Green STEAM Incubator

The "Green STEAM Incubator" ***Learning Activities Handbook***

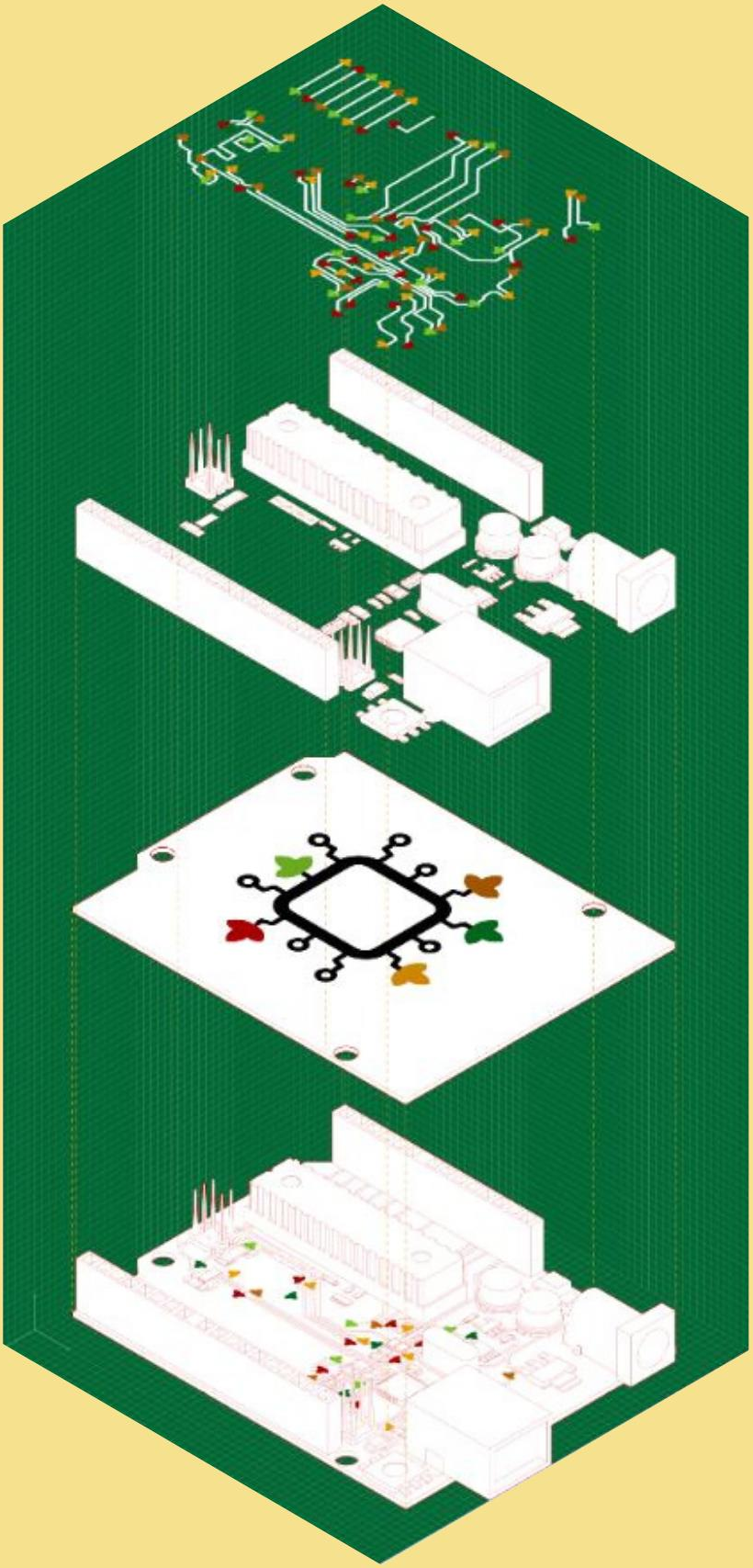

TABLE OF CONTENT

1. BEE PROTECTION

PEDAGOGICAL OBJECTIVE:

General objective

Understanding the importance of bee protection for the ecosystem.

Specific objectives

- Understanding the importance of bees for life on the planet.
- Identifying the causes of the disappearance and death of bees.
- Identifying the measures that can be taken for the protection of bees.
- Knowing bee protection programs.

KNOWLEDGE ELEMENTS:

The majority of people run away when they see a bee, because they are afraid of being stung. But, in fact, bees are much more than mere insects who sting people. A bee is an animal that is essential to the quality of the food that we, humans, and other animals eat, due to their prominent role in the process of pollination, which fertilizes vegetables, fruits and crops. So, without bees, the quality of the food would decrease considerably.

Bees are also intelligent animals. They have established, between themselves, a move called "waggle dance", that is performed when a bee wants to tell its nestmates where to find the best food.

Learn more from:

1. Leaflet about the importance of bees for the ecosystem.

2. Extra material:

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- European Commission Website. (2020). EU Pollinator Information Hive. Obtained from https://wikis.ec.europa.eu/display/EUPKH/EU+Pollinator+Information+Hive
- European Commission Website. #EUPollinators: small, precious and in need of protection! Obtained from https://ec.europa.eu/environment/nature/conservation/species/pollinators/index_en.htm
- European Parliament Website. (2018). Bees and beekeepers: MEPs set out EU-wide long-term survival strategy. Obtained from https://www.europarl.europa.eu/news/en/press-room/20180226IPR98612/bees-and-beekeepers-meps-set-out-eu-wide-long-term-survival-strategy
- Save Bees and Farmers Website. Obtained from https://www.savebeesandfarmers.eu/eng

METHODOLOGY OF THIS TREASURE HUNT

Before:

- Make a pamphlet about the importance of bees for the ecosystem.
- Prepare 12 hexagons together (like Honeycomb, you can make them from carton for example)
- Prepare a place where there are 5 doors with 5 keys – can be in building or outdoor
- Make the 6 QR codes that correspond to the questions.
- Have 5 lockable boxes with key padlocks and 5 keys.

After: "debriefing session"

Interaction with participants through discussion, using the following questions:

- How was this experience?
- Which part of the experience did you enjoy the most?
- What was the most challenging part of the experience?

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- Did you know about the problem of bee decline and the consequences for the ecosystem?
- What new knowledge did you gain from this experience?
- What steps will you take from now on to promote bee protection?

REQUIREMENTS

- Level of learners: Basic.
- Material: Smartphone, QR codes.
- Wi-fi access.
- Space: Outdoor.
- Two compasses.
- Time: 30 minutes – 60 minutes for the activity and 30 minutes to watch the video.

DESCRIPTION OF THE ACTIVITY AND CLUES

Participants, divided into two teams of five, receive the pamphlet on the importance of bees for the ecosystem (from one of the participants) and can use a mobile phone. They will also receive a paper with the first QR code that they must use in order to be directed to the first question; the instructions appear alongside the answer.

If participants select a wrong answer, they will not be notified that it is wrong and they will receive instructions that are pretending to be true, but are, indeed, wrong leads. If the participants are on the wrong track, they will not know until the end.

Example: If a team follows three right leads and the other one follows four, the latter wins.

QUESTIONS AND CLUES TO PUT IN ENVELOPES:

Question 1: **How important are bees to the ecosystem?**

ANSWERS (THE RIGHT ONE IS UNDERLINED):	INSTRUCTION
Bees are responsible for increasing soil pollution.	Go to the nearest garden and find the box with the key.
Bees are responsible for the decrease in biodiversity, which causes the extinction of species.	Go to the farmland and find the box with the key.
Bees are responsible for the sustainability of biodiversity, which is essential for a wide variety of crops and plants.	Go to the vase with flowers and find the box with the key.
Bees are responsible for increasing tropical storms in the Northern Hemisphere.	Go to the nearest water source and find the box with the key.

Clue (displayed alongside the questions and the answers): Bees help plants to reproduce, by turning flowers into fruit.

After answering the question correctly, the participants should go to the indicated place, where they will find a box with a key, which opens the door (the boxes with keys should be near the doors) number 1.

