

# LESSON PLANS

**FOR ELECTIVE COURSE OF  
»BIOETHICS« IN HIGH SCHOOLS**

# BIOSEM

**Bioethics and Sustainable Environmental Management in Schools  
2022-1-SI01-KA220- SCH-000086423**





This material was developed by a consortium of 8 partners of the project Bioethics and Sustainable Environmental Management in Schools (BIOSEM). The project was financed under the reference number 2022-1-SI01-KA220-SCH-000086423 as a Cooperation partnerships for school education within the Erasmus+ programme.

Project was funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

For all further information about the project you can consult the website:

<https://biosem.eu/>





***This document is a result of Project Activity 3 of the project Erasmus+ project No. 2022-1-SI01-KA220- SCH-000086423 "BIOETHICS AND SUSTAINABLE ENVIRONMENTAL MANAGEMENT AT SCHOOLS" (BIOSEM)***

The co-leaders of the Project Activity 3 are Şŭkrŭ Şankaya Anadolu Lisesi, de Turquía, and Daugavpils Zinātņu vidusskola, Latvia.

The editors of the Lesson plan: Ayla Tohumat, Helena Skripnicenko, Roman Globokar.

The authors of the materials are:

- Ayla Tohumat (Şŭkrŭ Şankaya Anadolu Lisesi, Turkey)
- Helena Skripnicenko, Irena Rozko, Olga Vasiljeva (Daugavpils Zinātņu vidusskola, Latvia)
- Roman Globokar, Gabriel Kavčič, Urška Mali Kovačič, Marko Weilguny (University of Ljubljana, Faculty of Theology, Slovenia).
- Kire Sharlamanov, Bejtula Demiri, Mevla Jahya (International Balkan University Skopje, North Macedonia)
- Oya Güler, Tuba Arman (Osmangazi District Directorate of National Education, Turkey)
- Linda Cotugno, Maria Grazia Grasso (Istituto di Istruzione superiore Leonardo, Italy)
- Silvia González Calera (Asociación cultural y medioambiental Permacultura Cantabria, Spain)
- Sareh Sarmadi, Faraneh Shirazi (Urban Research and Education UG, Germany)

# INTRODUCTION

Dear teacher/student,

Welcome to our comprehensive compilation of lesson plans on bioethics created within Erasmus+ project **“Bioethics and Sustainable Environmental Management at schools” (BIOSEM)**. This set of educational resources has been thoughtfully developed to provide educators with a diverse array of materials designed to engage students in the critical and dynamic field of bioethics.

This compilation is the product of all project partners under the leadership of Şükrü Şankaya Anadolu Lisesi, Bursa, Turkey and Daugavpils Zinātņu vidusskola, Daugavpils, Latvia.

The lesson plans in this collection are designed to be versatile and adaptable, suitable for a range of educational settings in high school. They are designed on scenario based methods and therefore are relevant to any teenage student.

The objectives of these lesson plans are multifaceted:

- Developing Critical Thinking: Enhancing the ability to reason about real-world events and establish cause-effect relationships.
- Facilitating Social Learning: Promoting opportunities to learn in a social environment.
- Environmental Awareness: Recognizing ecological footprints and formulating strategies to reduce them.
- Sustainability Education: Understanding sustainability as a consequence of human activities and learning to evaluate and adjust behaviors accordingly.

The compilation offers 15 lesson plans on 7 Topics of bioethics, including:

- **Global justice**
- **Climate Change**
- **Human Development**
- **Ecosystem Health and Water Resources**
- **Science and Technology**
- **Animal Living**
- **Minimalist Living**



Each lesson plan is a ready-to-use resource, including detailed instructions, discussion questions, case studies, links to video resources, and activities designed to foster an engaging and informative learning experience. In each lesson plan there are additional materials offered for further development of the topic. The materials present a real practical value as they all have been pilot tested in school during the implementation of the elective course on bioethics.

These materials offer practical value and flexibility. Educators can adapt and integrate them into various Backgrounds, such as CLIL lessons, science classes, social studies, further research, or project work. Whether used as a complete course on bioethics or as supplementary content, these lesson plans offer a valuable framework for building unique educational experiences.

We hope that this compilation will serve as an inspiring resource for educators, sparking thoughtful discussions and fostering a deeper understanding of the ethical dimensions of human and nature co-existence



*Thank you for choosing our bioethics lesson plans!*

BIOSEM Project Team



# LESSON PLANS

# BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



## UNIT 0

# INTRODUCTORY LESSON TO THE BIOETHICS COURSE TOPIC 0: BIOETHICS COURSE



## TOPIC

# BIOETHICS COURSE

## LEARNING OUTCOMES / OBJECTIVES

- Define bioethics and understand its significance.
- To clarify students' previous knowledge, understanding and awareness of the topic.
- Identify and discuss ethical issues related to medical and biological advancements.
- Express their opinions and engage in discussions about bioethical topics.

## DURATION

**2 class hours (approximately 80 min.)**

## MATERIALS

- Whiteboard and markers.
- Handouts with key vocabulary and discussion questions.
- Cards with ethical dilemmas.

## BACKGROUND (WARM-UP / MOTIVATION) 10 MINUTES

Begin the lesson by asking students if they are familiar with the term "BIOETHICS" Write the term on the board and invite a few students to share their thoughts.

Provide students with a list of key vocabulary related to bioethics, such as "ethics", "morality", "genetic engineering", "cloning", "stem cell research", "end-of-life care" etc.

What is a "Dilemma"? What is an "Ethical dilemma". Invite students to share a situation where they faced a dilemma. How did they feel? What choice did they make? What influenced their the final decision?

<https://www.youtube.com/watch?v=A1x7FqXRy9c>

Discuss the meanings of these terms and encourage students to ask questions about any unfamiliar words.

Talk about the necessity and difficulty of discussing bioethical dilemmas.

## PRESENTATION 20 MIN.

The teacher presents the 7 main divisions of the course and asks students to speculate what subtopics they can cover.

Watch the video:

<https://www.youtube.com/watch?v=cY-7gwnWESk>

## IMPLEMENTATION/ PRACTICE 40 MIN.

Scenario-based Case:

- 1. Scenario:** You find a wallet in the school hallway with money and an ID inside. The ID belongs to a student you know, but you're not close friends. What do you do?
- 2. Scenario:** Your friend has confided in you that they cheated on an important test and got away with it. They're feeling guilty and anxious. What do you do?
- 3. Scenario:** You work at a pharmaceutical company that has developed a potentially life-saving drug. However, due to production costs, the drug will be very expensive and inaccessible to many people. What should the company do?
- 4. Scenario:** You are a doctor with two patients who both need an organ transplant to survive. One is a young child and the other is an elderly person. There is only one organ available. Whom do you choose to give the organ to?
- 5. Scenario:** You witness a classmate bullying another student online. If you report it, you might damage your relationship with the bully and potentially face backlash. What action do you take?
- 6. Scenario:** During a group project, one of your team members isn't contributing and is riding on everyone else's efforts. Your teacher has said that the whole group will be graded together. What action do you take?
- 7. Scenario:** You see someone drop money on the ground, but they don't notice. You're pretty sure it's theirs. What action do you take?

### Suggested Activity (10 min):

Play an ethical dilemma game as a fun and engaging way to explore complex moral situations.

The teacher splits students in groups and provides a card reflecting a mock ethical situation which requires making a decision. Let the students discuss it in their group and then share the group decision supplementing it with arguments.





## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- Lead a discussion about the challenges students encountered during the game and what they learned about considering various perspectives.
- Ask students to reflect on the importance of critical thinking and empathy in ethical decision-making.

## EXTENSION ACTIVITIES

### Listening task:

- Listen, make notes and fill the gaps with the missing information:

1. The term "Bioethics" is of .....origin.
2. The goal of Ethics is to study the ..... and ..... of human actions.
3. However, the main fields of Bioethics are .....and .....
4. Examples of bioethical issues include.....
5. Stewardship follows the ethical principles of .....
6. Totality focuses on caring about .....
7. The principle of solidarity supports the idea of .....
8. Respect for a person principle implies that you never treat a person as .....
9. The opposite principle of non-maleficence is .....
10. The act of giving a person what he/she deserves is called.....
11. Autonomy implies the right of every person .....

- Answers:

1. Greek
2. rightness and wrongness
3. medicine and healthcare
4. euthanasia, abortion, animal testing, human cloning, genetic engineering, organ donation etc,
5. Christianity
6. human body (whole body)
7. being one with another
8. a means
9. beneficence
10. justice
11. to control their lives



# LESSON PLANS

# BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



## UNIT 1

# GLOBAL JUSTICE

## TOPIC 1.1: GLOBALIZATION & FAIR TRADE

## TOPIC

# GLOBALIZATION & FAIR TRADE

Globalization is a set of multidimensional processes that create, deepen, expand, and intensify interdependence and exchange at the world (global) level, encouraging at the same time the awareness of the connection of global and local processes. Globalization went hand in hand with the introduction of recent technologies such as the Internet, mobile phones, social media and new institutions such as the World Trade Organization, multilateral agreements for trade in goods and services and protection of intellectual property.

We need to recognize that people, places, economies and environments are interconnected and mutually dependent. We must be aware of the connections between local and global activities. Global justice is needed to prevent future conflicts among nations and damage to the natural environment. The gap between rich and poor countries is widening, raising the prospect of an unstable future. (Source: Competency Framework BIOSEM)

## LEARNING OUTCOMES / OBJECTIVES

- To have knowledge of the relationship between globalization and bioethics.
- To be able to identify bioethical elements of globalization in their personal lives.
- To evaluate the actions and initiatives related to globalization and global justice.
- To develop critical thinking regarding the process of globalization.
- To value the benefits of globalization and use its advantages.
- To cope with specific situations in which dilemmas related to globalization arise.

## DURATION

**2 class hours (approximately 80 min.)**

## MATERIALS

- non-transparent bag
- a banana
- role cards



## BACKGROUND (WARM-UP / MOTIVATION) 15 MINUTES

Icebreaker/Warm-up Activity:

### 1. WHAT'S IN THE BAG?

This is an icebreaker activity to introduce the subject. It can embrace the concept of disruptive pedagogy to a greater or a lesser extent. The point of the exercise is to set the stage and get the students to adopt an active role.

- A bushel of bananas is placed in a non-see-through bag. Either volunteers or representatives of groups can participate in the initial activity. It can be the first stage of a competition or a free-for-all type of participation. There are indeed very many implementations of the guessing game. Below is a concept that tries to engage the largest group possible and be as disruptive to the normal pedagogical process as possible to prepare the students for active participation in the lesson.
- The teacher divides the class into groups using any of the preferred group forming techniques or just bundles students according to the seating. They make a short (e.g.: three) round guessing session where there will be volunteers from all the groups active in each of the rounds. In the first-round volunteers each reach into the bag and place a single finger on the object inside the bag. In the second round they can use two fingers on each hand and press on the bag from the sides. In the third round they can weigh the object from below the bag by using the palm of their hand.
- Instead of just trying to guess what the object is and to engage the non-volunteers, the teacher can task the volunteers to try and guess the colour of the object in the first round, to guess the sound that the object makes in the second round and use the best emoji to describe it in the third round.
- The teacher can try and summarize this non-linear thinking by giving “points” for accuracy to each of the answers given by the volunteers to guide the guessing that can now take place within the preassigned groups.

This activity concludes by arriving at the correct guess of what is inside the bag. After that the bananas can be distributed to the winning team or all students.

A bit of mindfulness:

## 2. BANANA MEMORIES (UN POCO DE MINDFULNESS)

This is an ice-breaker activity to introduce the Topic. It can cover the concept of disruptive pedagogy to a greater or lesser extent. The aim of the exercise is to prepare the ground and get students to take an active role.

- Departing from the freshly discovered bananas, the teacher invites the students to share some memories of the bananas they have. This is a mindfulness exercise that is intended to activate the right brain hemisphere of the students and facilitate retention of information that is to follow. Obviously, the implementation of the exercise depends heavily on the teacher's willingness to venture into this sort of work and the general atmosphere in the class. If the teacher can dedicate some time for a serene (eyes-closed) reflection and a respectful sharing of memories that has much more of an effect than a bullet round association without previous reflection, though this might be more appropriate in some instances. It could be good for rapport establishing that the teacher also shares a banana story.
- After the initial period intended to open or broaden the perception of the students this activity can conclude with getting to the core of the issue. Why do we have bananas in front of the class? Students can try and get to the answer and the teacher can really guide this discussion.

## PRESENTATION 15 MIN.

This is the core of the presentation and the main part of the lesson where students will receive some ex-cathedra instruction.

- A brief PPT (attached) is prepared that the teacher can use to give the students some information. The point of this presentation is to present the concepts of 'trade' and 'globalization' and what the rise of globalization has done to the concept of trade. It is advisable to try and engage the students to share some concrete insights into how globalization has impacted their lives. They can even try and name some examples where they have heard of exploitation of cheap labor forces or land degradation in third-world countries.
- The teacher can ask students to work in groups to discuss "**pros and cons**" of fairtrade and regular trade.

PROS	CONS



## IMPLEMENTATION/ PRACTICE 40 MIN.

### BANANA SPLIT (ACTIVITY TO PRESENT STAKEHOLDERS):

- Development) which aims to unpeel the story of bananas from farm to fruit bowl, and see what Fairtrade and justice mean along the way.
- Through role play, pupils will bargain over how the cost of a banana is split down the supply chain and discuss the fairness of this.
- In the second round, they will take roles to argue whether to switch to Fairtrade.

