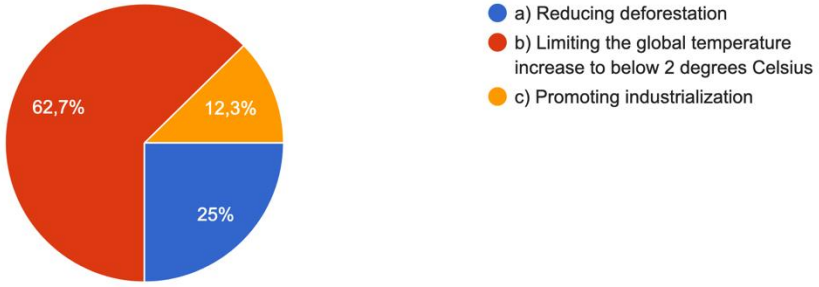
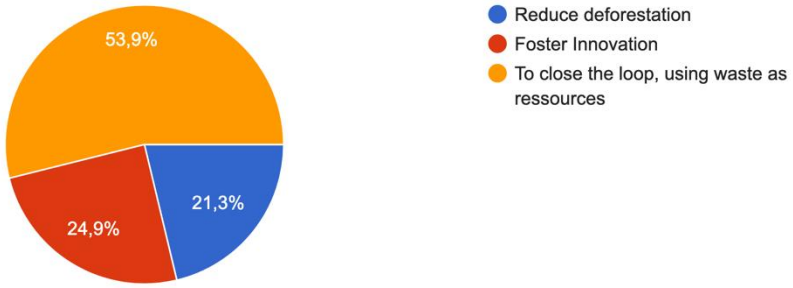
9. What is the primary goal of the Paris Agreement?

332 respuestas



10. Which is the main circular economy goal?

334 respuestas



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