On door number 1, the participants will find a new QR code that they should scan to be directed to the second question:

Question 2: **What products are produced due to the pollination of bees?**

ANSWERS (THE RIGHT ONE IS UNDERLINED):	INSTRUCTION
Almonds, jewellery and varnishes.	Follow 300 steps north and search the box with the key.
Coconut, wood and makeup.	Follow 300 steps south and search the box with the key.

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Medical collateral, fruit and glass.	Follow 300 steps east and search the box with the key.
Honey, fruits, medicines.	Follow 300 steps west and search for the box with the key.

Clue: Most crops that grown in the European Union depend on pollination by insects.

After answering the question correctly, participants should go to the indicated place, where they will find a key, which opens door number 2.

On door number 2, participants will find a new QR code that they should scan to be directed to the third question:

Question 3: **What are the likely causes for the decline in bees?**

ANSWERS (THE RIGHT ONE IS UNDERLINED):	INSTRUCTION
Sea level rise, organic farming and recycling.	Go to the farmland and find the box with the key.
Use of pesticides, pollution and climate change.	Go to the farmhouse warehouse and look for the packaging of the pesticides, beside it will be the box with the key.
Animal protection, reforestation and water pollution.	Go to the nearest water source and find the box with the key.
Use of pesticides, organic farming and recycling.	Go to the recycling bins, next to the door is the box with the key.

Clue: The causes are of human origin and are all negative.

After answering the question correctly, the participants should go to the indicated place, where they will find a key, which opens door number 3.

On door number 3, the participants will find a new QR code that they should scan to be directed to the fourth question:

Question 4: **What measures should be taken, regarding the use of pesticides in agriculture?**

ANSWERS (THE RIGHT ONE IS UNDERLINED):	INSTRUCTION
Reducing the use of pesticides and prohibiting the use of certain active toxic substances in pesticides.	Go to the farm manager and tell him the answer, if it's the right one, he/she will give you the box with the last key.
Maintaining the use of pesticides and increasing the use of certain active toxic substances in pesticides.	Go to the farm manager and tell him the answer, if it's the right one, get the box with the key.
Increasing the use of pesticides and prohibiting the use of certain active toxic substances in pesticides.	Go to the farm manager and tell him the answer, if it's the right one, get the box with the key.
Decreasing the use of pesticides and increasing the use of certain active toxic substances in pesticides.	Go to the farm manager and tell him the answer, if it's the right one, get the box with the key.

Clue: Pesticide residues can be absorbed by bees during the collection of nectar and/or pollen and water. These products are toxic to bees and can lead to death.

After answering the question correctly, the participants should go to the indicated place, where they will find a key, which opens door number 4.

On door number 4, the participants will find a new QR code that they should scan to be directed to the fifth question:

Question 5: **What can be done, on a daily basis, to protect bees?**

ANSWERS (THE RIGHT ONE IS UNDERLINED):	INSTRUCTION
Consuming organic food, buying imported products and polluting the environment.	Go to the facilitator and tell him the answer, if it's the right one, you will get the box with the key.
Recycling and increasing water consumption.	Go to the facilitator and tell him the answer, if it's the right one, you will get the box with the key.
Protecting animals and cutting down trees.	Go to the facilitator and tell him the answer, if it's the right one, you will get the box with the key.
<u>Consuming organic food, buying products of local origin and being environmentally friendly.</u>	Go to the facilitator and tell him the answer, if it's the right one, you will get the box with the key.

Clue: The actions must be green and organic.

After answering the question correctly, participants should go to the indicated place, where they will find a key, which opens door number 5.

At door number 5, participants will find a new QR code, that they should scan to be directed to a video documentary, titled "Keep the Hives Alive".

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Behind door 5, there will also be a bowl with fruit (choose fruit that depends on pollination - examples: raspberries, strawberries, peaches, apples, etc.). This is the end of the activity.

After the activity, participants will meet with the facilitator for the debriefing session.

DECRIPTION OF THE REWARD:

Video documentary "Keep the Hives Alive".

Available at https://www.youtube.com/watch?v=2DSODl2vjoQ .

GAMIFICATION ELEMENTS

Specific rules: Participants should use their mobile phone in case of doubts (but lose points if they search for other things other than topics related to the question)

Number of steps: 6

Point system: Each step contains a question that corresponds to 20 points if answered correctly. If participants consult the mobile phone and/or the facilitator for something other than the question and the instructions, they lose 2 points for each request.

Rewards: Each team that obtains 100 points receives a pot of European produced honey; if no team reaches 100, the honey goes to the team with the highest score.

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GRAPHIC MATERIAL TO PRINT

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Are you a person that sees a bee only as a frightening animal?

They are much more than that!

Bees are an extrememely important animal to the quality of the humans' and the animals' food. According to the World Wide Fund for Natyre (WFF), approximately 90% of wild plants and 75% of leading global crops are dependent on the process of animal pollination. Bees are one of the most importants pollinators, and without them the quality of our food would decrease.

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Here are some facts about bees:

They have four wings. When they are flying, the two wings on the side hook together, so it seems like they have only two.

The bees living in the hives are divided into three categories. There is the Queen, the Drones and the Workers.

If the Queen dies, the Workers replace her by selecting a young larva. They feed this baby insect with "royal jelly", a food that enables them to evolve into a queen.

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If you are curious and want to know more about bees and other related subjects, search for the *Green STEAM Incubator* project by clicking the following links:

https://steam-incubator.org/

facebook.com/greenSTEAMincubator

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2. CONSCIOUS CONSUMERISM

PEDAGOGICAL OBJECTIVE:

Learning about how to consume consciously, keeping in mind the environmental, social, ecological and political impact.

KNOWLEDGE ELEMENTS:

Conscious consumerism is when a consumer considers the social, environmental, ecological, and political impact before buying a product or a service. It also includes boycotting products or services that have a negative impact on the environment, society etc. Conscious consumerism is also intertwined with reducing excessive consumption and material possessions.

An early definition of conscious consumerism was made in a 1957 study by Webster, according to whom a socially conscious consumer is: 'a consumer who takes into account the public consequences of his or her private consumption or who attempts to use his or her purchasing power to bring about social change.' (Ward, 2018)

Therefore, conscious consumerism focuses on making positive decisions throughout the buying process. Using consumers' purchasing power to consider the impact made, conscious consumerism's main aim is to help balance some of the negative impacts that it has on the environment.

It promotes sustainable farming and other eco-friendly ways of making products and creating the amount that is needed.

Conscious consumers want to use their individual actions to help create global impact. ("What Is Conscious Consumerism?," 2018)

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METHODOLOGY

Before

- Prepare the letters for the word "C O N S C I O U S" x 2 (9x2 letters in total; for the blue team, the letters will be written on blue paper and for the red team on red paper). The facilitator needs to place/hide the letters around the farm.
- Prepare envelopes of two colours: blue and red. Blue envelopes are for team 1 and red envelope for team 2. There are **8 envelopes in total**: 2 envelopes (one blue and one red) will contain the 1st Clue, 2 envelopes (one blue and one red) will contain the 2nd Clue, 2 envelopes (one blue and one red) will contain the 3rd Clue and 2 envelopes (one blue and one red) will contain the 4th Clue.
- Print all clues (5x2 clues in total) and place 4x2 in the envelopes and 1x2 are to be handed out at the beginning.
- Fill a bucket with water
- Prepare a bell for step 3 / 2nd clue
- Place a leather bag on a tree
- Put tree and flower seeds in two different envelopes (one blue and one red)
- Place gardening tools and water near the "soil" and "flower"
- Bury a tin/sustainable box in the soil containing envelopes 4.

After "debriefing session"

- The participants open the box which contains the envelopes. There is one final envelope for each team player with a reward.
- Each envelope contains an example of ethical and non-ethical business practices (number of envelopes to be specified by the number of participants).
- Debriefing discussion – suggestion of questions in the end of the activity description.

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DESCRIPTION OF THE REWARD

The facilitator should place seeds in small boxes (number of boxes depends on the number of participants) for each team participant. The boxes contain vegetable seeds to plant at home for each team member (everybody gets a reward).