### Scenario-based Case:

Daniel got some money from his mother to go and do some grocery shopping. Along with the money, he also got a shopping list. Daniel's mother knows how much the items on the list cost, so Daniel has approximately the right amount for everything on the list. Once he gets to the store, he sees a homeless person that asks him if he can spare a Euro or some change. He says that he will see if he has any money left after he buys everything they need at home. He goes into the store and finishes most of the shopping. One item left on the list are bananas. There are two assorted brands. One brand is marked Fairtrade and is more expensive. He has a bit of extra money. He can decide to buy the more expensive bananas, he might give some extra money to the homeless person in front of the store, he might buy a little gift for his younger sister that just had her first music school recital or he might just save the money for himself. But Daniel has heard something about fairtrade in school and how it supports global justice and now is facing a dilemma:

*Should Daniel buy the more expensive fairtrade bananas or the regular, cheaper ones?*

- The teacher organizes a role-play activity with the volunteer students to play out the situation: one student can play the role of Daniel, other students play his mother, his sister, the homeless man and some other roles like cashier, another shopper, someone who confronts the homeless man etc can be added up to the number of volunteers.
- After the role-play, the observing students can offer their remarks, what they noticed and then the students who played the roles can explain how they felt defending their positions.



## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- How often do I (for example) eat chocolate? Can I live without it? What would happen if I needed to survive with only ingredients produced by the local community, what would I eat? ...
- Am I willing to pay a bit more for fair trade bananas? What change that brings to the world?
- Why is banana so popular; can I see the impact of influencers on my eating habits?
- What difference does it make to choose banana or locally grown fruit for a snack?

## EXTENSION ACTIVITIES

### Visit to a fair-trade store

**Shopping list:** what do I consume in a week, where do ingredients come from, what can be seen as luxury, what are local products, how has diet nowadays changed compared to the diet of the previous generation...

## ADDITIONAL RESOURCES & USEFUL LINKS

- <https://education.nationalgeographic.org/resource/globalization/>
- <https://www.fairtrade.net/about/what-is-fairtrade>
- <https://youtu.be/h8vTt9Y1mkQ> (la historia del plátano)
- <https://humwp.ucsc.edu/cwh/bananas/Site/Early%20History%20of%20the%20Banana.html>
- <https://oec.world/en/profile/hs/bananas>
- <https://assets.ctfassets.net>
- <https://www.helgilibrary.com/indicators/banana-consumption-per-capita/>
- <https://cafod.org.uk/> (más recursos de diferentes actividades)



# LESSON PLANS

# BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



## UNIT 1

# GLOBAL JUSTICE

## TOPIC 1.2: MEDICAL TOURISM



## TOPIC

# MEDICAL TOURISM

Medical tourism is a trend that is gaining momentum with globalization. It is two-way. On the one hand, when patients from developed countries go to developing countries to receive medical treatment that is unavailable to them in their country of residence, for financial or legal reasons. Several ethical dilemmas arise here: the unequal availability of medical treatment in the most developed countries, due to which a part of people have to seek a solution to their medical problems in doing the intervention outside the country. Medical tourism has been known to involve the transplantation of organs from illegal donors. The surgical interventions themselves can take place in unlicensed hospitals, with equipment whose quality is questionable, etc. Medical tourism can also go in the opposite direction. The wealthier strata of the population in developing countries travel to developed countries, with more advanced standards in medicine, for more serious medical interventions. The dilemma arises, whether instead of going abroad for treatment, people who belong to the elite of a society should pay higher contributions for health insurance and correct the image of the health system in their own country.

## LEARNING OUTCOMES / OBJECTIVES

- To be aware of the significance of globalization and global justice for health.
- To be aware of the advantages and disadvantages of globalization.
- To understand how different levels of development lead to severe inequalities between nations, countries and cultures.
- To develop critical thinking regarding the process of globalization.
- To be able to apply the bioethical principles in connection with the process of globalization.
- To cope with specific situations in which dilemmas related to globalization arise.

## DURATION

**22 class hours (approximately 80 min.)**

## MATERIALS

- Images for warm-up activity
- Role play description cards



## BACKGROUND (WARM-UP / MOTIVATION) 10 MINUTES

The teacher displays a number of previously prepared images one by one:

an apple, the sun, a couch potato, a plane, a passport, etc. and asks students to describe their emotions, experiences, or any kind of associations with them. (Although the images seem unrelated, the purpose of this activity is to guide students to relate them first to the topic of "health" and then "medical tourism" with some questions.)

## PRESENTATION 20 MIN.

### BASIC CONCEPTS: HEALTH AND TOURISM

Students need to understand the basic concepts, enabling them to go beyond the superficial sound of the word "health" and merely the positive sound of the word "tourism".

- The teacher divides the class into two main groups: one group works on the concept "health" and the other "tourism". Group 1 discusses and comes up with a definition of "health" and some examples of how to take care of one's health. Group 2 does the same task for "tourism" - its definition, types and why people travel for medical purposes.
- A few volunteer students from group 1 explain their ideas. To have a complete definition of "health", teacher shares WHO's definition with students:

**Health:** *Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition.*

- To address the aspects of mental and social well-being, students are given the following activities one by one to consider the potential effects of them on their overall well-being.

1. Writing down three things you're looking forward to this week.
2. Taking a break from technology.
3. Doing a relaxing activity.
4. Writing down three things you love about some person you like.
5. Doing a 5-minute mindfulness exercise.
6. Calling or texting a friend and telling them how much you appreciate them.
7. Thinking of something you should be grateful for.
8. Doing a random act of kindness for someone.
9. Doing some push-ups ... and so on.



The presented examples serve to enhance students' understanding of the comprehensive nature of health, which covers not only physical well-being, but also mental and social well-being; thus, students will have the sense that a state of complete health involves addressing all these aspects.

- A few volunteer students from group 2 explain their ideas. To have a complete definition of "tourism", teacher shares UNWTO's definition with students:

**Tourism:** *Tourism is a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes.* (<https://www.unwto.org/glossary-tourism-terms>)

- Teacher starts an open dialogue about the types of tourism or why people travel. There are many different types of tourism, each with its own characteristics: for example, "adventure", "cultural", "culinary", "heritage", "religious" tourism and their characteristics. While discussing the types of tourism, it is important to address the financial capability, as understanding inequalities is essential to understanding medical tourism.

**Medical tourism is therefore "health tourism", which is positive, but has very serious global causes and consequences.**

- Teacher asks students to think about the benefits and risks of medical tourism in their groups to share with class afterwards. The teacher might also ask them (if they can) to address some ethical questions/dilemmas related to the topic.

» Some examples for benefits and risks of medical tourism, and ethical questions.

- It can provide access to medical treatments that are not available in one's home country.
- Cost savings.
- Reduced wait times for procedures.
- The quality of medical care can vary widely between countries and facilities, which can put patients at risk.
- There can be risk to patient safety, particularly if the facility or medical staff are not properly accredited or regulated.
- Travel-related risks such as infections, transportation mishaps, and language barriers can occur.

? The issue of access to medical care being based on a patient's ability to pay, rather than on medical need.

? Low-income countries may not have access to the same quality of medical care as those from wealthier countries.

? Patients from low-income countries may be subjected to exploitation or substandard medical care.

## IMPLEMENTATION/ PRACTICE 20 MIN.

### Scenario-based Case:

Your close friend, Sarah, has been courageously battling cancer for several years. Despite numerous treatments locally, her condition has worsened, and her doctors are now recommending a cutting-edge cancer treatment only available in a developing country. The treatment shows promising results but comes with significant challenges. As Sarah's close friend, you're in a tough spot. You want the best possible outcome for Sarah's health, and the foreign treatment offers hope for a potential cure at a lower cost. However, you're also concerned about the safety, quality of care, living conditions, the impact on her education, and the emotional toll it may take on her.

Your friend looks to you for support and advice on whether to pursue this risky medical tourism option or continue with conventional treatments at home. How can you provide the support and guidance she needs to make this life-changing decision, all while keeping her best interests at heart and maintaining a strong friendship?

## REFLECTION / ASSESSMENT 15 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- Is it ok that the access to medical care is being based on a patient's ability to pay, rather than on medical need?
- Is it fair that low-income countries may not have access to the same quality of medical care as those from wealthier countries?
- What about the patients from low-income countries that may be subjected to exploitation or substandard medical care?

## EXTENSION ACTIVITIES 15 MINUTES

### DISCUSSION (ROLE PLAY)

Students are asked to take on different roles. They should act out the people who want to have the procedure; the staff who will carry it out; a meeting with the police at home who are checking the legality of a procedure (for example, in the case of surrogacy); a conversation in the family when someone decides to have a procedure abroad, a conversation with a person who, because of her poverty, is going to sell her own organs to a rich foreigner, and so on.



Many people travel to other less developed countries for affordable dental treatments, such as implants, root canals, and crowns. Cosmetic surgery procedures like facelifts, breast augmentation, and liposuction are also popular among medical tourists. Some people travel abroad for specialized cancer treatments that are not available in their home country. Countries like Germany, Japan, and the United States are known for offering cutting-edge cancer treatments. Patients may travel abroad for organ transplants, particularly if they are unable to find a donor in their home country. Fertility treatments like in vitro fertilization (IVF) and surrogacy.



# LESSON PLANS

# BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



## UNIT 2

# CLIMATE CHANGES

## TOPIC 2.1: THINKING OF CLIMATE CHANGE WITH BIOETHICS AND ITS SUB-PRINCIPLES



## TOPIC

# THINKING OF CLIMATE CHANGE WITH BIOETHICS AND ITS SUB-PRINCIPLES

The effects of climate change are one of the most difficult problems the world is currently facing. In this course, we show how ethical analysis can help us understand both the character of the climate problem and the limitations posed by potential solutions (Vanderheiden 2008, Gardiner et al. 2010, Arnold 2011). In doing so, we will focus our attention on the ways in which climate change poses a threat to core values and how the actions taken will raise significant concerns about fairness and accountability. The threat posed by climate change has been compared to the "ideal moral storm" because it brings together three interconnected fundamental issues of moral action. (Gardiner 2011a).

**1-** The fact that climate change is a problem affecting people all over the world is the root of the first problem. Greenhouse gas emissions, once released into the atmosphere, have the potential to affect climate everywhere on the planet, regardless of where they originate. (IPCC 2007). It is often said that this will lead to a prisoner's dilemma, or a tragedy of the commons played out between nation-states: While all countries collectively choose to limit global emissions to reduce the risk of serious or catastrophic impacts, each acts individually. (Helm 2008, Gardiner 2011a)

**2-** The second issue is that current emissions have important consequences for future generations. Emissions of carbon dioxide, the most important greenhouse gas, typically remain in the atmosphere for a long time and have detrimental effects on the climate for centuries or even millennia. (IPCC 2007). This does not seem fair, especially given that the negative impacts on the future are serious and cumulative.

**3-** The third problem with ethical action is that our theoretical tools are not fully developed in many related areas such as international justice, intergenerational ethics, scientific uncertainty, and the appropriate relationship between humans and the rest of nature. (e.g. Jamieson, 1992). For example, climate change raises questions of (ethical) value, such as whether we have obligations to protect animals, unique places, or nature, and what form, if any, such obligations take. Another example is when climate change raises questions about the (legal) value of historical artifacts such as fossil fuels and whether they exist.



## LEARNING OUTCOMES / OBJECTIVES

- To understand the basic aspects of climate change
- To understand specific situations in which problems related to climate change arise
- To know the connection between bioethical principles and climate change
- To be able to give an example of the connection between bioethical principles and climate change
- To know some possible actions to address climate change
- To demonstrate knowledge of the basic aspects of climate change

## DURATION

**2 class hours (approximately 80 min.)**

## BACKGROUND (WARM-UP / MOTIVATION) 10 MINUTES

### Warm-up Activity (guessing game)

- Teacher plays a guessing game with the class. Telling that s/he has an animal in his/her mind, teacher gives the following prompts one by one for students to find out the word "polar bear":

*carnivore - fur - sharp claws - mammal - ocean - Arctic*

- Once students find the word "polar bear", Teacher can show a picture of it and ask students some extra questions to start an open dialogue about them:

Where / How long do they live? 25-30

What is special about their fur?

Why are they endangered? etc.

- Emotional connections can make the issue more relatable and memorable so the teacher shows them some impactful images and the following video that depicts the struggles of polar bears and the changing Arctic environment: <https://xc.youtube.com/watch?v=JhaVnJb3ag>

## PRESENTATION 20 MIN.

- Teacher asks the following questions to get students' attention on the topic "climate change":
  - How do/did you feel about the video?
  - What do you think is the reason for this situation?

- After receiving some responses from volunteer students, the teacher shares this explanation with the class: *Polar bears have come to represent one of the species most harmed by climate*





*change. As the ice melts and threatens the world's winter seasons, animals like polar bears are among the first to endure. The polar bear depends on winter for food because the white ice serves as a backdrop for camouflage for the predator looking for its fat-rich prey. Polar bear numbers are in danger of going hungry as polar winters warm and the ice melts.*

• By encouraging students to critically examine their daily activities and consider the environmental consequences, teacher helps them develop a sense of responsibility and empowerment to make more sustainable choices. So, the teacher asks the following questions to encourage self-reflection on their habits:

- » How do you get to school?
- » Do you take a bath or a shower? How often?
- » How often do you use single-use plastics?
- » What type of energy sources are used at home?
- » Does your family car run on gasoline or electricity? etc.

• The teacher makes groups of students with similar responses to the above questions about their everyday life habits and they discuss the following questions within their groups:

*Do you think that your everyday life is somehow connected to the situation of the polar bear? If so, how?*

• Getting their responses, the teacher challenges them to think about how their collective efforts can contribute to a healthier planet for all species, including humans and wildlife. For example, the impact of using a reusable water bottle instead of single-use plastic bottles over a year. This helps students visualize the positive effects of their choices. The teacher can also ask students to come up with more ideas like "reusable water bottles".

## IMPLEMENTATION/ PRACTICE 40 MIN.

### Scenario-based Case:

John and Greta are two presidents of the student organization in a high school. They learned through the media that a large oil discovery had been made beneath their school. It might be extracted, sold, and used in factories, residences, power plants, and transportation. This would generate a lot of revenue and provide oil for public consumption. However, if it is utilized and burned, the carbon dioxide it releases will accelerate climate change.



It is not yet known whether the oil can be drilled or if chemicals must be pumped into the soil to extract the oil. But many say this process, which uses chemicals, pollutes local water supplies and harms the environment.

The oil industry companies say that they have been extracting oil at many sites for many years with great care for the environment and limited impact on local communities.