REQUIREMENTS

- Level of learners: Basic
- Material: paper, envelopes, boxes, seeds, water, pens, gardening tools, leather bag, bucket, water, seeds in individual eco-friendly packaging
- Space: Outdoor
- 75 - 90 minutes
- Group Activity

DESCRIPTION OF THE ACTIVITY

Before:

Facilitator: Welcomes the group to the starting point/farm and explains what a treasure hunt is and how it will be played. S/he explains further that this hunt will be about discovering different aspects of conscious consumerism. S/he can use the information from the knowledge point.

After: "debriefing session"

- asks the participants to form two teams, Team 1 will be the blue team and Team 2 the red team.
- informs the two teams that there are 4 envelopes for each team.
- informs the participants that there is a surprise prize in the end
- provides the time they have to complete the activity

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- provides them with relevant information about conscious consumerism (def. examples) that will be needed for the treasure hunt.
- informs them that for each correct answer a team gets one (1) point and explain what the rules for time bonus of 5 minutes are that will be given for clue 1 and 2.
- Gives participants envelope 0 with the clue on how to find envelope 1. Team 1 gets the blue envelope and Team 2 the red envelope.

The time starts when participants open envelope 0.

Envelope 0:

What does it contain: Clue on how to find envelope 1.

Example of the clue inside: The words "social, ecological, environmental, unsustainable and political" will be spelled backwards **(words will be mirrored to find the answer)** on the paper found inside the envelope along with two hints.

Hints: **a**. "This isn't a wild goose chase if you go to the place where you can see your own face."

b. Use the antonym

Where this envelope should be found: participants receive it at the starting point from facilitator.

Envelope 1:

What does it contain: Clue on how to find envelope 1.

Example of the clue inside: Each letter of the word "**C O N S C I O U S**" is written twice on a separate piece of paper and is scattered around. Use your imagination to find the letters!

Where this envelope should be found: the participants should use water (pond or a barrel) to reflect the words. Once all the words are reflected, they should realize that the word **"unsustainably"** is not an example of conscious

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consumerism. They should find the correct answer by finding the antonym of the word. For this step, the correct answer is the word "**sustainably**" and the teams should find something in the farm that can describe it (e.g. A place where they grow vegetables). The team that gets the point and bonus time is the team that finds that the answer is "sustainably" and the place or an item in the farm that describes it. At this stage, the facilitator should decide what describes best the word sustainable on the farm (depending on the farm) and should help the participants find it in order to access the next clue. Two envelopes, blue envelope (for Team 1) and red envelope (for Team 2) contain the next clue.

Explanation: The teams need to find the letters and form the word. Then, they ring a bell and the facilitator checks that they have all letters, so as to give them a point and bonus time. The team that did not find all the letters continues to search for them until all are found. The game continues with the facilitator handing out the following hint:

> **Hint:** "What has four legs but no feet and two arms but no hand?" The answer is **Chair.**

Once answered correctly the teams will be taken to the next clue.

Envelope 2:

What does it contain: Clue on how to find envelope 3.

Example of the clue inside:

Question 1: What is the definition of conscious consumerism? (3 min)

Question 2: State two examples for each of the following categories of conscious consumerism: (3 min)

1) Environment **2)** Food **3)** Animals

Sample answers: For 1) only using reusable, non-plastic water bottles, buying second-hand clothing from consignment stores, buying environmentally

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friendly products made with natural ingredients and materials. For 2) eliminating foods that contain chemicals harmful to the environment, shopping local. For 3) buy cruelty-free toiletries and cosmetics or free range egs.

Question 3: Have a look around you. Can you see an item that does not satisfy the stated definition? (place a leather bag nearby) 1 min

Where this envelope should be found: Here the clue will be stuck under a chair and will contain 3 questions. Points will be given for each correct answer (total points a team can get: 8).

(2 envelopes, one blue and one red). The facilitator (or person that helps him/her) will make sure that the questions are answered correctly. Limited time will be given to answer them. The facilitator should mention that the bonus time gained beforehand can be used here. Also, no phones or internet are allowed!

Envelope 3:

What does it contain: Clue on how to find envelope 4
Example of the clue inside: 2 envelopes that will contain seeds along with the piece of paper

– Blue Team: "It's what you need to plant a seed, it's mostly moist and brown. No need to go far, or look to the stars, in the garden it's all around." The answer is **Soil**.

– Red Team: "They grow by soaking up the sun's rays. Then they're cut and put in a vase." The answer is **Flowers**.

Explanation: The one team moves towards the (plain) soil and the other team towards the flowers.

Where this envelope should be found: The teams will go towards the leather bag to find the clue inside it. Team 1 gets the blue envelope and Team 2 the

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red envelope. – depending on what colour their team is. No points will be given for this clue.

Envelope 4 (Box):

What does it contain: envelopes with seeds (according to the number of participants) to spur the debriefing discussion.
Example of the clue inside: On the inside of the box cover, we can tape a paper saying

"Congratulations, you almost completed the hunt and are near the treasure."

Hint: Hurry up and plant the seeds before you open the envelopes and read.

Where should it be found: The envelopes can be found inside a box. The box is buried inside the soil, where the participants will plant the seeds.

Soil team: tree seeds and Flower team: flower seeds.

Finishing the activity:

After the seeds are planted and watered, the facilitator steps in and gathers everyone around. He/she counts the points of each team and announces the winner and awards both for their efforts (with seeds).

Following this, a short debriefing session starts where the group uses the envelopes to discuss in more depth the concept of conscious consumerism.

The teams will open the envelopes that they found in the tin box (there is one envelope for each person). Examples of ethical and non-ethical business practices will be written inside the envelopes. Some example of conscious consumerism: Supporting companies that:

- produce fair-trade products
- pay the workers a living wage

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- do not exploit children
- implement environmentally friendly and sustainable practices
- provide workers with a healthy working environment
- do not test on animals
- donate to charities etc.

Conscious consumerism is about boycotting companies that engage in harmful practices, such as:

- child labour
- animal testing
- violation of workers' rights
- having a negative environmental footprint
- lacking transparency
- polluting water
- misleading the customers
- overexploitation of natural resources etc.

Teams will be taken to a place where they can have a discussion. Each person of the team will discuss what the envelop contains. Whether they would support a business that uses the practice written on their paper or not and what implication this decision can have environmentally or socially.

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SPECIFIC RULES

- No access to phone or internet
- 8 steps
- Point system: time bonus
- Rewards: vegetable seeds

SOURCES

Ward, L. (2018, July 18). *The conscious consumer and why retail needs to take note*. Retail Renewal. https://retailrenewal.ie/2018/07/18/the-conscious-consumer/

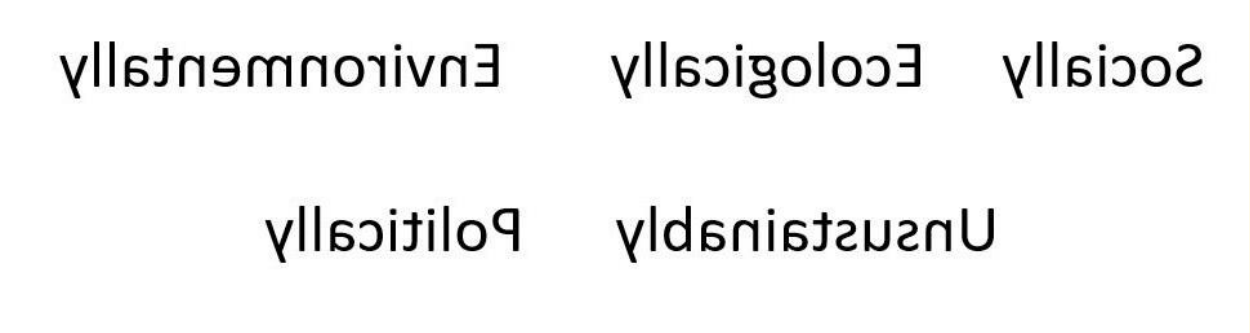
What is conscious consumerism? | An introductory guide. (2018, October 18). *Startups.Co.Uk*. https://startups.co.uk/sustainability/what-is-conscious-consumerism/

GRAPHIC MATERIAL TO PRINT

Preparatory material- Conscious Consumerism Treasure Hunt

Step 2:

1st Clue



Hint:

a) “This isn’t a wild goose chase if you go to the place where you can see your own face.”

b) Use the antonym

Step 3:

2nd Clue – PRINT X 2

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Step 4:

3rd Clue

Question 1: What is the definition of Conscious Consumerism?

Question 2: State two examples for each of the following categories of Conscious Consumerism:

1. Environment
2. Food
3. Animal

Question 3: Have a look around you. Can you see an item that does not satisfy the stated definition?

Step 5:

4th Clue

Envelope 1:

“It is what you need to plant a seed, it is mostly moist and brown. No need to go far, or look to the stars, in the garden it is all around.”

Envelope 2:

“They grow by soaking up the sun’s rays. Then they are cut and put in a vase.”

Step 6:

5th Clue

Inside of the box cover, taped:

Congratulations, you have almost completed the hunt and found the treasure!

Hint: Hurry up and plant the seeds before you open the envelope and read!!

Step 8:

Discussion – depends on the number of participants

Each envelope will contain one of the following (either ethical or non-ethical)

Ethical:

Fair Trade Products

Pay the workers a living wage

Do not hire children

Implement environmentally friendly and sustainable practices

Healthy working environment

Donate to charities

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Non-ethical:

Child Labor

Animal Testing

Violation of workers' rights

Lacking Transparency

Polluting Water

Misleading the Customers

Overexploitation of Natural Resources

3. ETHICAL INVESTMENT

PEDAGOGICAL OBJECTIVE:

Learn about ethical investment and socially responsible companies.

KNOWLEDGE ELEMENTS:

Oxford dictionary defines the word ethical as follows: "Relating to moral principles or the branch of knowledge dealing with these", "Avoiding activities or organizations that do harm to people or the environment".

(*Ethics | Definition of Ethics by Oxford Dictionary on Lexico.Com Also Meaning of Ethics*, n.d.)

Ethical investment is when investors consider whether the impact of a company is positive for the world before investing in it. Therefore, it is not something merely done for financial gain, but also for a socially responsible reason.

Why is ethical investment important?

Ethical investing is investing while having the intention of helping the society and not harming anyone. When investing is done without considering ethics, it can promote negative values that will, therefore, negatively impact people and the society.

Ethical investors typically avoid investments from sin stocks and companies involved with stigmatized and immoral activities, such as gambling, alcohol, smoking, or firearms.

An early instance of ethical investment was in the 1700s, when members of the Religious Society of Friends (Quakers) did not agree to invest in weapons of war or participate in the slave trade. Since the Industrial Revolution, many investors have promoted peace, civil rights, environmental causes, fair trade, animal rights and equality by channeling their money to companies that reflected

their values. Nowadays, many businesses have integrated corporate social responsibility strategies and use a value-based approach to direct investment decisions. Deciding not to invest in industries, sectors or companies who have a negative social impact is also a part of ethical investment.

(Kenton, 2020)

METHODOLOGY:

Before:

- Prepare 10x2 envelopes.
- Scatter around the store products from Diesel, Garnier, Lego, Loreal, Levi's (the mentioned brands are optional, the facilitator can choose items of similar brands as long as there are 2 ethical and 3 non-ethical brands)
- Place the pack of shares by the counter / cash desk (see preparation document with accompanying material)
- Place 4 Nestlé items around the store
- Place paper and pen near them
- Place instructions in one of the Nestlé items
- Once the first team finishes the treasure hunt, repeat the steps above

After ""debriefing session"

- Prepare two "scripts" (find info between envelope 4 and 5)

DESCRIPTION OF THE REWARD:

The participants will find the treasure in the dairy section of the store (or a place chosen by the facilitator). The treasure is for all participants of both teams and it will be a small box of organic products.

REQUIREMENTS:

- Level of learners: Basic
- Material: paper, pen, envelopes, 4 Nestlé items (such as chocolates, coffee, cereal, baby food), [Optional brands to choose by facilitator: Lego, Levi's jeans, Diesel item, Garnier item, Loreal item] pack of shares
- Space: Indoor / Outdoor
- 75 – 90 minutes
- Group activity

DESCRIPTION OF THE ACTIVITY:

The treasure hunt should take place at a business that is ethically conscious. An example of such a business can be an organic store. However, the activity can be easily adapted for an office of a Non-Governmental Organization (NGO).

Organic stores are usually small, therefore, one team at a time should take part in the treasure hunt. In case the activity takes place at an office, both teams can play at the same time. The points of the teams will be compared at the end, in order to find the winner team.

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Starting the activity:

Facilitator: Welcomes all the participants to the organic store. S/he explains to them what a treasure hunt is, how it will be played and explains the goal/objective of the quest. The facilitator gives them relevant information about ethical Investment (definition and some examples) that will be needed for the treasure hunt. For each correct answer, a team gets one (1) point.

After that, the facilitator:

- Gives information about the number of envelopes.
- Informs participants that there is a surprise prize in the end.
- Provides the time they have to complete the activity.
- Forms two teams according to the number of participants.
- Gives participants envelope 0 with the clue on how to find Envelope 1.

The time starts to be counted when participants open Envelope 0.

Envelope 0:

What it contains: Clue on how to find Envelope 1.

Example of the clue inside: Search for 5 products / brands that the facilitator already placed in the room, which are not part of the organic store and cannot be eaten (so that participants are not confused with clue 4). In which companies do you believe it is ethical to invest?

Hint: Choose 2 among the 5.

Where it should be found: Participants receive it at the starting point from the facilitator.

Answer: Brands: ("6 Socially Responsible Companies to Applaud," 2018)

a. Diesel - not ethical, points - 1
b. Garnier - not ethical, points - 1

c. Lego - ethical, points + 1
d. Loreal - not ethical, points - 1
e. Levis - ethical, points + 1

The above brands are optional. The facilitator can choose any brand they have / can find. The facilitator should research before choosing the ethical and non-ethical brands to make sure that they are.

If the wrong company is chosen (an unethical company: a company whose actions don't conform with the acceptable standards of business operations e.g. exploiting workers, dumping toxins), then points will be subtracted. This applies only for this clue/step.

Envelope 1: What it contains: Clue on how to find Envelope 2.

Example of the clue inside: Find the SIN that ethical investors typically avoid investing in.

Envelope in Levi's: "Find the SIN that ethical investors typically invest in."

Envelope in Lego: "avoid" and the following hint:

Hint: Find it next to the most valuable item in the store and start reading! (most valuable item in store is the counter / Cash Desk)

In case the treasure hunt is taking place at the offices, the facilitator could change the hint and place the envelope at the place of his preference.

Where it should be found: Participants will find envelopes in all of the above items, however, only two items contain the correct envelopes – the brands that are ethical to invest in. The teams do not know that all items contain envelopes – but will realize it while playing. The envelopes attached to the "not ethical" brands will be empty.

The participants will find the envelopes containing the next clue, inside the Lego and Levi's items – both examples of socially responsible companies, an ethical investment. Half of the clue will be in the jeans' pocket and the other

half in the Lego. Participants should connect the two parts together in order to find the next clue.

There is an envelope inside the Levi jeans' pocket and one in the Lego.

Envelope 2 (stocks):

What it contains: information for short discussion with facilitator.

Example of the clue inside: Use the internet to find information about a car manufacturing company which is ethical to invest in. Discuss with your team the reasons why you believe that the specific car company is socially responsible.

Where it should be found: The team must realize that the word "Sin" addresses "sin stocks" (refers to shares of companies engaged in a business/industry that is considered unethical and immoral. The participants will realize it once they start reading the stocks). On the counter of the organic store or at the place of preference of the facilitator, there will be a pack of paper containing shares of companies (an example can be seen in the preparation document, accompanying material) involved in activities which are considered unethical (e.g. gambling, alcohol, tobacco, weapons etc.).

The participants find the "sin stocks" and start to read. The next clue is written on one of the shares. The participants should read carefully in order to spot the next clue!

Explanation: The facilitator will be needed for this clue. S/he will make sure that the participants have indeed chosen a socially responsible company and they have a strong argument as to why. The team should consider as a main argument the environmental impact of the car manufacturer. For example, considering the environmental impact, one can choose a car company which produces electric cars, i.e. Tesla.