## *Should Greta and John organize a student protest against the oil extraction beneath their school or should they choose to support the extraction?*

### **ROLE-PLAY: "The Town Hall Debate"**

By engaging in this role play activity, students will have the opportunity to step into different perspectives and gain a deeper understanding of the multifaceted nature of the dilemma faced by Greta and John. It encourages critical thinking, empathy, and effective communication skills as students work collaboratively to present their arguments and consider the implications of their decisions.

- Teacher divides the class into groups, assigning each group a specific role to represent in a simulated town hall debate. The roles could include:
  - Student Leaders (Greta and John): They organize this debate as the future generation of the community, they demand it to make sure that their decision is the best one for all. They are the moderators.
  - Oil Industry Representatives who argue for the economic benefits of oil oil extraction, emphasizing responsible practices and the potential for local job creation.
  - Environmental Activists who advocate against the oil extraction, highlighting the environmental risks associated with carbon emissions, water pollution, and climate change.
  - Community Members: they express the concerns of the local community, addressing both the potential economic benefits and the environmental impacts on their daily lives.
  - Scientific Experts: they share factual information about climate change, the consequences of burning fossil fuels, and the potential long-term effects of oil extraction.
  - School Officials who consider the financial implications for the school, including how the revenue generated from extraction could impact educational resources and opportunities.
- In their limited time, students prepare their arguments using evidence, logic, and persuasive language to convey their points of view.
- After the debate, the teacher encourages students to talk about how the role play activity influenced their understanding of the dilemma. Teacher can also ask if any perspectives were changed or strengthened through the process, pointing at the complexity of real-world decision-making.



## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- What role do you think human activities play in causing climate change, and how can we balance development with environmental protection?
- How might climate change disproportionately affect different communities, and what ethical responsibilities do we have toward those communities?
- Should countries be held morally accountable for their carbon emissions? How can we address the ethical dimension of the climate crisis at an international level?
- What personal lifestyle changes can individuals make to contribute positively to addressing climate change, and do you think there's a moral obligation to make these changes?
- How might climate change impact public health and access to healthcare resources? What are the ethical implications of these impacts?
- As we develop technologies to mitigate climate change, like carbon capture, what potential ethical dilemmas might arise in terms of resource allocation and unintended consequences?
- How might climate change affect biodiversity and the ethical responsibilities we have toward other species?
- Should we prioritize investing in technologies that directly combat climate change or technologies that help us adapt to its effects? What ethical considerations come into play?

## EXTENSION ACTIVITIES

### DESIGN CHALLENGE

- Teacher can ask students to prepare an ACTION PLAN to reduce their personal contribution to climate change. It is important that the goals are tangible and feasible.
- Teacher can organize friendly class CHALLENGES to reduce their carbon footprints, such as zero waste day, a week of walking/biking to school or 7 Day Challenge: <https://www.beforeitstoolate.earth/7-day-challenge.html>

## ADDITIONAL RESOURCES & USEFUL LINKS

- <https://www.beforeitstoolate.earth/7-day-challenge.html>
- MAN effect on earth: <https://www.youtube.com/watch?v=WfGMYdalCIU>
- Dr Erich Matthes on Environmental Ethics and Climate Change: <https://www.youtube.com/watch?v=0k1gGFXSCfY>
- <https://www.nature.com/scitable/knowledge/library/ethics-and-global-climate-change-84226631/>
- Jamieson, D. Ethics, public policy and global warming. Science, Technology, & Human Values 17, 139-153 (1992).
- S. M. Gardiner & L. Hartzell-Nichols, et al. Ethics And Global Climate Change. (27 Mart 2012)
- <https://www.nature.com/scitable/knowledge/library/ethics-and-global-climate-change-84226631/>



# LESSON PLANS

# BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



## UNIT 2

# CLIMATE CHANGE

## TOPIC 2.2: COSTS OF FAST FASHION

## TOPIC

# COSTS OF FAST FASHION

The fashion industry is known for its negative environmental impact, including carbon emissions, water pollution, and exploitative labor practices. Sustainable fashion aims to minimize these effects by promoting ethical sourcing, reducing waste, and embracing environmentally friendly production processes.

### CLIMATE CHANGE AND FAST FASHION:

Fast fashion is a significant contributor to climate change. The production processes involved in fast fashion, such as textile manufacturing, dyeing, and garment production, emit greenhouse gasses and consume large amounts of energy and water. Additionally, the fast fashion industry relies heavily on global supply chains, which contribute to transportation emissions. The disposal of fast fashion items also leads to textile waste, which further exacerbates environmental issues. Overall, the fast fashion industry's high production volume, rapid turnover, and resource-intensive practices contribute to the carbon footprint and environmental impact associated with climate change.

### CLIMATE CHANGE AND SUSTAINABLE FASHION:

Sustainable fashion aims to mitigate climate change and reduce its impact on the environment. Sustainable fashion brands prioritize eco-friendly materials, adopt sustainable production practices, and promote circular economy principles. By using organic or recycled materials, minimizing waste, and employing energy-efficient processes, sustainable fashion helps reduce greenhouse gas emissions, water usage, and pollution associated with the fashion industry. Sustainable fashion also encourages conscious consumption, urging individuals to buy fewer items of higher quality and make use of existing garments for longer periods. By embracing sustainability in fashion, the industry can play a role in addressing climate change by reducing its carbon footprint and promoting more responsible practices.





## FAST FASHION AND SUSTAINABLE FASHION:

Fast fashion and sustainable fashion represent contrasting approaches within the fashion industry. Fast fashion prioritizes quick and cheap production, leading to environmental degradation and social issues. In contrast, sustainable fashion focuses on minimizing environmental impact, promoting ethical production practices, and encouraging conscious consumer choices. Sustainable fashion aims to disrupt the fast fashion model by advocating for slower production cycles, better quality garments, and more transparent supply chains. By supporting sustainable fashion, individuals can make a conscious choice to move away from the negative environmental and social consequences associated with fast fashion and contribute to a more sustainable and ethical fashion industry.

## LEARNING OUTCOMES / OBJECTIVES

- To be aware of the importance of climate change.
- To be aware of the bioethical aspects of climate change.
- To be aware of the importance of personal examples in the prevention of climate change.
- To be able to give an example of the connection between ethical principles and climate change.
- To identify specific, relevant and achievable personal goals to address climate change.
- To be trained to take initiatives regarding the prevention of climate change.
- To be willing to take personal responsibility for changing their lifestyle to help address climate change with their behavior.

## DURATION

**2 class hours (approximately 80 min.)**

## MATERIALS

- Pictures of fashion trends
- Fabric samples



## BACKGROUND (WARM-UP / MOTIVATION) 10 MINUTES

- **Fashion Flashback:** Teacher shows students images of fashion trends from different decades (e.g., 1960s, 1980s, 2000s) and asks them to share their thoughts on each trend. Teacher can prompt students to consider the factors influencing these trends and how they compare to today's fast fashion culture.
- **Mindfulness Activity (Slow Fashion exploration):** E Teacher brings in a few fabric samples from fast fashion and sustainable or slow fashion items; and encourages students to touch and feel the textures, connecting with the tactile experience. Students discuss the differences between these items.
- Students try to find out why they have these items in class.

## PRESENTATION 15 MIN.

### RESEARCH AND PRESENTATION:

- Teacher divides students into small groups and assigns each group a specific aspect of sustainable fashion, such as eco-friendly materials, fair trade practices, or upcycling. Students conduct

research and prepare a presentation highlighting the importance of their assigned aspect, its impact on carbon footprint reduction, and examples of brands or initiatives that embody it. Teacher should encourage students to include visuals and real-life case studies to support their findings.

- Teacher shares some inspiring quotations related to fashion, consumerism, and sustainability. Students choose one quotation that resonates with them and explain why they have chosen it. This can lead to discussions about values and beliefs.

Here are some examples:

- » Fast fashion is not free. Someone somewhere is paying. (Lucy Siegle)
- » As consumers, we have so much power to change the world by just being careful in what we buy. (Emma Watson)
- » Buy less. Choose well. Make it last. (Vivienne Westwood)
- » Fashion can be a universal player in protecting the planet. (Pharrell Williams)

and many more on <https://goshopia.com/50-great-sustainable-and-ethical-fashion-quotes/>



## IMPLEMENTATION/ PRACTICE 40 MIN.

### Scenario-based Case:

Sophie, a high school student passionate about sustainability, received an invitation to the highly anticipated prom party. Excitement filled the air as her classmates buzzed with anticipation about finding the perfect dress. However, Sophie couldn't shake off her concerns about the environmental and ethical implications of the fashion industry. She has some money saved. She wants to use this money to avoid activities that increase the carbon footprint, such as private cars or public transportation, especially by buying an electric bike.

She knew that conventional fashion practices often involved harmful chemicals, excessive water usage, and exploitative labor conditions. The more she learned about the dark side of the industry, the more conflicted she felt about participating in the prom culture that often prioritized trends over sustainability. But if she makes a sustainable clothing choice, it will take less time to buy an electric bike.

However, Sophie faced a dilemma. Sustainable fashion choices often came with a higher price tag, and her limited budget made it challenging to afford an ethically made dress. She didn't want to compromise her values but also didn't want to feel excluded or judged by her peers and she also wants to take the opportunity to reduce her carbon footprint by buying an electric bicycle.

- *Should Sophie choose a fast fashion dress at an affordable price and buy an electric bike or invest in a sustainable and ethically made dress, even if it means spending more money?*

Teacher divides the class into two main groups according to their answer to the above question and asks them to work collaboratively to state their position with their reasons. Teacher can use the following questions:

1. Should Sophie prioritize sustainable fashion choices despite their higher price tag? Why or why not?
2. How does sustainable fashion contribute to reducing the carbon footprint and promoting ethical practices in the fashion industry?
3. What other ways can Sophie reduce her carbon footprint apart from sustainable fashion choices?
4. How can individual choices in fashion influence industry practices and drive change?
5. What is the potential challenge Sophie might face in making a sustainable fashion choice? How can she overcome it?





## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- How often do you buy new clothes?
- What influences your clothing choices (e.g., trends, social media, friends)?
- Do you ever consider the environmental or ethical aspects of your purchases?
- What responsibilities do you as a consumer have in the face of the fast fashion industry's negative impacts?
- How can you as an individual make a positive impact on the fashion industry through your choices?
- Do you think government regulations are necessary to address fast fashion issues?
- After learning about fast fashion, has your perspective on clothing and shopping changed in any way?
- What actions, if any, do you plan to take based on what you've learned about fast fashion?

## EXTENSION ACTIVITIES

### DESIGN CHALLENGE

- Teacher organizes an activity with volunteer students. They design and sketch their own sustainable fashion piece or collection. The teacher can provide them with information about sustainable

design principles, such as zero-waste patterns, use of organic or recycled materials, and innovative production techniques. When they are ready, students present their designs and explain the sustainable elements incorporated. This activity promotes creativity, critical thinking, and understanding of the practical application of sustainable fashion concepts.

- Students can be tasked to compare a fast fashion garment with a sustainably produced one in terms of quality, longevity, and environmental impact. This can help them recognize the value of investing in better-made items.
- Students can search and share stories of people (preferably celebrities) who have made conscious changes in their shopping habits to promote sustainable fashion. Real-life examples can inspire students to reflect on their own choices.
- Students can set personal goals related to their fashion consumption. These goals could be about reducing the frequency of shopping, choosing more sustainable brands, or exploring secondhand options etc.

## ADDITIONAL RESOURCES & USEFUL LINKS

<https://goshopia.com/50-great-sustainable-and-ethical-fashion-quotes/>



# LESSON PLANS

## BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



### UNIT 3

# HUMAN DEVELOPMENT

## TOPIC 3.1: CYBER BULLYING AND BIOETHICS



## TOPIC

# CYBER BULLYING AND BIOETHICS

Cyberbullying consists of sending insulting and threatening messages via email and in public media, posting images or videos that embarrass the victim, creating fake profiles, and creating false or harmful information about the victim.

As a consequence of cyberbullying, people may have physical and mental health problems, use drugs, alcohol, have lower self-esteem, etc. The consequences of cyberbullying can be bad grades in school, college, reduced ability to act, motivation to succeed in life and a decrease in the chances of human development.

Article 9 of the Universal Declaration of Bioethics and Human Rights indicates that the privacy of individuals and the confidentiality of their personal information should be respected. Data about individuals may not be used or disclosed for purposes other than those for which they were collected or for which consent was given (UNESCO 2005).

## LEARNING OUTCOMES / OBJECTIVES

- To be able to define human dignity, human rights, and human development.
- To demonstrate knowledge and understanding of human dignity, human rights, and human development.
- To demonstrate knowledge of the basic aspects of human development.
- To know the connection between ethical principles, the application of bioethics and human development.
- To be able to independently reproduce the basic aspects of human development.
- To be able to give an example of the connection between ethical principles and human development.

## DURATION

**2 class hours (approximately 80 min.)**

## MATERIALS

- markers
- colored paper
- art supplies

## BACKGROUND (WARM-UP / MOTIVATION) 10 MINUTES

"People are returning to the tribal times....."

Teacher puts the first half of a quote by Marshall McLuhan on the board to see to what extent students agree or disagree with it by presenting their reasons. After getting students' responses, teacher writes the other half of the quote

"...when everything was public." - Marshall McLuhan and starts a discussion which is expected to focus on **Article 9 - Universal Declaration of Bioethics and Human Rights: Respect for privacy and confidentiality of personal information.**

## PRESENTATION 20 MINUTES

- In order to gauge students' existing knowledge and set the stage for the lesson, teacher asks students to brainstorm and list different forms of (cyber)bullying they are aware of.

- Teacher provides students with index cards and asks them to anonymously write about a time they witnessed or experienced cyberbullying. Teacher collects the cards and reads a few aloud (without identifying the students). This encourages students to reflect on their personal experiences and understand the emotional impact of cyberbullying.

- Students watch the following video <https://www.youtube.com/watch?v=vtfMzmkYp9E> "Is it cyberbullying?" Teacher can pause the video after each scenario in it to ask students if that is cyberbullying or not.