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Envelope 3:

What it contains: information for a discussion.

Example of the clue inside: Search for 4 Nestlé items in the store/office.

Hint: Look inside!

Where it should be found: Participants receive it from the facilitator after the short discussion.

Nestlé is one of the most known companies for the following:

- Child labour
- Pollution
- Genetically modified ingredients
- Use of unsustainable palm oil

(*Five Unethical Companies*, 2018)

Each Nestlé item will contain inside of it one of the above activities, written on a strip of paper.

A fifth strip of paper will be included in one of the above items (one item will contain 2 strips of paper) and will contain instructions on what the team should do with these words.

An example of a possible instruction:

Search the internet to find a different company for each word that uses the unethical activities described. Stick the activities on the piece of paper provided and write next to each activity the name of the company you have found.

When the team finds all 5 strips of paper, they should search for the companies and write them down.

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While the teams search for companies, the facilitator takes the time to do his own research. The facilitator will then check the answers and the first team steps outside of the store.

When both teams have finished the treasure hunt, all participants are gathered together for the last step. The facilitator announces that one person from each team should be chosen for this last activity.

The person is chosen and the facilitator hands them a piece of paper with instructions.

Participant 1: The first participant will role-play the owner of a company that wants to ethically invest in another company. S/he will need to point out the following:

- What ethical investors are – definition
- What his company does
- If it is socially responsible

Participant 2: The second participant will be the owner of a company which engages in unethical activities. S/he will try to convince participant 1 why s/he should invest in the company even though they use unethical activities. Participant 2 should point out the following:

- What are some unethical activities?
- What does your company do?
- What unethical activities are related to your company?

Be creative!

The two participants can ask for help and ideas from their team members. No points will be given for this step. It will be in the form of a discussion as a

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way for the facilitator to check what the two teams have learned about ethical investment.

Envelope 4:

What it contains: Clue on how to find the treasure.

Example of the clue inside: Check out the dairy section (the facilitator can choose any section or place in case of an office). Not all treasure is silver and gold!

Where it should be found: Participants receive it from the facilitator after discussion

GAMIFICATION ELEMENTS:

- Specific rules: access to phones and internet
- Point system: one point for each correct answer, point reduction for wrong answers for clue 1
- Reward: box of organic products

SOURCES:

Classy. "6 Socially Responsible Companies to Applaud," May 11, 2018. https://www.classy.org/blog/6-socially-responsible-companies-applaud/

Lexico Dictionaries | English. "Ethics | Definition of Ethics by Oxford Dictionary on Lexico.Com Also Meaning of Ethics." Accessed September 4, 2020. https://www.lexico.com/definition/ethics

Ethical Consumer. "Five Unethical Companies," May 18, 2018. https://www.ethicalconsumer.org/retailers/five-unethical-companies

Kenton, Will. "Ethical Investing." Investopedia, 2020.
https://www.investopedia.com/terms/e/ethical-investing.asp

GRAPHIC MATERIAL TO PRINT

Ethical Investment Treasure Hunt Preparation

Step 2:

1st Clue

Search for 5 products or brands that the facilitator already placed in the room.

!! Not part of the organic store !!

!! Not food !!

Step 3:

2nd Clue

Envelope 1:

"Find the SIN that ethical investors typically invest in."

Envelope 2:

"Avoid!"

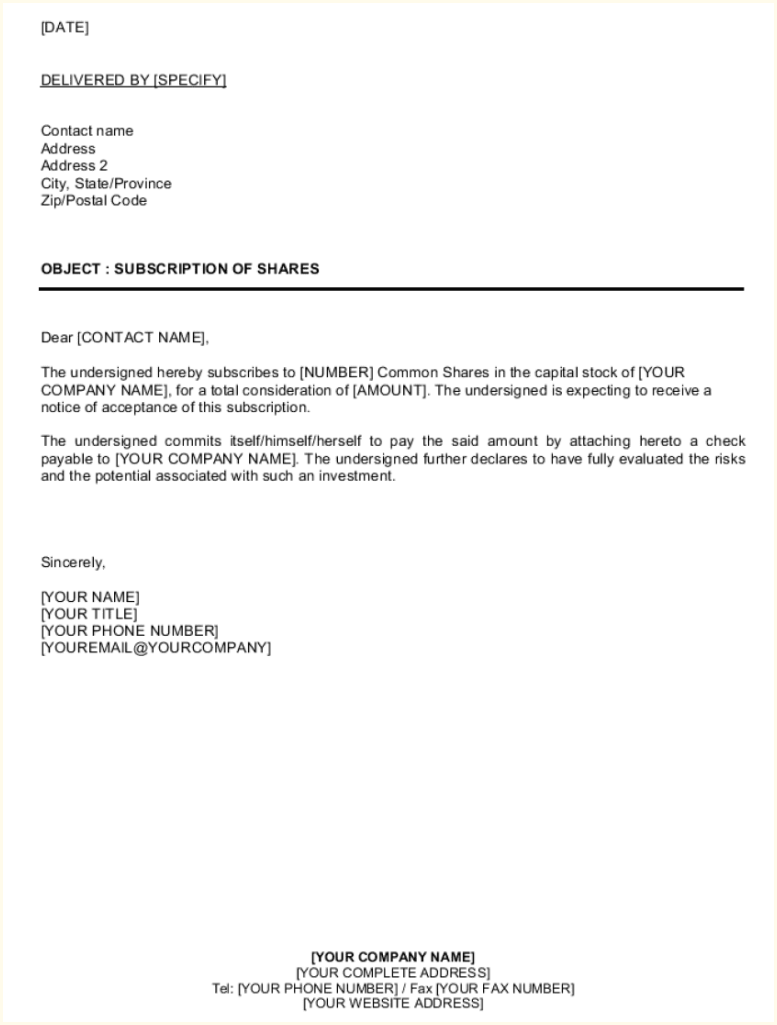
Hint: Find it next to the most valuable item in the store and start reading! (the hint can be adapted for the treasure hunt taking place at the office)

Step 4:

3rd Clue

Use the internet to find information about a car manufacturing company which is ethical to invest in. Discuss with your team the reasons why you believe that the specific car company is socially responsible.

[An example of a letter for subscription of shares. Can be edited with names of companies that use unethical activities. The above instruction can be hidden between the paragraphs.]



[DATE]

DELIVERED BY [SPECIFY]

Contact name
Address
Address 2
City, State/Province
Zip/Postal Code

OBJECT : SUBSCRIPTION OF SHARES

Dear [CONTACT NAME],

The undersigned hereby subscribes to [NUMBER] Common Shares in the capital stock of [YOUR COMPANY NAME], for a total consideration of [AMOUNT]. The undersigned is expecting to receive a notice of acceptance of this subscription.

The undersigned commits itself/himself/herself to pay the said amount by attaching hereto a check payable to [YOUR COMPANY NAME]. The undersigned further declares to have fully evaluated the risks and the potential associated with such an investment.

Sincerely,

[YOUR NAME]
[YOUR TITLE]
[YOUR PHONE NUMBER]
[YOUREMAIL@YOURCOMPANY]

[YOUR COMPANY NAME]
[YOUR COMPLETE ADDRESS]
Tel: [YOUR PHONE NUMBER] / Fax [YOUR FAX NUMBER]
[YOUR WEBSITE ADDRESS]

Step 5:

4th Clue

Strip 1:

Child Labor

Strip 2:

Pollution

Strip 3:

Genetically Modified Ingredients

Strip 4:

Use of Unsustainable Palm oil

Strip 5:

Instructions:

Search the internet to find a different company for each word that uses the unethical activities described. Tape the activities on the piece of paper provided and write next to each activity the name of the company you have found.

Step 7:

Participant 1:

You are the owner of a company that wants to invest in a socially (ethically) responsible company.

Think of a possible scenario as to what is the concept of your company.

A discussion will be made with the owner of the company you are thinking to invest in.

The owner will try to convince you that the company is an ethical investment.

During your conversation, please point out the following:

- What do we mean by the term “ethical investment”?
- What is the concept of your company?
- Is it a socially responsible company? If yes, explain the points. For example: due to its environmental impact and expand further.