- In groups, students discuss the importance of privacy in their daily lives and how they feel when it is violated,
  - the reasons for the rise of cyberbullying (students can provide relevant and recent statistics on cyberbullying),
  - the consequences of cyberbullying on the person's physical, mental, social, academic life etc.
  - Volunteer students share their discussion with the class.

- Teacher writes the terms "cyberbullying," "privacy," and "ethics" on the board and asks students to define these terms in their own words and discuss how they relate to each other.



## IMPLEMENTATION/ PRACTICE 40 MIN.

### Scenario-based Case:

Sarah is a high school student who is an active user of social media platforms. She has been facing cyberbullying for the past few months. A group of her classmates started a fake Instagram account using her name and have been posting hurtful and derogatory comments about her appearance, intelligence, and personal life. The situation has escalated to the point where several other students have joined in the bullying, either by commenting on the posts or by sharing them. Sarah's self-esteem is plummeting, and she is becoming increasingly isolated.

***Ethical Dilemma: As a close friend of Sarah's, you are aware of the cyberbullying situation she's facing. You strongly believe that she deserves support and that the bullying needs to stop. You are also aware that one of the main instigators of the fake Instagram account is your best friend, Alex. Alex is going through a difficult time in his own life and claims that participating in cyberbullying provides him with a sense of relief and distraction from their own problems. He also emphasizes that everyone else is doing it, so he feels less responsible.***

Do you confront Alex about his role in the cyberbullying, risking potential damage to your friendship and exacerbating his own struggles, or do you prioritize Sarah's well-being by reporting the situation to a trusted adult or school authority, potentially resulting in disciplinary actions for Alex and others involved? This dilemma presents the conflict between loyalty to a friend who is struggling and a moral obligation to stand up against cyberbullying and support the victim. It involves considerations of empathy, personal relationships, the potential consequences of actions, and the ethical responsibility to do what is right, even if it's difficult or uncomfortable.

## SUGGESTED ACTIVITY 1:

<https://www.youtube.com/watch?v=vtfMzmkYp9E>

[https://www.youtube.com/watch?v=-C\\_T-CtglEs](https://www.youtube.com/watch?v=-C_T-CtglEs)

<https://www.youtube.com/shorts/wUpGnraLbnc>



Teacher-led in-class talk. Watch short videos and organize discussion about them.

## SUGGESTED ACTIVITY 2:

1. Small Group Activity: Creating Anti-Cyberbullying Posters (10 minutes)

- Provide materials such as markers, colored paper, and art supplies.
- Instruct each group to create an anti-cyberbullying poster that highlights the importance of kindness, empathy, and responsible online behavior.



2. Presentation of Posters and Reflection (10 minutes)

- Have each group present their posters to the whole group.
- Facilitate a brief discussion on what participants learned from the activity and any personal insights gained.

## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- How is your attitude to cyberbullying different in the beginning of the lesson and in the end?
- Do you know any examples of cyberbullying?
- How was the situation handled? What position did you take?



## EXTENSION ACTIVITIES

Further discussion questions:

1. What is cyberbullying, and how does it differ from traditional bullying?
2. How prevalent is cyberbullying today? Are there specific demographics or groups more susceptible to being targeted?
3. What are some common forms of cyberbullying? How have they evolved with the rise of social media and technology?
4. In what ways can cyberbullying have serious emotional and psychological effects on the victims? How does it extend beyond the online realm?
5. What role do bystanders play in cyberbullying situations? How can their actions or inaction impact the overall situation?
6. How can the anonymity provided by the internet contribute to the intensification of cyberbullying? What challenges does this pose for identifying perpetrators?
7. What ethical responsibilities do individuals have when witnessing cyberbullying? Should they intervene, and if so, how?
8. Discuss the concept of the "online disinhibition effect." How might this phenomenon contribute to cyberbullying behaviors?
9. What are some strategies individuals can use to protect themselves from cyberbullying? How can they maintain a positive online presence?
10. What actions can schools, parents, and online platforms take to prevent and address cyberbullying effectively?
11. Share your thoughts on the tension between freedom of speech and addressing hate speech or cyberbullying online. How can this balance be struck?
12. Have you personally witnessed or experienced cyberbullying? How did it affect you, and how was it resolved?
13. In the scenario of the ethical dilemma presented earlier, what factors would influence your decision between confronting a friend involved in cyberbullying or reporting it?
14. How can promoting empathy and digital citizenship contribute to reducing cyberbullying incidents?
15. Discuss the long-term consequences of being involved in cyberbullying for both the victim and the perpetrator. How might it affect their future?

## ADDITIONAL RESOURCES & USEFUL LINKS

<https://www.teachstarter.com/us/blog/anti-bullying-activities-school-classrooms/>





## TOPIC

# MENTAL DISABILITIES AND BIOETHICS

Mental disabilities, also known as mental disorders or psychiatric disorders, refer to a range of conditions that affect a person's thinking, feeling, behavior, or mood. These conditions can impact an individual's daily life, relationships, and overall well-being. Mental disabilities encompass a wide spectrum of disorders, including but not limited to:

- **Depression:** A mood disorder characterized by persistent feelings of sadness, hopelessness, and a loss of interest in activities.
- **Anxiety Disorders:** Conditions such as generalized anxiety disorder, social anxiety disorder, and panic disorder, which involve excessive worry, fear, and anxiety.
- **Schizophrenia:** A serious disorder that affects a person's thoughts, emotions, and behavior, often causing disorganized thinking and hallucinations.
- **Bipolar Disorder:** A mood disorder characterized by periods of intense emotional highs (mania) and lows (depression).
- **Autism Spectrum Disorder (ASD):** A developmental disorder affecting communication, social interaction, and behavior.

Respecting the dignity and enabling the development of the potential of every person is a constantly topical issue. Society has an obligation to give every individual the opportunity to realize his potential, if he is ready to make efforts to realize them. In that sense, individuals have formal equality in rights and obligations towards society, and society has a duty to provide its members with access to educational and health services under accessible and equal conditions.

The difference in the realization of the potential of individuals should not be conditioned by social factors such as stereotypes, segregation, and discrimination, but it should be due to individual factors such as the talent that individuals possess, the willingness to work and make efforts in developing their own talents etc.



## LEARNING OUTCOMES / OBJECTIVES

- To demonstrate knowledge of the basic aspects of human development.
- To demonstrate knowledge and understanding of human dignity, human rights, and human development.
- To know the connection between ethical principles, the application of bioethics and human development.
- To be able to independently reproduce the basic aspects of human development.
- To be able to give an example of the connection between ethical principles and human development.
- To be able to apply the bioethical principles in concrete situations concerning human rights.

## DURATION

**2 class hours (approximately 80 min.)**

## MATERIALS

- List of myths

## BACKGROUND (WARM-UP / MOTIVATION) 10 MINUTES

The teacher starts with a warm activity: List Myths (5 minutes): On the whiteboard or flipchart there are several common myths related to mental disabilities. These myths can include stereotypes or misunderstandings that students might have encountered.

For example:

- » Myth: "People with mental disabilities are dangerous."
- » Myth: "Mental disabilities are just an excuse for bad behavior."
- » Myth: "You can always tell if someone has a mental disability by looking at them."

Then the teacher asks the students to share their thoughts about each myth, encouraging an open and respectful discussion. Students share any personal experiences or stories they may have related to these myths.

After discussing each myth, the teacher presents the corresponding facts.

- » Fact: "People with mental disabilities are not inherently dangerous. In fact, they are more likely to be victims of violence than aggressors."
- » Fact: "Mental disabilities are real medical conditions and not excuses for behavior. They can be managed with treatment and support."
- » Fact: "Many mental disabilities are not visible, and it's not possible to determine if someone has a mental disability just by looking at them."



## PRESENTATION 20 MIN.

In spite of the significant impact that bullying can have on a target, our society often views it as acceptable behavior. There are many misconceptions that characterize bullying, all of which can lead to minimizing the behavior. Here are a few of these common misconceptions, followed by the facts.

[Common Misconceptions about Bullying.](#)

## IMPLEMENTATION/ PRACTICE 40 MIN.

### Scenario-based case:

Let's imagine a situation where it is possible to save the life of a critically ill premature baby who is still in his mother's womb with medical intervention. There is a high probability that he will survive, but he will have mental deficiencies. What to do in such a situation. One answer is that because human dignity rests on the mental capacities of individuals, it is wrong to bring into the

world a person who will be mentally incompetent. The second answer would be that every measure would have to be taken to save the life of the premature, because the equality of human dignity forbids some lives to be considered not worth living. The third answer is that the parents' dignity should be respected, and they should be given the autonomy to make their own decisions and resolve this moral dilemma. What do you think about this situation? What would be the right decision? Why?

### SUGGESTED ACTIVITY 1:

Division in three groups:

Divide the class into three groups according to which of the three views is closest to the students' own. Each group then works together to answer the following questions:

1. Is every life equally valuable? Why?
2. Should awareness be raised to help people with mental disabilities?
3. Should people with mental disabilities have the same rights as all other people?
4. Is ignoring people with mental disabilities a form of discrimination?
5. Is ignoring people with mental disabilities a form of inequality?

A continuación, el profesor dirige un debate en clase.

### SUGGESTED ACTIVITY 2:

Watch a short video about mental disability and organize class discussion regarding questions arising from the video:

Proposed videos:

<https://www.youtube.com/watch?v=F02hGK8Ko3>

<https://www.youtube.com/watch?v=zzTCrz9Xynw>



## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- What have you learned about the topic that you didn't know or consider before?
- Has your attitude towards people with mental disabilities changed?

## EXTENSION ACTIVITIES

### Follow up discussion:

- Do you know a person with a mental disability?
- How should people with mental disabilities be integrated into society?
- How can you help people with mental disabilities in your local community?



# LESSON PLANS

## BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



### UNIT 4

# ECOSYSTEM HEALTH AND WATER RESOURCES

## TOPIC 4.1: ECOSYSTEM HEALTH



## TOPIC

# ECOSYSTEM HEALTH

## LEARNING OUTCOMES / OBJECTIVES

- To explore the interconnectedness of the world.
- To know the connection between ecosystem services and human benefits.
- To understand the importance of maintaining healthy ecosystems and the impacts that human activities can have on these systems.
- To understand whether economic benefits outweigh sustainability of the ecosystem.
- To accept personal responsibility when interfering in ecosystem health.

## DURATION

**2 class hours (approximately 80 min.)**

## MATERIALS

- Video
- Paper and pencils

## BACKGROUND (WARM-UP / MOTIVATION)) 10 MINUTES

The teacher introduces the topic by asking students to express their opinion on the topic: ECOSYSTEM.

How do you understand that the ecosystem is healthy? What do you already know? What makes you feel so?

<https://www.menti.com/almd1f1xbven>. What else would you like to know? This can be followed by mutual discussion.

*An ecosystem is a geographic area where plants, animals, and other organisms, as well as weather and landscapes, work together to form a bubble of life. (Ecosystem is a biological community of interacting organisms and their physical environment)*

## PRESENTATION 20 MIN.

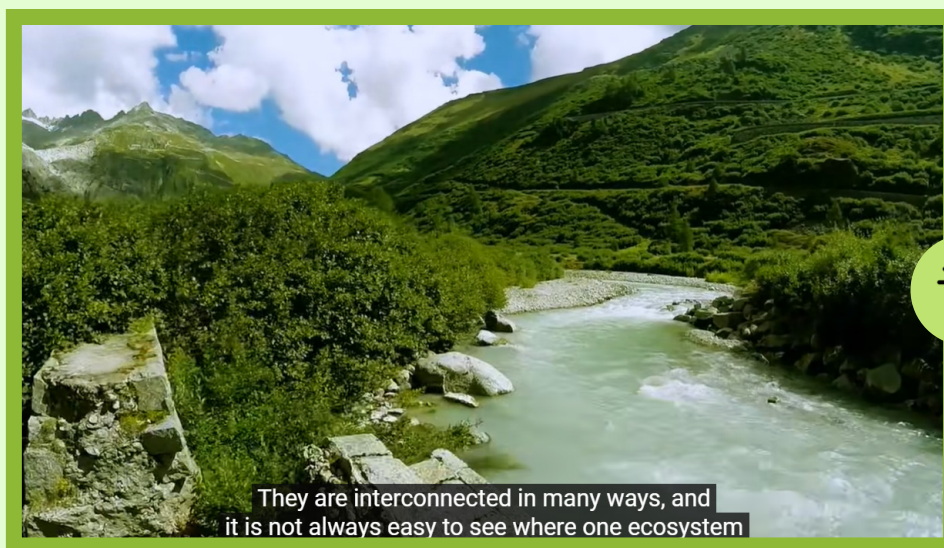
The teacher invites students to get a closer and more detailed view on the parts and functions of the ecosystem.

The state of the ecosystem is dynamic and can change depending on the influence of several factors such as fires, floods, droughts, extinction of certain species of animals, climate change, development of mining, fishing, hunting, deforestation,

development of industry, especially of the chemical industry, etc. If a problem with the health of the ecosystem is diagnosed, we try to find a cure, measures that will bring the ecosystem back to normal. If the diagnostics show that the ecosystem is healthy, we try to maintain it in such a state, which means that we have to take care of the revival of the population of indigenous species, the maintenance of biodiversity and the maintenance of evolutionary and ecological processes.

Watch the video to get a broader understanding of ecosystem components and their mutual connection.

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



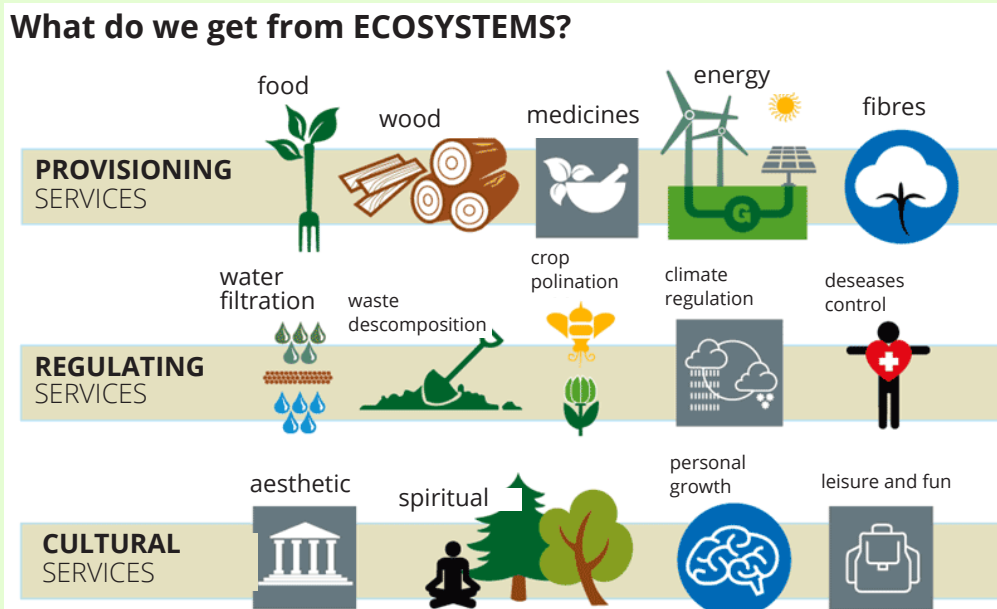
They are interconnected in many ways, and it is not always easy to see where one ecosystem

The video provides a clear understanding how wisely and thoughtfully everything is created, existing and operating in nature. Human beings as the biggest omnivores use and get benefits from a lot of ecosystem services. That is nature offers benefits which people use free of charge and without limitations. Ecosystem goods and services are the many life-sustaining benefits we receive from nature—clean air and water, fertile soil for crop production, pollination, and flood control. (U.S. EPA, 2014a).

Human well-being depends on the services they receive from ecosystems, either directly or indirectly. Humans enjoy the well-being of services that they receive from completely natural ecosystems such as grasslands, forests, oceans, but also those whose management is more present in the intervention of the human factor such as culture and cities. These benefits or ecosystem services are divided into: provisioning, regulating and cultural. Students' task: Sort the pictures into three groups according to relevant services

## Students' tasks:

Classify the images into three groups according to the relevant services



Ecosystem services: <https://www.youtube.com/watch?v=fIH2v4Nr9i4>





However, there are certain factors that can influence the change of ecosystems:

**Natural disturbances:** Natural disturbances such as wildfires, floods, storms, and droughts can dramatically impact ecosystems. These disturbances can create opportunities for new species to establish themselves or cause significant damage to existing communities.



**Actividades humanas:** Human activities such as land use change, agriculture, deforestation, urbanization, pollution, and climate change can significantly impact ecosystems. These activities can alter the physical, chemical, and biological characteristics of the environment, leading to changes in ecosystem structure and function.



**The increasing quantum of services that people demand from ecosystems that** is related to the growth of consumerism. The need for food, water and other products that ecosystems must provide to people is increasing more and more.



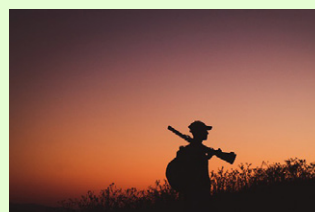
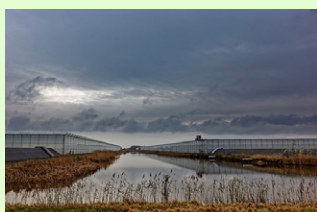
**Invasive species:** Invasive species are non-native species that can rapidly colonize and dominate an ecosystem, often causing significant ecological and economic damage. They can displace native species, alter nutrient cycling, and change the structure of the ecosystem.



**Climate change:** Climate change can impact ecosystems by altering temperature and precipitation patterns, affecting the distribution and abundance of species, and causing changes in the timing of seasonal events such as plant flowering or bird migration.



**Overexploitation:** Overexploitation of natural resources such as fish, timber, and wildlife can impact ecosystems by reducing the abundance of targeted species and altering the ecological relationships that these species have with other organisms. Due to excessive exploitation, many forests, arable land, pastures are degraded, and the degraded areas are constantly growing.



**Land conversion.** A lot of fertile land, greenery, forests have been converted into residential buildings, shopping malls, thoroughfares, etc.

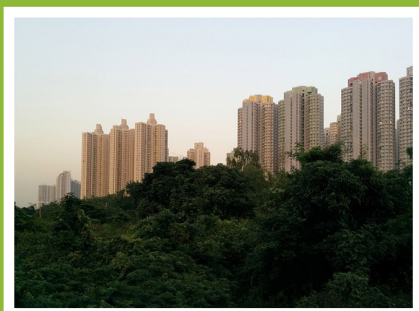


## IMPLEMENTATION/ PRACTICE 40 MIN.

### Scenario-based Case:

A rapidly growing city is expanding its borders and is planning to build a new garbage recycling plant on a large plot of land that has remained undeveloped and preserved as a natural area for many years. It contains natural walking trails for mothers with children and a built-in playground for them. This may result in the

destruction of natural habitats such as water reservoirs (lake), grassland, a forest zone and deprive the city residents from natural leisure places. Moreover, this construction may be causing the displacement of numerous animal species and the destruction of biodiversity. The government argues that the project is necessary for economic growth, solvation of excessive garbage disposal problems and job creation, while critics argue that the long-term costs to the environment and future generations outweigh the short-term benefits. The city council conducts a public poll, followed by a meeting with the city residents, allowing them to voice their concerns, provide suggestions, and engage in a constructive dialogue with the government representatives to make the final decision.



**DILEMMA:  
SHOULD THE CITY BUILD THE RECYCLING  
PLANT IN THE CITY NATURAL AREA?**

### SUGGESTED ACTIVITY 1

Students are divided into groups to discuss the ethical considerations and potential solutions to this scenario. They consider the following questions and create a see-saw balance **of for and against** arguments. They must give each argument a score from 0 to 3 depending on how convincing they find it. At the end they add up the scores and see which side of dilemma outweighs.

Arguments in favor	Points	Arguments against	Points
total		total	



## Points to consider:

1. Consider arguments for construction of the recycling plant. Benefits people and the city will get.
2. Consider disadvantages of this project and ecosystem benefits people deprive themselves from?
3. Consider how to compensate for the take over for construction of part of land and its ecosystem?
4. Consider how do we balance the need for economic growth and job creation with the potential negative impacts of urbanization on the environment?
5. What ethical considerations need to be taken into account when making decisions about urbanization?
6. What alternative solutions could be explored to accommodate the industrial project without destroying natural habitats and biodiversity?

## SUGGESTED ACTIVITY 2

The meeting with the city council board. The meeting is attended by representatives of different social groups who present their vision of the case.

- 1. Government Representative:** Argues in favor of the garbage recycling plant, highlighting the economic benefits, job creation, and the need to address the garbage disposal problem. Emphasizes the potential positive impact on the city's development and growth.
- 2. Volunteer of the Youth Organization:** Opposes the construction of the garbage recycling plant, expressing concerns about the destruction of natural youth and family relaxation places.
- 3. Local Resident:** Represents a resident living near the proposed site. Shares personal experiences and concerns about the potential negative impacts on the community, including increased traffic, noise pollution, and reduced quality of life. Expresses a desire to protect the natural area and preserve the existing ecosystem.
- 4. Wildlife Expert:** Opposes the construction of the garbage recycling plant, expressing concerns about the destruction of natural habitats, loss of biodiversity, and long-term environmental consequences. Argues that alternative solutions should be considered to address the garbage problem without compromising the environment. Provides scientific knowledge about the specific animal species present in the area and their reliance on the natural habitats. Explains the potential consequences of habitat destruction, such as species displacement, reduced biodiversity, and ecosystem imbalance.



**5. Business Owner:** Supports the construction of the garbage recycling plant due to potential economic opportunities. Highlights the job creation aspect and discusses how it could benefit the local economy and businesses. Raises concerns about the economic costs of alternative solutions.

**6. City Planner:** Presents the technical aspects of the project, including the design, waste management capabilities, and environmental impact assessments. Provides information about potential mitigation measures, such as habitat restoration and environmental monitoring.

**7. Concerned Parent:** Expresses worries about the possible loss of the recreation place for families with children, long-term effects on future generations and the importance of preserving natural areas for children's education and well-being. Emphasizes the responsibility of the city council to consider sustainable and environmentally friendly solutions.

## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- What have you learned as a result of the activities that made you think or is worth sharing with your friend/parent?
- Was it difficult to take a stand in the dilemma?

## EXTENSION ACTIVITIES

### DISCUSS WITH STUDENTS:

Should public opinion be heard when making a decision to build a strategically important object within the city?

Does public opinion matter and is it decisive after being listened to?

Would you agree to the initiative to build a recycling plant in your city's natural area?

## ADDITIONAL RESOURCES & USEFUL LINKS

For students'self-research: <https://education.nationalgeographic.org/resource/ecosystem/>



# LESSON PLANS

## BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



### UNIT 4

# ECOSYSTEM HEALTH AND WATER RESOURCES

## TOPIC 4.2: THE ROLE OF PHOSPHATES IN EUTROPHICATION



## TOPIC

# THE ROLE OF PHOSPHATES IN EUTROPHICATION

Eutrophication is a process that occurs when too many nutrients enter the water and cause excessive growth of certain species of algae, degradation, and overgrowth of the marine environment. Eutrophic bodies of water have huge expanses of blue-green algae blooms that not only reduce water clarity but also consume all the oxygen in the water, poisoning it, which in turn leads to mass fish die-offs and damages the skin of swimmers. The only way to reduce eutrophication is to reduce pollution levels.

One of the main causes of eutrophication is agricultural intensification. Wheat, canola, potatoes, and any other plant needs nutrients to grow. People fertilize fields to provide an extra 'meal' for agricultural crops. Some of the fertilizers end up in rivers, lakes, and the sea. There, these nutrients become part of the algae's menu.

Data from the Baltic Sea Environmental Protection Commission (HELCOM) show that, due to excessive nutrient leakage, up to 97% of the Baltic Sea is suffering from eutrophication. Although the leakage of nutrients is being reduced, it has not been possible to reach their maximum permissible level in all sub-basins by 2021.

The good news is that many of the major sources of pollution have been identified and significant improvements have been made, such as improving sewage treatment plants and addressing industrial runoff. In these respects, the load on the Baltic Sea has decreased.

A much more difficult issue to solve is the leakage of agricultural fertilizers from the Baltic Sea area due to the many objects and their dispersion. The main routes of nutrients are the five largest rivers – the Neva, the Nemunas, the Daugava, the Vistula, and the Oder. The expected development of agriculture will seriously worsen the environmental conditions in the entire region if the reduction of nutrients in the Baltic Sea is not implemented.

An additional problem is related to phosphorus, which has already entered the Baltic Sea and is now accumulating in the sediments of the deepest parts of the sea basin. Anoxic (oxygen-free) conditions promote the release of phosphorus from sediments - the so-called internal load - and this in turn promotes algal blooms, which sink as they die and use up oxygen in the process of decomposition. [https://lv-pdf.panda.org/virzieni/baltijas\\_jura/eitrofikacija/](https://lv-pdf.panda.org/virzieni/baltijas_jura/eitrofikacija/) As a result of anthropogenic pollution, phosphorus enters water bodies in the form of  $H_2PO_4^-$ ,  $HPO_4^{2-}$ ,  $PO_4^{3-}$  or polyphosphate ions. Special technology is required to clean wastewater from phosphate ion pollution. Two methods are used: biological and chemical.

Biological treatment uses bacteria that accumulate phosphorus, forming biomass.

In chemistry, phosphate ions are separated by precipitation. The resulting chemical sludge is difficult to process, the reagents can also be expensive, however, the equipment required for this method is simpler than for biological treatment. In addition, the method is safer in areas where the composition of the wastewater makes it difficult for the biological separation of phosphates. Phosphate ions form slightly dissociated compounds with ions of many metals, however, two of them are used for practical water treatment.



## LEARNING OUTCOMES / OBJECTIVES

- To demonstrate knowledge and understanding of eutrophication.
- To demonstrate knowledge of the basic aspects of eutrophication.
- To know the connection between ethical principles, the application of bioethics, and eutrophication.

## DURATION

**2 class hours (approximately 80 min.)**

## MATERIALS

- For in-class discussion: ppt presentation
- For laboratory practice: 1%  $\text{Na}_3\text{PO}_4$  solution, washing powder solution; 0.5M  $\text{FeCl}_3$  solution, 0.5M  $\text{Al}_2(\text{SO}_4)_3$  solution, 0.5M  $\text{CaCl}_2$  solution, 6 tubes, dropping pipette, funnels, conical flasks, glass funnel, and filter paper

## BACKGROUND (WARM-UP / MOTIVATION) 10 MINUTES

The teacher starts the lesson with the following introductory questions. They can be put in a PPT.

1. What are phosphates, and where do they commonly come from?
2. Can you explain the process of eutrophication? How does it occur?
3. What are the primary sources of phosphates that lead to

eutrophication in water bodies?

4. How do agricultural practices contribute to phosphate runoff into water systems?
5. How do household products like detergents impact phosphate levels in waterways?
6. How does eutrophication impact human health and local economies?
7. How can individuals contribute to reducing phosphates in their daily lives?
8. What role do government regulations and policies play in controlling phosphate pollution?
9. Are there any local water bodies in your area affected by eutrophication? What measures are being taken to address it?
10. How can technological advancements help monitor and control phosphate levels in water bodies?

## PRESENTATION 20 MINUTES

**Presenting a topic with questions and watching two videos**

Group Discussion

- What detergents do you use for:  
personal hygiene?  
dishes?  
laundry?

- How do you choose them?

Which of these three groups of detergents cause the greatest harm to the environment and why?



Watching a video that metaphorically shows what occurs with the Baltic Sea every day which can be perceived as absurd.



Watching a video on Eutrophication which is a significant threat to the Baltic Sea.





## IMPLEMENTATION/ PRACTICE 40 MIN.

### Scenario-based Case:

The Smith family has lived near Crystal Lake for generations.