Participant 2:

You are the owner of a company which uses unethical activities (e.g. gambling / tobacco company etc.).

Think of a possible concept for your company.

Your task is to try to convince the investor that you own a socially responsible company, even though you use unethical activities.

During your conversation, please point out the following:

- What are in general some unethical activities?

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- What is the concept pf your company?
- What do you sell, how is this unethical, with what ethical activities do you deal with (if any)?
- Why should the investor consider you as an ethical investment?

4. FOOD SUPPLY CHAIN

Environmental conservation and sustainability - Food supply chain with an emphasis on sustainable/local food systems.

PEDAGOGICAL OBJECTIVE:

- To understand the concept of a food supply chain or food system.
- To be introduced into the concepts of domino causality and two-way causality and consider some of the "push" and "pull" factors involved in the movement of food and money through the supply chains.
- To define, identify key differences between, and understand social and environmental impact of industrial/global and sustainable/local food systems.

SHORT INTRODUCTION TO THE TOPIC:

Food supply chains (FSCs) allow the effective and safe delivery of food products from farmed crops to consumer forks. In other words, a food supply chain or food system refers to the processes that describe how food from a farm ends up on our tables. The processes include production, processing, distribution, consumption, and disposal.

The food we eat reaches us via food supply chains through which food moves systematically in a domino-like motion from producers to consumers while the money consumers pay for food goes to people who work at various stages along the food supply chain in the reverse direction. Every step of the supply chain requires human and/or natural resources. Because a food supply chain is domino-like, when one part of the food supply chain is affected, the whole food supply chain is affected, which is often manifested through changes in price.

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Conventional (global) Food System – Conventional food systems operate based upon economies of scale. They use a production model that requires maximizing efficiency to lower consumer costs and increase overall production. These food systems tend to operate in the global marketplace and primarily use industrialized agriculture methods of production, although organic agriculture production methods can also be a part of the conventional food system.

Local Food System – Local food systems provide an alternative to conventional food systems in that they operate with reduced food transportation and more direct marketing, connect the farmer directly to the consumer, provide more transparency in how food is produced, and keep food dollars in local communities. Food is most often produced on a smaller scale than conventional food systems, using organic and/or sustainable agriculture practices, and is sold locally at farmers markets, farm stands, etc.

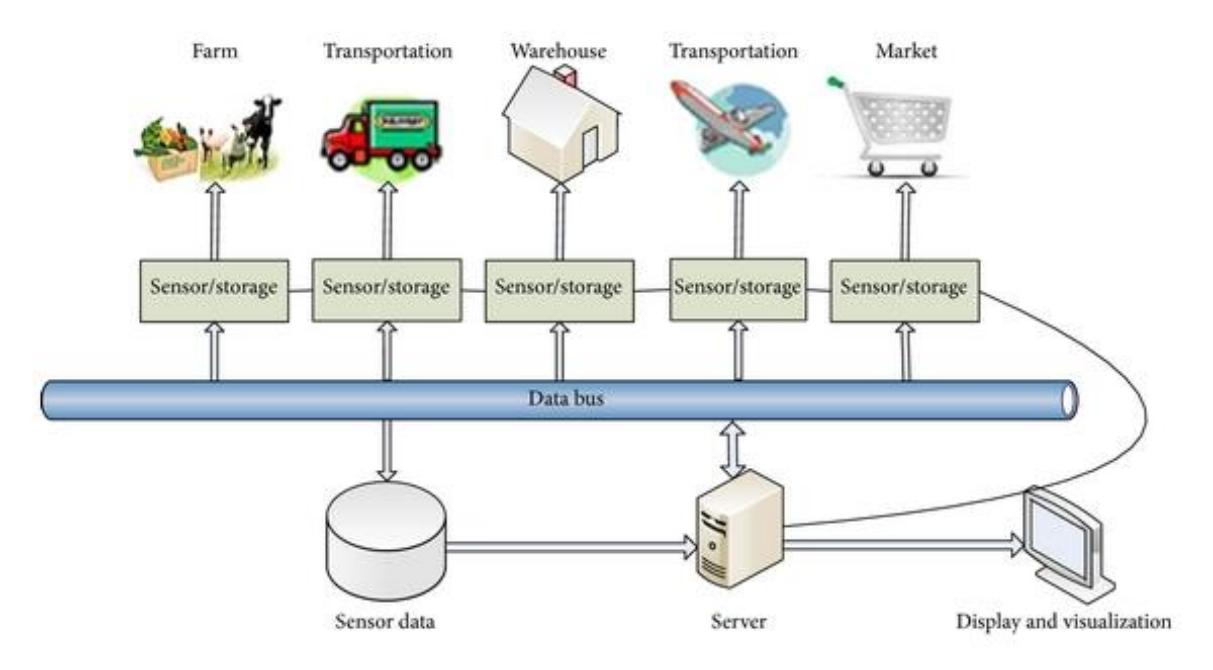

Figure 1. An illustration of IoT (Internet of Things) system's physical structure modelled for the food supply chain (Zhang et al, 2013)

METHODOLOGY:

Before

- Print the 7 scavenger hunt cards. the clues need to be printed on the backside of the paper.
- Laminate the cards
- Place the laminated scavenger hunt cards at the appropriate farm locations and pin to the ground using tent stakes.

After "learning session"

- First team/person that arrives on the meeting spot receives a reward from the facilitator
- Debriefing discussion using the following questions:
- What surprised or concerned you the most about the global/industrial food system and why?
- What aspects of local sustainable agriculture do you think are most valuable or important in today's world? Why?
- What steps will you consider taking to encourage a more environmentally or socially just food system?

DESCRIPTION OF THE REWARD:

Local bio products from the farm

REQUIREMENTS:

- Level of learners: advanced
- Material: laminated treasure hunt cards, worksheets
- Space: outdoor
- Time: 70 - 90 minutes

DESCRIPTION OF THE ACTIVITY:

Facilitator welcomes the group at the starting point and an introductory session takes place indoors, in which the facilitator introduces key concepts of this activity, as provided in the short introduction to the topic above.

After that, the facilitator:

- Gives information about the number of treasure hunt cards, they need to find,
- Informs participants that there is a surprise prize in the end
- Provides the time they have to complete the activity
- Informs participants that they should work as a team
- The participants are asked to form groups (up to seven).
- The facilitator provides a treasure hunt worksheet (provided below) and one riddle to each group to start the activity.

The time starts to be counted when participants receive the first riddle. Participants will find their first location based upon their answer to the riddle. The participants will use the worksheet to provide their answers to each riddle. This will ensure that each group has a different starting location.

Once participants are at the first location, they will answer the questions on the card at that location. Once the questions are answered, they will use the riddle

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provided on the bottom of the laminated treasure hunt card to find their next location.

Participants will know that they have completed the treasure hunt when their worksheet is complete and they re-encounter their first riddle. The group team that finishes first, is the winner!

As soon as this is done, the group informs the facilitator, to record their time. The facilitator checks for the worksheet answers, and once confirmed that those are valid, s/he provides an envelope that leads to the actual treasure.

SPECIFIC RULES:

- Access to phones is allowed, while the participants try to answer the questions which are given in each station.
- Participants use the riddles provided to move from the one station to the other; also, some hints are provided.
- Number of steps: 7
- Point system: The group that resolves all clues correctly in the minimum time.
- Reward: local bio products of the farm

SOURCES:

Bortolini, M., Accorsi, R., Gamberi, M., & Pilati, F. (2019). A model to enhance the penetration of the renewables to power multistage food supply chains. In Sustainable Food Supply Chains (pp. 305-315). Academic Press.

Zhang, Q., Huang, T., Zhu, Y., & Qiu, M. (2013). A case study of sensor data collection and analysis in smart city: provenance in smart food supply chain. International Journal of Distributed Sensor Networks, 9(11), 382132.

GRAPHIC MATERIAL TO PRINT

Laminated Treasure Hunt Cards

Place a laminated card at each station and pin to the ground with tent stakes.

Station 1: This is where natural waste products are composted and broken down into rich compost that can then be added to the soil.