The lake has always been a central part of their lives, providing them with fishing, swimming, and recreational opportunities.

However, in recent years, the water quality of Crystal Lake has declined due to eutrophication caused by excessive phosphates

in the water. Algae blooms have become more frequent, making the lake unappealing for activities the Smith family once enjoyed.

The Smiths have a small family business that manufactures laundry detergents, and their flagship product contains phosphates. The family business is an important source of income and has been passed down through generations. Their detergent is widely used in the community and neighboring towns.

**ETHICAL DILEMMA:** The Smith family is facing an ethical dilemma. On one hand, they care deeply about the environment and the health of Crystal Lake. They are aware that their phosphate-containing detergent contributes to the eutrophication problem. On the other hand, a ban on phosphates in their detergent could jeopardize the future of their family business and the livelihoods of their employees.

### Laboratory Practice

#### MODELLING OF WASTEWATER TREATMENT

##### Experiment equipment, substances

1%  $\text{Na}_3\text{PO}_4$  solution, washing powder solution; 0.5M  $\text{FeCl}_3$  solution, 0.5M  $\text{Al}_2(\text{SO}_4)_3$  solution, 0.5M  $\text{CaCl}_2$  solution.

6 tubes, dropping pipette, funnels, conical flasks, glass funnel, and filter paper.

##### Experiment process

1. Into the first tube, pour the sodium orthophosphate solution into a layer of  $\approx 1$  cm
2. Add  $\approx 10$  drops of the first selected reagent for the precipitation of phosphate ions
3. Record the observations in the table
4. Into the second tube, pour the washing powder solution in a layer of  $\approx 1$  cm
5. Add  $\approx 10$  drops of the first selected reagent for the precipitation of phosphate ions
6. Record the observations in the table
7. Repeat the experiment with the second and the third proposed reagents.

Table 1. Effect of reagent on wastewater samples

Registration of obtained data

Composition of wastewater	Observations after reagent addition
Na <sub>3</sub> PO <sub>4</sub> / PO <sub>4</sub> <sup>3-</sup> ions	1.
	2.
	3.
Washing powder solution	1.
	2.
	3.

## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- How has your understanding of the eutrophication process changed?
- Have you thought about it before?

## EXTENSION ACTIVITIES

- Is it possible to treat wastewater from phosphates to prevent eutrophic pollution?
- Which of the reagents is the most effective for precipitating phosphate ions?
- How to choose an eco-friendly detergent?



# LESSON PLANS

## BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



### UNIT 5

# SCIENCE AND TECHNOLOGY

## TOPIC 5.1: BIOTECHNOLOGY: GENETIC ENGINEERING



## TOPIC

# BIOTECHNOLOGY: GENETIC ENGINEERING

## LEARNING OUTCOMES / OBJECTIVES

- To demonstrate knowledge and understanding of science and technology.
- Understanding the impact of science and technology on society and the environment.

## DURATION

**2 class hours (approximately 80 min.)**

## BACKGROUND (WARM-UP / MOTIVATION) 10 MINUTES

WARM-UP DISCUSSION.

### Scientific understanding

What do you know about genetic engineering? Can you give a quick definition of genetic engineering? (Possible answer: This is a field of science that involves manipulating the genes of living organisms).

Can you provide any examples? (eg. genetically modified crops; "designing a baby" when planning a child - eye colour, gender, hair; in treatment of diseases by altering a person's genes. Eg., changing the genes that cause diseases, so they don't make the person sick) What associations do you have?

Can you name any potential benefits or concerns regarding the use of genetic engineering in the mentioned examples?

**Sum up:** Genetic engineering involves changing the DNA of organisms, and it has applications in agriculture, medicine, and more. There are both potential benefits and concerns associated with this technology.

The concept of genetics is the study of how traits and characteristics are passed from one generation to the next. Genetics is the scientific study of genes and heredity, or how certain qualities or traits are passed from parents to offspring as a result of changes in DNA sequence. A gene is a part of DNA that contains instructions for creating one or more molecules that help the body work. Also, genetic engineering produces a variety of drugs and hormones for medical use.

## PRESENTATION 20 MIN.

Students are invited to watch a video and share what extra information they have received.

Video options:



option 1



option 2



option 3



option 4

Students are provided with slips of paper indicating pros and cons of genetic engineering. In turns they pick a paper, read the message and identify whether it's "a pro" or "a con" and then explain their opinion.

<https://www.conserve-energy-future.com/pros-and-cons-of-genetic-engineering.php>

## IMPLEMENTATION/ PRACTICE 40 MIN.

### SCENARIO-BASED CASE:

<https://www.youtube.com/watch?v=rx953M-tpp4&t=47s>

In a small town in Germany, there lived a family named Weber. This family was passionate about farming and loved taking care of their family's cornfield. Weber's corn was the sweetest and most abundant in the entire town, and everyone admired his exceptional crops.

One day, a famous scientist, Dr. Emma Hoffmann, visited Weber's farm. She was an expert in genetic engineering and conducted groundbreaking research on modifying plant DNA to create superior crops.

As they walked through the flourishing cornfield, Dr. Hoffmann explained the concept of genetic engineering to Weber's family. He told him how scientists could alter the DNA of plants to make them more resistant to pests, diseases, and adverse weather conditions. This could result in bigger yields and better-quality crops, benefiting farmers and communities worldwide. But besides that, genetic engineering has the potential to revolutionize agriculture, but it also raises important ethical questions. While we can enhance crops, there is a risk of unintended consequences.

The Weber family was about to decide whether to work with Dr. Hoffman, but they had a lot of disagreements and confusion about genetic engineering. They were eager to embrace the potential benefits of genetic engineering, while also being deeply concerned about its unknown consequences.

## DILEMMA:

*Should the Weber family use the modified plant DNA for their farm or continue their work with traditional farming?*

## SUGGESTED ACTIVITY 1:

### Pro-Cons Debate

**Objective:** Students will discuss the pros and cons of using genetically modified plant technology compared to traditional farming.

- 1. Team Preparation:** Divide the class into two teams: Team "Genetic Modification" and Team "Traditional Farming." Each team should conduct research and gather arguments representing the advantages and disadvantages of their assigned position.
- 2. Debate Preparation:** Allow each team time to prepare their arguments based on facts, scientific knowledge, and ethical considerations.
- 3. Debate:** Conduct a formal debate where the teams present their viewpoints alternately. Students should focus on their public speaking skills and attempt to counter the arguments of the opposing team.
- 4. Audience Participation:** The rest of the class can serve as the audience and ask questions or share their own thoughts on the presented arguments after the debate.
- 5. Reflection:** After the debate, students can contemplate how challenging it can be to choose between technological advancement and established traditions. They can also discuss how such dilemmas can impact businesses, communities, and families in the real world.

## SUGGESTED ACTIVITY 2:

### Decision-Based Role Play

**Objective:** Students will take on the roles of the Weber family, weigh ethical considerations, and make a decision between genetically modified plant technology and traditional farming.

- 1. Family Introduction:** Provide students with the basics of the Weber family and their connection to corn cultivation.
- 2. Information Gathering:** Provide students with information on genetically modified plant technology and traditional farming. This information could be in the form of articles, videos, or presentations.
- 3. Role-Based Discussions:** Divide the class into groups, each taking on a different role within the Weber family (e.g., father, mother, eldest son, daughter, etc.). Students should discuss within their roles which option is best for the family.



**4. Family Meeting:** Each group should present their arguments and collectively make a decision as the Weber family. The discussion should consider ethical, economic, social, and environmental aspects.

**5. Decision Presentation:** Each group can present their decision in the form of a short presentation or a dramatic dialogue.

**6. Reflection:** After the presentations, students can reflect on how they felt when they had to make the ethical decision for the Weber family. They can also think about how such decisions are made in the real world and what factors come into play.

## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- What message will you convey to others after learning about GE?
- How has your attitude towards GE changed or remained the same?

## EXTENSION ACTIVITIES

### SUGGESTED ACTIVITY 1:

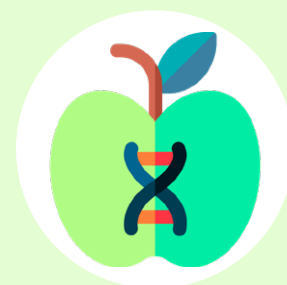
#### Pro-Con Debat

1. Is it risky to use genetic engineering without knowing all the outcomes? What might happen if we don't fully understand it first?
2. Can science bring good things for the future? How can we make sure science helps without causing problems?
3. How might farmers benefit from using genetically engineered crops? Are there any possible disadvantages they should think about?

### SUGGESTED ACTIVITY 2:

#### Decision-Based Role Play

1. Should people be told if their food has been changed by science? Why is it important to know what's in our food?
2. Are there rules for food made with scientific changes? Why are they necessary, and how can we make them better?
3. Can genetic engineering and traditional farming work together for a better environment? How can we balance new technology with traditional methods?





## ADDITIONAL RESOURCES & USEFUL LINKS

- <https://kids.britannica.com/kids/article/genetic-engineering/600760>
- <https://kids.britannica.com/students/article/genetic-engineering/274518/media?assemblyId=239805>
- <https://tikithepenguin.org/what-is-genetic-engineering/>
- Dr Erich Matthes on Environmental Ethics and Climate Change: <https://www.youtube.com/watch?v=0k1gGFXSCfY>
- U.S. Department of Agriculture <https://www.usda.gov/topics/biotechnology/climatechange#:~:text=Mitigar%20y%20adaptarse%20al%20cambio%20climático&text=Productos%20desarrollados%20con%20biotecnología%20agrícola,más%20largos%20y%20que%20reducen%20los%20residuos%20alimenticios>





# LESSON PLANS

# BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



## UNIT 5

# SCIENCE AND TECHNOLOGY

## TOPIC 5.2: BIOTECHNOLOGY

## TOPIC

# BIOTECHNOLOGY

Biotechnology is a multidisciplinary field that uses living organisms, cells, and biological processes to develop products, technologies, and processes that improve various aspects of human life and the environment. It involves the application of principles from biology, genetics, molecular biology, biochemistry, and other related disciplines to manipulate and utilize biological systems for practical purposes. Biotechnology seeks to address global challenges, such as food security, disease treatment, sustainable resource utilization, and environmental sustainability while promoting economic growth and scientific advancement.

In simple words:



*Biotechnology is using science to make useful things from living organisms, such as plants, animals, or tiny cells. It's a bit like cooking, where you mix ingredients to create something new, but in biotechnology, scientists use cells and molecules to create products or solve problems. For example, they can make medicines, improve crops, or clean up pollution using the power of biology. So, it's all about using the secrets of life to make our lives better!*

## LEARNING OUTCOMES / OBJECTIVES

- To foster knowledge and comprehension of scientific principles and technological concepts.
- To recognize and analyze the effects of science and technology on both society and the environment.
- To effectively grasp and interpret complex scientific concepts.
- To cultivate an appreciation for the systematic approach of the scientific method in investigating and understanding natural phenomena.

## DURATION

**2 class hours (approximately 80 min.)**



## BACKGROUND (WARM-UP / MOTIVATION) 15 MINUTES

The teacher starts the lesson by initiating a discussion on the topic of Biotechnology.  
The matching activity. The teacher offers branches of biotechnology and their descriptions. Students try to match the branch with its description:

**Medical Biotechnology:** involves the use of biotechnology in medicine and healthcare. It includes the development of vaccines, diagnostic tests, gene therapy, regenerative medicine, and pharmaceuticals.

**Agricultural Biotechnology:** focuses on improving crops and livestock for increased yield, pest resistance, and nutritional content. It includes genetic modification (GMOs), crop breeding, and precision agriculture.

**Industrial Biotechnology:** aims to use biological processes to manufacture various products, including biofuels, enzymes, chemicals, and biodegradable plastics. It can also be used for wastewater treatment and pollution control.

**Environmental Biotechnology:** addresses environmental challenges by using biological processes to clean up pollutants, treat wastewater, and manage waste. It also includes bioremediation and biofuel production from renewable resources.

**Food Biotechnology:** involves improving the quality, safety, and nutritional value of food products. It includes processes like fermentation, food preservation, and the development of genetically modified crops.

**Biopharmaceuticals:** are drugs and therapies produced using biotechnological methods. This includes the development of monoclonal antibodies, vaccines, and biologics for treating various diseases.

**Bioprocessing:** focuses on the development of efficient and scalable methods for producing biological products, such as recombinant proteins, using microbial or cell-based systems.

**Genomics and Proteomics:** involve studying the complete set of an organism's genes (genomics) or all the proteins produced by those genes (proteomics). They are essential for understanding biological systems and developing new therapies.

**Bioinformatics:** combines biology, computer science, and mathematics to analyze and interpret biological data, such as DNA sequences and protein structures. It plays a critical role in genomics and drug discovery.



**Stem Cell Research:** involves the study and manipulation of stem cells for regenerative medicine, tissue engineering, and the treatment of various diseases.

**Synthetic Biology:** y is an interdisciplinary field that aims to design and engineer biological systems for specific purposes, such as creating biofuels, bioplastics, and novel biomaterials.

1.1. What incurable illnesses are the most crucial in the world today?  
Cancer, Alzheimer's, HIV/AIDS, rare genetic disorders, diabetes...

2. Do you know any person with an incurable illness?

## PRESENTATION 20 MINUTES

The students watch the video about the rare illnesses and discuss their impressions and choice of a possible cure: traditional or biotech?

<https://www.youtube.com/watch?v=80EaE8PCYfA>  
<https://www.youtube.com/watch?v=MoqHW1PqBdU>

## IMPLEMENTATION/ PRACTICE 40 MIN.

### Scenario-based Case:

In a lively school, there was a student named Luka. Luka was a curious and happy kid who had a rare illness. One day, he got a special letter. It asked him to be part of a science project. The scientists had a new way to treat Luka's illness. They used a special science stuff called biotechnology. It looked like this treatment could make Luka better forever. But, the treatment was still being tested. The scientists told Luka that about 90 out of 100 people who tried it got better. That's great news! But, 10 out of 100 people got worse. That's not so good.