1. List five ingredients in the compost pile.

2. What other sustainable method is used to add organic matter and nutrient to the soil, particularly before winter?

3. On an industrial farm, what would a farmer add to the soil to enhance plant growth?

Clue to Next Station: What likes the colours purple, blue, yellow, and white, is a messy eater, and dies if it gets too angry?

Station 2: Yes, the {name} Farm has bees! These honeybees help to pollinate the plants.

1. How many "homes" do you see? What are these structures called?

2. Why do farms need pollinators? Why?

3. How do sustainable farms rid of insect pests? How would insects be controlled on an industrial farm?

Clue to Next Station: I grow in the forest but have been brought to the farm in tiny pieces to keep the farm floor healthy.

Station 3: Wood mulch can be acquired cheaply because it is a waste product. Other waste products can be used for mulch beyond fallen trees.

1. Name two other types of items that can be used as mulch?

2. Name three benefits of mulching.

Clue to Next Station: Like a black water snake, I am long and slender and like the water. My plastic skin helps to slither water from bed-to-bed, water dripping through my scales.

Station 4: This black plastic tubing is placed at the base of plants and is connected to the nearest waterspout.

1. What is this plastic tubing used for? What is it called?

2. What part of the plant do you think receives the water first?

3. Why do you think this tube system is used instead of sprinklers to water plants on a sustainable farm?

Clue to Next Station: I am a house of a certain colour but have no colour. I have no lights, but I am filled with light.

Station 5: This first-ever mobile greenhouse was designed and built by undergrads at Ball State (US). Pretty cool, huh?

1. How does this structure help plants grow quickly and earlier in the season?

2. Why is the greenhouse clear?

3. What do you think is the ideal daytime temperature inside the greenhouse?

a. Less than 4 °
b. 7 ° to 13 °
c. 24 ° to 30 °
d. 38 ° and more degrees

Clue to Next Station: I am opposite to the definition of my name because I collect and store items.

Station 6: Sustainable farms often require very little storage space for tools. Peek inside to see what tools are used on the {name} Farm.

1. Name 3 tools you see in the tool shed.

2. Why do you think a variety of tools are needed for sustainable agriculture? How many different types of plants do you see planted nearby?

3. How do these tools differ from those used in industrial agriculture?

4. Do you think sustainable agriculture tools use more or less fossil fuels? Why?

Clue to Next Station: As a major architectural element from ancient Rome, I am neither turret nor steeple, I am a _____. Hint: rhymes with “Rome” [applicable only in English].

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Station 7: This is where the {name} Farm brings produce after harvest to prepare it for market with washing and packaging.

1. How do you think the {name} Farm sells its produce? Is it locally sold, nationally sold, or globally sold?

2. If a cucumber is sold for 1 euro, how much of that euro do you think goes directly back to the {name} Farm? How much do you think goes to other companies for processing, packaging, transportation, and wholesale?

3. Below is an image of how a 10-euro banknote is distributed in the industrial/global food system. How much goes back to the farmer in this food system type?

The industry group euro demonstrates that the cost of food equals the sum of value added by all supply chain establishments. Supply chain establishments are categorised into 12 industry groups. Other includes agribusiness, legal and accounting.

How has the value added (costs) to the food euro by each industry groups changed over time?

Clue to Next Station: I am a wooden home where billions of invisible organisms divide and transform past lives into parts to build new lives upon the year's renewal.

5. RENEWABLE ENERGY RESOURCES

PEDAGOGICAL OBJECTIVE:

To gain an understanding of why energy comprises an important aspect of our everyday lives and learn about sources of renewable energy and how these sources are an environmentally friendly alternative to fossil fuels.

SHORT INTRODUCTION TO THE TOPIC:

Terms to know and familiarize with:

- **biomass:** Any organic (plant or animal) material which is renewable, including agricultural crops, wastes, and residues; wood, animal, and municipal wastes; and aquatic plants.
- **carbon dioxide:** a colourless, odorless gas that is present in the atmosphere.
- **energy:** the ability to do work or the ability to move an object.
- **potential energy:** stored energy, or the energy of position.
- **kinetic energy:** the energy of motion.
- **power:** the rate at which energy is transferred.
- **watt:** a metric unit of power, usually used in electric measurements, which gives the rate at which work is done or energy used.
- **renewable energy sources:** fuels that can be easily made or renewed in our lifetime, such as water, solar, wind, geothermal, and biomass.
- **non-renewable energy sources:** fuels that cannot be easily made or renewed, such as oil, natural gas, and coal.

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METHODOLOGY:

Before

- Find an outdoor area (e.g., on a farm) that you can investigate.
- Print the poster cards provided in the Appendix, on A4 paper sheets each.
- Enclose each poster card in an envelope.
- Hide the envelopes next to the corresponding items, as indicated below, in several different locations on the farm.
- One envelope is provided for each team at the beginning of the activity and for every clue. So, if there are 8 participants that form 4 groups, then 4 envelopes should be provided for each clue. This applies for all the ten clues, which are provided below.
- Print the clues on paper and place them in envelops. Make sure that every group gets an envelope of every clue
- The final clue should lead to the treasure.
- The participants will be asked to upload photos of the items, during the treasure hunt activity to the Green STEAM Incubator Facebook page.

After "debriefing session"

- Debriefing with the participants and reflection.

DESCRIPTION OF THE REWARD:

an invitation ticket to a photovoltaic park (or another similar venue, linked to renewable energy sources).

REQUIREMENTS:

- Level of learners: basic
- Material: poster cards printed on A4 paper sheets; items provided in the description of the treasure hunt, further below.
- Space: indoor for the introductory and debriefing part, outdoor for the treasure hunt activity.
- Either smartphones and wifi connection or paper and pencils are needed.
- Time: 60 minutes.

DESCRIPTION OF THE ACTIVITY

Starting the activity

Facilitator: Welcomes the group at the starting point and explains that this hunt will be about renewable energy resources. The facilitator should make sure that the participants understand what renewable energy is and provide some examples of renewable energy types (wind power, solar energy, etc.). Then, a discussion follows on why renewable energy is a good alternative to fossil fuels (because there is an infinite amount of renewable resources).

After that, the facilitator:

- Walks around the outdoor area (e.g., on the farm) with the participants to note any local energy sources such as trees/timber, plants, animals (which we use for energy in the source of food), the sun, wind, even the moon (the moon

controls high and low tides and capturing tidal energy is being explored in some coastal regions).

- The facilitator asks the participants to explain "if this is an energy source, then what is its purpose?" and "who does it give energy to? Where does it get its energy from?"
- The facilitator asks the participants to form groups of 2-3 for the treasure hunt activity. The items to be hunted for do not need to be picked-up or be collected; the participants simply need to find an item at each location, which will provide them with a new clue in order to find the rest of the items. Additionally, the participants are asked to record the items found every time, by taking a photo of them, using their mobile devices and uploading the photo(s) to a social media page that has been created for the purposes of the game. The latter should be applied only if Wi-Fi connection is available. Otherwise, the participants will be asked to note the identified items on an empty sheet provided by the facilitator at the beginning of the game.
- Treasure hunt activity: The facilitator explains what a treasure hunt is and how it will be played. The steps are given below.

1. An envelope is provided to each team. Within the envelope, a paper sheet provides the first clue. If the team requests it, a hint can be provided, however, asking for a hint makes the group lose one point
2. With the use of the clues (and the hint), the team is requested to navigate around on the farm and find a relevant object/item to the type of energy source described in the clue.
3. Once the team has successfully identified the correct item, it should take a photo of it and upload the photo to a social media page that is created for this purpose. While uploading the photo, the team should provide the name of the team in the description. Otherwise, the

participants will be asked to note the identified items on an empty sheet provided by the facilitator at the beginning of the game.

4. For each successful identification of a clue, the team receives +2 points. For each hint provided, the team gets -1 points. To acquire hints, the participants should reach out to the facilitator who stands in a meeting point as soon as the treasure hunt beings.
5. Next to the item, another envelope is provided. Within the envelope, the next clue is included. As soon as the team successfully uses the second clue, it moves to the third and so forth. The team follows that same procedure to uncover all the clues.
6. The team that completes the quest first, has posted photos of all the items on the social media page, and has the maximum points, is the winner.
7. Once resolving the last clue (see below), the winner team gets to the treasure, that is an invitation ticket to a photovoltaic park (or another similar venue, linked to renewable energy sources).