The scientists said they made the treatment even better, but there might still be some bad things that could happen. Luka didn't know what to do, so he asked his friends in class.

His classmates, filled with compassion and empathy, pondered the question, offering their own perspectives on what Luka should do, ultimately creating a thoughtful and supportive discussion.

*Should Luka take the risk and go into research that promises to cure him of a rare genetic disease, or should he wait until the therapy is finally approved as safe?*



## SUGGESTED ACTIVITY 1: ETHICAL DILEMMA BRAINSTORM

1. Divide the class into small groups.
2. Assign each group the task of brainstorming ethical solutions for Luka's situation.
3. Provide them with a brief overview of Luka's dilemma and the potential risks and benefits of the gene-editing technique.
4. Encourage each group to generate creative solutions that balance the urgency of eradicating the virus with ethical considerations.
5. Each group presents their top three solutions, explaining the rationale behind their choices.
6. Facilitate a class discussion where students compare the different solutions and analyze their ethical implications, feasibility, and potential outcomes.
7. Conclude with a reflection session on the challenges of ethical decision-making in the field of biotechnology.

## SUGGESTED ACTIVITY 2: LUKA'S ETHICAL INTERVIEW

1. Assign pairs of students to play the roles of interviewer and Luka.
2. In the interview, the interviewer asks Luka questions about her thought process, emotions, and ethical considerations in the story.
3. Luka responds in character, explaining his motivations, concerns, and decisions.
4. After the interviews, have students switch roles for a new round of interviews.
5. Engage in a class discussion where students reflect on the insights gained from the interviews.

## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- How does biotechnology help more than just rare genetic diseases in healthcare and medicine?
- What are some important things we should think about when using biotechnology for medical research and treatment in our society?
- How does biotechnology affect new inventions and technology in fields other than healthcare, and what could happen in our society because of it?
- 

## EXTENSION ACTIVITIES

Optional: students can do short research into genetic illnesses (assigned by the teacher) and share their results.



# LESSON PLANS

## BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



### UNIT 6

# ANIMAL LIVING

## TOPIC 6.1: FACTORY FARMING



## TOPIC

# FACTORY FARMING

As consumers, we share responsibility for the state of animal production and food processing. Through our consumption habits, we maintain a certain production process and indirectly cause unnecessary suffering to many living beings. Besides, a substantial proportion of the world's sustainability and health challenges arise from industrial livestock production and its use of huge quantities of cereals and soy as animal feed. Deforestation, land use change, soil degradation, biodiversity loss, water overuse and pollution, and greenhouse gas (GHG) emissions are some of the consequences of the current farming and food system that is known as factory farming. It is right that we should inform ourselves about where certain food comes from and how the animals' lives have been cared for. We should insist on traceability of information about the entire life cycle of the animal and the production route of the product we buy. We are not sufficiently aware of the power and responsibility we have as consumers to raise the ethical level of our relations with animals. If we were to consciously support those producers who make an effort to ensure that farmed animals have decent living conditions and that their killing is carried out painlessly, then we would gradually change the trends in animal husbandry. Of course, this means that we would have to pay a fair price for the meat, which would be once again higher than the current price.

## LEARNING OUTCOMES / OBJECTIVES

- To demonstrate knowledge about the interaction between animals and the environment
- To explore the level of responsibility human beings, have for animals and nature as a whole.
- To understand what ethical treatment of animals is and how it is related to different human survival needs.
- To accept responsibility for the fact that their personal decisions impact the welfare of animals and the environment.
- To develop a critical overview on personal relationship with animals and animal consumption.
- To be able to apply bioethical principles in protecting the interests of animals.
- To be able to engage in a debate about the interests of animals.



## DURATION

**2 class hours (approximately 80 min.)**

## MATERIALS

Triangle-shaped picture for each student (see warm-up activity); pictures representing factory and traditional farming

## BACKGROUND (WARM-UP / MOTIVATION) 10 MINUTES

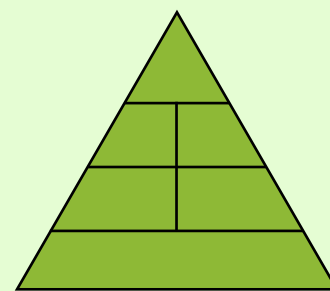
### Actividad de calentamiento:

- Teacher shares the following image with students and asks them to write what they eat regarding their quantity. The ones they eat most goes to the bottom while the least they eat goes to the top.

- After getting some responses from students about their eating habits, teacher shows the original food pyramid (pic.1) to students and they talk about the shape of the image:

*"We all need the food in this pyramid to be healthy, but **the amounts** are different for each category. We should eat more vegetables but less sweets, more cereals but less meat etc."*

- Students compare their pyramid to the original one focusing on the differences.
- Teacher asks students where all our food comes from and assists them to give the answer "farms" to lead them to the topic of factory farming.



## MATERIALS

- Teacher encourages students to briefly share any experiences they've had visiting farms, seeing animals raised for food, or learning about agriculture. This can provide insight into their existing knowledge and perceptions of farming practices.
- Teacher shows two pictures for the students to choose the one that is similar to the image of a farm in their minds. Teacher explains that both pictures are farms, but the methods applied are different; one representing factory farming, the other one traditional farming.
- Students are put in groups of 4 to discuss and share how they feel seeing the picture of a factory farm, how the images impact their perspective, what they know about these farms etc.

**Fact or Myth?:** Teacher presents students with a series of statements related to factory farming, some of which may be true and others false or exaggerated; and students discuss in their groups whether they believe each statement is a fact or a myth. This activity can be followed by a class discussion to clarify misconceptions.

- Students watch a video called MEATRIX (<https://www.youtube.com/watch?v=IMOAcieER6o>) to check what they have discussed in the previous activity (fact or myth).
- Teacher asks: "Why do we have factory farming? What was wrong or missing with traditional farming methods?" to encourage students to approach the topic critically. Receiving some comments from students, teacher explains that *farming methods in the last 50 years have changed rapidly as a result of the increasing **demand** for the consumption of animal products*, and shares a table about **Global Animal Products Consumption** with the class (pic. 4) to analyze and discover possible reasons that have increased the need for factory farming, which can be stated as a-overpopulation and b-modern conveniences (technology).
- *Every action has its pros and cons.* The class is divided into two so that they can focus on either advantages or disadvantages of factory farming within their small groups.

The following questions may help them:

What kind of benefits will this new technology bring to a community?

Does factory farming lead to sustainable practices?

What problems do you see with factory farming affecting the ecosystem?

What kind of pollution will be caused?

## PROS

- Cheap meat production
- Rather uncomplicated for farmers (easy & practical)
- High profits
- Space optimization
- Processes around factory farming are optimized
- Ensures large variety of meat products
- Fast meat production
- High level of automation
- May strengthen the local economy
- Meat supply for large number of people
- Almost no geographic limitations
- Meat production all year long



## CONS

- Animals are treated quite poorly
- Animals might bully each other
- Low-quality meat
- Animals are raised to unnatural growth
- Fast family separation (for animals)
- Some animals are killed solely due to their gender
- Unnatural form of animal raising
- Genetic engineering might be used for factory farming
- Fraction of fat in the meat is quite high
- Meat may be contaminated with antibiotics
- High level of water consumption
- Soil pollution
- Groundwater pollution
- Global warming
- Job losses through automation

(optional video about factory farming):

<https://www.youtube.com/watch?v=9yVcZT0Sa0k&t=8s>

## IMPLEMENTATION / PRACTICE 40 MIN.

### Scenario-based Case:

Martin comes from a family with four generations of farmers. He loves taking care of the animals and working on the farm. But he finds that using traditional methods is hard and takes a lot of time, so he wants to switch to more modern ones. He did some research and found that it would be a good idea to start factory farming by using modern technology to make his work easier and produce more in less time. This would also give him more time to spend with his family. On the other hand, he knows that this plan could lead to some bad consequences, like animals being kept in small, dirty places and the process damaging the water, land, and air, which are all important for healthy living. He can't make up his mind. Martin wants to run his farm so well that it saves him time, treats the animals well, helps the environment, and makes money.



*Should Martin go on with the traditional way of farming or switch to the modern one?*

*Is it possible to find a way to balance the welfare of animals and environment and consumers' desire for cheap meat, milk and eggs?*

#### DEBATE:

- Teacher makes three groups in class.
  - » Group 1 consists of students who answer the above question as traditional farming.
  - » Group 2 with students supporting factory farming.
  - » Group 3 with students who believe that it is possible to find a way between.
- Teacher writes the following question on the board and asks students to keep this in their minds while discussing within their groups: **"Who and what will be affected in the short and long term?"** They work on the issue to debate. During the debate, it is important that each group has equal time to present their arguments.

## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- Have you ever considered the conditions in which animals are raised for food? How does this influence your food choices?
- Do you think about the environmental impact of the foods you consume? How might your preferences contribute to issues like deforestation, water pollution, or climate change?
- How do your current food preferences align with your long-term health goals? Are there any adjustments you would consider making to improve your overall well-being?
- How informed do you feel about the consequences of your preferences? Are there any areas you'd like to learn more about before making decisions?
- What steps could you take to align your preferences with more positive outcomes?
- What are some of the ethical considerations involved in raising animals for food, and how do different perspectives on animal welfare influence the debate?
- What are some of the environmental impacts of factory farming, and how do these relate to broader sustainability concerns?



- What are some of the alternatives to factory farming, and how feasible are these from a social, economic, and ecological perspective?
- What are some of the policy options for addressing the challenges of factory farming, and what are the trade-offs involved in each approach?

## EXTENSION ACTIVITIES

1. Poster Design: Teacher may ask students -if interested in- to prepare posters to raise awareness among their friends at school about the topic.
2. Food Diary Analysis (personal reflection): Teacher can ask students to keep a food diary for a few days, noting down the types of foods they consume and where those foods come from. Then, students research the production methods associated with those foods and thus consider the implications of their choices.
3. Students may do the following quiz to see how our preferences affect the environment.

<http://www.eatlowcarbon.org/>



# LESSON PLANS

# BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



## UNIT 6

# ANIMAL LIVING

## TOPIC 6.2: ANIMAL TESTING / EXPERIMENTATION



## TOPIC

# ANIMAL TESTING / EXPERIMENTATION

Advances in medicine and pharmaceuticals are all due to animal experimentation, as every innovation is first tested on animals and then on humans. The fundamental ethical question is what criteria can be used to decide that the benefits to humans of the results of experiments can outweigh the pain and harm caused to the experimental animals. Experimentation on animals can only be carried out when there is no other way to arrive at the necessary knowledge for human health. In addition, there must be reasonable assurance that the experiment will be successful and that it will make a significant contribution to medical or pharmaceutical progress. Concern for the welfare of the animals before and after the experiment is also very important. The principles of the triple R: replacement - reduction - refinement still apply to decisions on animal experimentation. Wherever possible, animal experimentation should be avoided and replaced by alternative research methods (today often computer simulations). Where this is not possible, efforts should be made to reduce animal experimentation, i.e. to carry out only those experiments that are necessary. The third criterion reminds us of the welfare of the individual animal in the experiment and requires us to do everything we can to continuously improve experimental procedures and, as far as possible, to reduce animal suffering.

## LEARNING OUTCOMES / OBJECTIVES

- To explore an ethical dilemma related to using animals for scientific progress leading to societal well-being.
- To apply the ethical principles in the concrete case of animal experimentation.
- To explore the level of responsibility human beings have for animals.
- To accept the responsibility of humans for animal welfare.
- To accept responsibility for the fact that their personal decisions impact the welfare of animals and the environment.
- To develop a critical overview on personal relationships with animals.

## DURATION

**2 class hours (approximately 80 min.)**

## MATERIALS

Pictures of animals (for each student), a table for discussion

## BACKGROUND (WARM-UP / MOTIVATION) 10 MINUTES

### Warm-up (a mindfulness activity):

The goal of this mindfulness activity is to create a calm and receptive atmosphere, helping students engage with the upcoming topic in a more focused and open-minded manner.

Teacher distributes images of various animals to each participant (mice, rabbits, monkeys, guinea pigs, dogs, cats, fish, amphibians, insects, birds etc), then asks everyone to find a comfortable sitting posture, close their eyes and take a few deep breaths to settle in. Students open their eyes and gently look at the image of the animal they have without any rush. As they look at the image, the teacher asks them to focus their attention solely on the animal by noticing its shape, color, texture and any distinctive features. Teacher should invite students to observe the animal as if they are seeing it for the first time, without judgment or preconceived notions. Teacher tells students to imagine the life of the animal, its habitat, behaviors, interactions with its environment and its role in our lives - as companions, sources of food, subjects of experimentation etc. After a few minutes of observation, everyone closes their eyes again to reflect on their thoughts and emotions during observation: "What did they think and feel? Did they feel any connections to the animal? Did any thoughts about bioethical issues related to animal experimentation arise?" Teacher opens the floor for a brief discussion so students can share their experiences, thoughts and emotions that came up during the activity.

## PRESENTATION 15 MINUTES



**SAVE RALPH  
(vídeo)**





- Teacher provides a brief overview of what animal experimentation is and its historical context, emphasizing its role in scientific research and medical advancements. "The use of animals in scientific research has been a contentious issue for decades. While some argue that animal testing is necessary to advance medical research and develop new treatments, others claim that it is cruel and inhumane. This dilemma raises important ethical questions about the value of animal life and the importance of scientific progress."
  - On one hand, it is described as the only way "to learn more about health problems that affect both humans and animals, and to assure the safety of new medical treatments"
  - On the other hand, it is a procedure "... that causes an alteration on the animal's well-being with the likelihood of causing it pain, suffering, anguish or discomfort."
- In groups, students do research about the two opposing views on animal experimentation, and then present their premise with facts and examples to the class.

## IMPLEMENTATION PRACTICE 40 MINUTES

### Scenario-based Case:

Dr. James Mitchell, a researcher at a leading pharmaceutical company, was tasked with developing a new drug to treat a rare genetic disorder. The drug had the potential to save thousands of lives, but it needed to be tested extensively before it could be approved for human use. Animal testing was deemed necessary to assess the drug's safety and efficacy.

Dr. Mitchell's team used mice for the drug trials. The mice were genetically modified to develop the same genetic disorder as humans. The first few tests were successful, and the drug showed promising results. However, as the testing progressed, the team encountered unexpected side effects. The mice began to suffer from a range of symptoms, including weight loss, loss of fur, and seizures.



The team was faced with a difficult decision. Should they continue the testing, hoping to find a solution to the side effects, or abandon the project altogether? Dr. Mitchell knew that abandoning the project would mean giving up on finding a cure for the genetic disorder, which would be devastating for the patients and their families. On the other hand, continuing the testing would mean subjecting the mice to more suffering.

*If you were a member of this team, would you go on testing or stop it?  
Why / Why not?*

#### SUGGESTED ACTIVITY:

Teacher asks the above question to the class and divides them into two according to their responses. Group 1 consists of students who prefer to go on testing and Group 2 consists of the ones who chooses to stop the experiment. Considering the harms and the benefits, students discuss the above question:

Magnitud of Harm on Animals	Benefit to Humans: Small	Benefit to Humans: Medium	Benefit to Humans: Large
Small			
Medium			
Large			
Unknown			

## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- Have you ever had a pet or encountered animals in your daily life? How does your personal experience with animals influence your perspective on animal experimentation?
- Do you think the ethical considerations around animal experimentation vary across cultures and regions? How might cultural values influence attitudes toward this issue?
- Is it ethical to use animals for scientific testing?



- How much suffering is acceptable for animals in scientific research?
- Should animal testing be conducted if there is a chance of significant harm to the animals?
- How do we balance the potential benefits of scientific research against the harm done to animals?
- Are there alternative methods of testing that could be used instead of animals?
- Is it ethical to genetically modify animals for the purpose of scientific research?
- How do we determine the value of animal life in relation to scientific progress and human well-being?
- Should researchers be held responsible for the suffering caused to animals during scientific testing?
- How do we ensure that animal testing is conducted in an ethical and humane manner?
- Should society prioritize the welfare of animals over the potential benefits of scientific research?

## EXTENSION ACTIVITIES

1. Create a motto / hashtag for animal testing (either for or against) and start a campaign on social media to raise awareness.
2. Prepare a poster on whether animal experiment is necessary or not.
3. Survey and Analysis-Public Opinion on Animal Testing: Students design and conduct a survey to gather opinion from peers, family, or the community on animal testing. Later they analyze the results and discuss implications.

## ADDITIONAL RESOURCES & USEFUL LINKS

- <http://www.physiology.org>
- <https://www.intechopen.com/chapters/59654>
- <https://www.physiology.org/career/policy-advocacy/animal-research/Why-do-scientists-use-animals-in-research>
- <https://weanimalsmedia.org/our-work/featured-gallery-animals-research>
- <https://www.altex.org/index.php/altex/article/view/1107>



# LESSON PLANS

# BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



## UNIT 7

# MINIMALIST LIVING

## TOPIC 7.1: RICH LIFE WITH LESS STUFF



## TOPIC

# RICH LIFE WITH LESS STUFF

**The minimalist lifestyle means** living with the minimum number of resources that are necessary for a quality and healthy life. People should determine what gives them the most value and discard the rest as superfluous. The idea **is to reduce the things that are owned**, to open more space both physically and mentally for the things that are really important to people. A minimalist lifestyle is a choice not to spend more resources than necessary and to focus only on the things that are meaningful and give life meaning. For many people to deprive themselves of the abundance of objects, products, services in the modern consumerist society may seem unimaginable. However, the number of people living according to the principles of minimalism is growing. People choose to live minimalistic lives in order not to overload themselves with unnecessary clutter, not to be distracted from what is really important to them, and in order to reduce living expenses. Because of the minimalist life, **people have more time to devote to their loved ones, family, friends, and community**, but because they use less resources, they also pollute the environment less.

## LEARNING OUTCOMES / OBJECTIVES

- To understand the concept of minimalist living.
- To know about the ecological limits of the planet.
- To be able to engage in discussion about the relationship between bioethics and minimalist living.
- To be able to collaborate with other to promote minimalist living.
- To be mindful of the future generations' need.
- To respect the autonomy of individuals in choosing their own lifestyle.

## DURATION

**2 class hours (approximately 80 min.)**



## BACKGROUND (WARM-UP / MOTIVATION) 10 MINUTES

### Warm-up Activity

- Teacher shows images of cluttered spaces and minimalist spaces side by side and asks students to jot down words or emotions that come to their minds when looking at each image. Teacher starts a small class discussion comparing their responses and the differences in perception.
- 30-second Declutter Challenge: Teacher sets a timer for 30 seconds and challenges students to quickly declutter their desks or a small section of their space. This hands-on activity encourages them to take action and experience the immediate impact of simplifying their surroundings.

## PRESENTATION 15 MINUTES

- Teacher shares some quotes about minimalism and asks students to reflect on the meaning of the following quotes and discuss why they agree or disagree.

- » Simplicity is the ultimate sophistication. (Leonardo Da Vinci)
- » Minimalism isn't about owning less than you need. It's about owning exactly what you need. (Joshua Becker)
- » The secret of happiness ... is not found in seeking more, but in developing the capacity to enjoy less. (Socrates)

More: <https://www.invajy.com/minimalist-quotes/>

• After discussing the quotes, the teacher asks students to express their understanding of minimalist living. Receiving their responses, teacher provides a clear and concise definition of minimalist living by explaining that it's about intentionally simplifying their life by focusing on what truly matters and letting go of excess. "The minimalist lifestyle means living with the minimum number of resources that are necessary for a quality and healthy life. People should determine what gives them the most value and discard the rest as superfluous. The idea is to reduce the things that are owned, to open up more space both physically and mentally for the things that are really important to people."

• Teacher asks students to choose one item from their bag or desk and share a brief story about it - where they got it, why it's special, etc.; and encourages students to reflect on whether they would be willing to let go of that item as part of a minimalist lifestyle.

• Teacher introduces the four key principles of minimalism: Reduce, Reuse, Recycle, Refuse by explaining each principle and how they contribute to a minimalist lifestyle.

# IMPLEMENTATION PRACTICE

## 40 MINUTES

### Scenario-based Case:

Michele is turning 18 in a few months, and he has been thinking how to celebrate his birthday for a while. He is a very shy boy, and it is very difficult for him to mix and join with all his classmates, especially the coolest and smartest ones of the class. Organizing a

unique and successful party might be the occasion for him to draw people's attention to him and be accepted and appreciated by the other teenagers. So first he talks to an 18-birthday planner to arrange a venue rental, catering with lots of food and drinks, fireworks and decorations such as garlands and balloons, a professional photographer and a DJ.

Secondly, he asks his parents for the latest version of iPhone as a gift because many of his schoolmates have it. However, his parents say that the budget available for his party is not enough. Therefore, his father is ready to work extra hours, but it is necessary to cancel the English course in London booked for him some months ago. Finally, he decides to talk with his best friend and comes up with a second option: He can have the party at home, offer pizza and drinks, asks friends to take pictures and select good music. As regards the gift he can buy a cheaper version of iPhone and join the English course in London. In addition, he can spend more time with his father as he is not obliged to work harder. Michele is very confused and doesn't know what to do.

### *Should Michele organize the expensive party or the cheaper one?*

- The teacher can form the groups according to their responses to the above question: the ones supporting Michele should organize an expensive party and the others supporting the cheap one. Students should state their point of view with reasons. Here are some examples:

#### **EXPENSIVE PARTY**

- He can feel self-confident and adult.
- He can impress his classmates.
- He can integrate into his group class and make new friends.
- He deserves a unique party and expensive gifts because he is turning 18.
- He can be sure of having good pictures and good music with a professional photographer and a DJ.

#### **CHEAP PARTY**

- His father doesn't work extra hours and can spend more time with him.
- He spends money for more important things such as the English course in London.
- No waste of food and drinks.
- No waste of plastic and paper.
- To make new friends you don't need to impress them.



- Teacher can have the students play out the situation and assign them roles in the story. One student can play the role of Michele, other students play his mother, his father, the party planner, Michele's best friend and roles like DJ, photographer, some classmates can be added. Students can play out the scenario and other students observe. After the role-play the observing students can offer their remarks, what they noticed and then the students who played the roles can explain how they felt defending their positions.

## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- Do material things make us happier?
- Is appearance more important than personality?
- Do you think that more stuff makes you richer?
- What challenges do you foresee in adopting a minimalist lifestyle?
- How might minimalism positively impact your academic and personal life?
- What areas of your life could benefit from simplification?
- When was the last time you wore everything in your wardrobe? Are there clothes that you could consider donating or selling?
- How does the concept of a capsule wardrobe, with fewer but versatile clothing items, resonate with you?
- Can you identify instances when you bought something because of trends or societal pressures rather than personal desire?
- How does your consumption and disposal of goods impact the environment? Are there ways you could reduce waste or choose more sustainable options?
- How might adopting a minimalist approach to consumption contribute to a healthier planet?





## EXTENSION ACTIVITIES

1. Teacher can assign students a “minimalist living experiment” where they choose a specific area of their life to simplify. It could be their wardrobe, digital spaces, or daily routines. They can document their experiences, challenges, and insights over a week or two, and then share their findings with the class.

2. TED-Style Talks: Teacher can assign each student or small groups a specific aspect of minimalist living (e.g., decluttering, ethical consumerism, digital minimalism) and have them prepare short TED-style talks to present to the class, which will encourage research, presentation skills, and deeper understanding.

## ADDITIONAL RESOURCES & USEFUL LINKS

- <https://www.invajy.com/minimalist-quotes/>



# LESSON PLANS

# BIOSEM

Bioethics and Sustainable Environmental Management at schools  
2022-1-SI01-KA220- SCH-00008642



## UNIT 7

# MINIMALIST LIVING

## TOPIC 7.2: SHOPPING ... HOW POWERFUL IS IT?



## TOPIC

# SHOPPING ... HOW POWERFUL IS IT?

**The minimalist lifestyle means** living with the minimum number of resources that are necessary for a quality and healthy life. People should determine what gives them the most value and discard the rest as superfluous. The idea **is to reduce the things that are owned**, to open more space both physically and mentally for the things that are really important to people. A minimalist lifestyle is a choice not to spend more resources than necessary and to focus only on the things that are meaningful and give life meaning. For many people to deprive themselves of the abundance of objects, products, services in the modern consumerist society may seem unimaginable. However, the number of people living according to the principles of minimalism is growing. People choose to live minimalistic lives in order not to overload themselves with unnecessary clutter, not to be distracted from what is really important to them, and in order to reduce living expenses. Because of the minimalist life, **people have more time to devote to their loved ones, family, friends, and community**, but because they use less resources, they also pollute the environment less.

## LEARNING OUTCOMES / OBJECTIVES

- To be aware of the meaning of minimalistic living.
- To be aware of the bioethical justification of minimalist living.
- To be aware of the importance of the decisions of everyone for the preservation of the biological balance of the planet.

## DURATION

**2 class hours (approximately 80 min.)**



## BACKGROUND (WARM-UP / MOTIVATION) 10 MINUTES

### Warm-up Activity:

The teacher asks participants to take a few minutes to reflect silently on the following questions:

- What role does shopping play in your life?
- How often do you shop, and what do you typically buy?
- Do you ever shop for reasons other than necessity (e.g., for emotional comfort, social status, etc.)?

Students watch a trailer from the movie "**Confessions of a Shopaholic**" and speculate about the topic of the lesson and the problems it arises.

<https://www.youtube.com/watch?v=d-jE5WJ7J28>

## PRESENTATION 20 MINUTES

The teacher facilitates a discussion based on open-ended questions:

- What are some positive effects of shopping on individuals and the economy?
- What are some negative consequences of excessive shopping?
- How does advertising influence our shopping habits?
- What role does peer pressure play in our shopping choices?

The teacher divides the class into small groups and assigns each group a specific aspect of shopping to explore further. For example, one group can focus on the environmental impact, another on the psychological effects, and so on.

In their groups, students should research and discuss their assigned topic, then prepare a brief presentation or discussion points to share with the class.



## IMPLEMENTATION PRACTICE 40 MINUTES

### Scenario-based Case:

Lisa is a 16-year-old girl, whose favorite hobby is shopping. Sure, she does some other things, like going to the movies, taking walks, working out, and reading, but none of those pastimes occupies nearly as much of her time and attention as shopping.

Shopping is her go-to activity. If she has some extra time, she goes shopping. If she wants to avoid doing something – or thinking about something, she goes shopping. If she needs an emotional boost, she goes shopping. The list goes on and on ... shopping is fulfilling for her. Sure, it brings some excitement to her life. There is a certain thrill in the new and in finding good “deals.” She also enjoys being out and about and interacting with salespeople and other shoppers. She wants to believe that the salespeople who recognize her and ask her questions about her life are friends of a sort. She does not have a best friend and that’s fine for her.

Today she got a bad mark in the math test. She is really upset, and she fears her parents. What should she do?

*How can she feel better? Should she go shopping or should she see a friend? Should she go and talk with her math teacher, or should she go shopping?*

### SUGGESTED ACTIVITY 1 (10 MIN):

Write about something you bought but never used (or have rarely used). In your answer, you could include some of the following topics:

- What it is?
- Why you bought it?
- Why you haven't (or have rarely) used it?

### SUGGESTED ACTIVITY 2

These days, people buy too many things that they do not need or want. What are the reasons people buy things that they will never use? What are the problems associated with this?

Can you think of ways to stay in control about your spending and buying habits? Or ways to help a person?



## REFLECTION / ASSESSMENT 10 MINUTES

Teacher can choose from the following questions or generate his/her own for the reflection/assessment part:

- What is your takeaway of the above discussed topic? What issue memories do you have?
- Coming up with the next big holiday, how are you going to consider your shopping habits?

## EXTENSION ACTIVITIES

Discuss questions with students:

1. Do material things make us happier? Does shopping have the power to heal a disease?
2. Is appearance more important than personality?
3. Do you think that more stuff makes you richer?
4. Can you see the impact of influencers on your lifestyle?