Below there is a list of items and clues.

1st Clue: "I am a solid fossil fuel, mined from the ground, used by power plants to produce electricity. What am I?"

Hints: "I have moved around the country by train"

Item: train toy

The teams should recognize that the energy source described is coal. The participants should search for the train toy that is placed somewhere on the farm; next to it, they will find an envelope, enclosing the printed poster card with the coal. The same procedure applies for all the clues that follow.

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2nd Clue: "I am a renewable energy source that can give you a bad hair day. I can spin big turbines that produce electricity. What am I?"

Hints: "I am able to move kites and sailboats"

Item: little fan (could be a toy)

Answer: wind

3rd Clue: "I am a renewable energy source, converted into heat and electricity, often collected by panels on rooftops. What am I?"

Hints: "I am everywhere the sun shines"

Item: a little panel, or a sun toy or something relevant to this type of energy

Answer: solar

4th Clue: "I am a liquid fossil fuel, turned into fuels like gasoline and diesel fuel. What am I?"

Hints: "I am collected from underground wells"

Item: a tin can with a label "oil"

Answer: petroleum

5th Clue: "I am a renewable energy, used by power plants to make steam and electricity. I am sometimes made into ethanol. What am I?"

Hints: "I am stored in materials made from plants or animals, found on farms, in your garbage or in your fireplace."

Item: a sweetcorn

Answer: biomass

6th Clue: "I am always in a rush, used to produce electricity, the greatest source of renewable energy, at least in some countries. What am I?"

Hints: "I am energy from moving water"

Item: a glass of water, or a bottle of water, or anything relevant to hydropower.

Answer: hydropower

7th Clue: "I am a fossil fuel in gas form. Used for home heating, manufacturing, and electricity generation, moved through pipelines. What am I?"

Hints: "I am collected from under the ground."

Item: a balloon, tied to the base of a tree.

Answer: natural gas

8th Clue: "I am a renewable energy source from heat within the Earth, used to heat buildings and generate electricity. What am I?"

Hints: "I am usually invisible but can be seen at volcanoes, hot springs, and geysers."

Item: a thermometer (indicating the high temperatures and the heat)

Answer: geothermal

9th Clue: "I am the energy source that powers your lights and computers; stored in batteries. What am I?"

Hints: "I am always traveling in a circuit"

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Item: a socket and a cable

Answer: electricity

10th Clue: "I am made from an ore found in the Earth. I am special because my atoms are easy to split. What am I?"

Hints: "Turned into a fuel for nuclear power plants."

Item: a shovel (reminiscent of a mine)

Answer: uranium

Finishing the activity:

After the activity, the facilitator holds a 10 -15 minutes debriefing session to discuss the experience.

Suggested questions to ask the group:

- How would we use these types of energy?
- How do other living things use them?
- How could we capture energy from renewable sources to use instead of fossil fuels?
- How do you think these local sources of energy are already being used in this way?

SPECIFIC RULES:

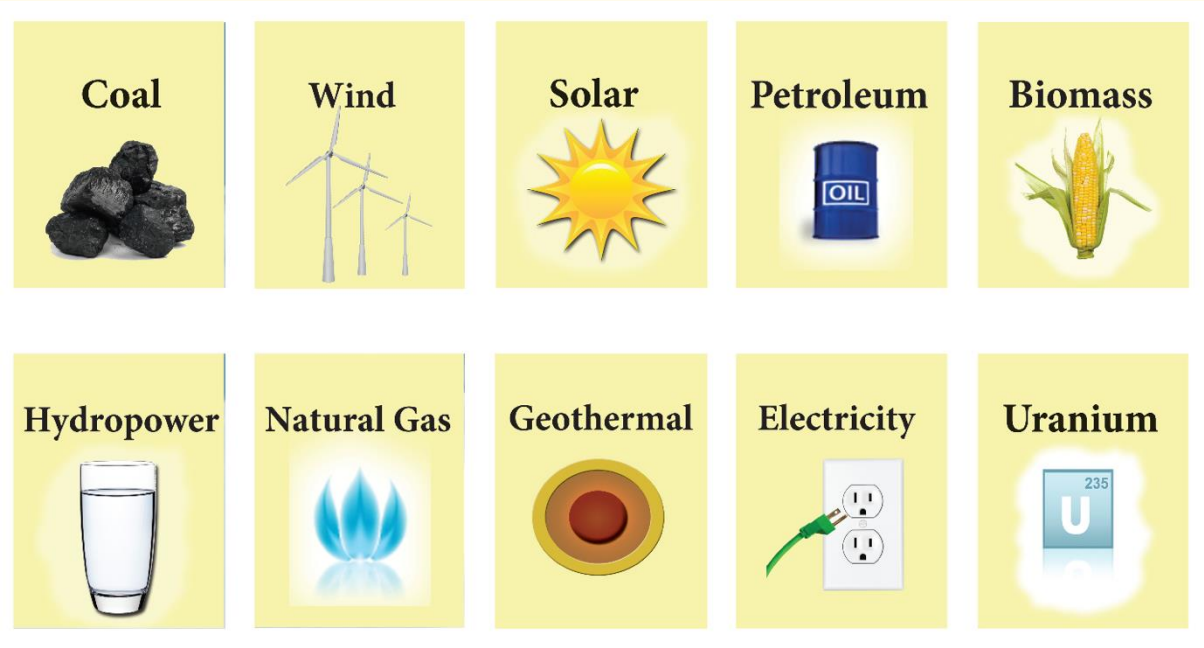
- Specific rules: access to phone for uploading photos or sheets provided for recording the items.
- Number of steps: ten
- Point system: For each successful identification of a clue, the team receives +2 points. On request of a team, a hint can be provided, which however results in losing one point (-1). If the

team solves a puzzle in less than 5 minutes, the team receives +1 point.

- Reward: an invitation ticket to a photovoltaic park (or another similar venue, linked to renewable energy sources).

GRAPHIC MATERIAL TO PRINT

Poster cards printed on A4 paper sheets



1

I am a solid fossil fuel, mined from the ground, used by power plants to produce electricity. What am I?

2

I am a renewable energy source that can give you a bad hair day. I can spin big turbines that produce electricity. What am I?

3

I am a renewable energy source, converted into heat and electricity, often collected by panels on rooftops. What am I?

4

I am a liquid fossil fuel, turned into fuels like gasoline and diesel fuel. What am I?

5

I am a renewable energy, used by power plants to make steam and electricity. I am sometimes made into ethanol. What am I?

6

I am always in a rush, used to produce electricity, the greatest source of renewable energy, at least in some countries. What am I?

7

I am a fossil fuel in gas form. Used for home heating, manufacturing, and electricity generation, moved through pipelines. What am I?

8

I am a renewable energy source from heat within the Earth. Used to heat buildings and generate electricity. What am I?

9

I am the energy source that powers your lights and computers. Stored in batteries. What am I?

10

I am made from an ore found in the Earth. I am special because my atoms are easy to split. What am I?

6. URBAN AGRICULTURE

Important:

- This is the description sheet that is only for the facilitator of the activity.
- **Participants only receive the envelopes during the course of the activity**
- **Cards and clues are in a separate document that is ready for the facilitator to print out**

PEDAGOGICAL OBJECTIVE:

Participants will learn about the different methods of urban agriculture. They will understand how to recognize the different possibilities of adapting urban agriculture into an urban environment.

SHORT INTRODUCTION TO THE TOPIC:

According to data collected by the United Nations, 68% of the world's population is predicted to live in urban areas by 2050. Already, every square meter inside cities is optimised to offer more density and efficiency. The activity of growing food inside the cities is not a new concept but it is currently in the mind's eye of many individuals, community groups, food justice advocates, environmentalists, city planners and gardeners. [1]

Being part of urban agriculture allows individuals to increase their supply of low-cost fresh produce, lessen the strain on the environment and promote

[1] UN World Urbanization Prospects (16 May 2019) Retrieved on 05.10.2020 from https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html

community engagement. There are many small-scale farming possibilities, and this treasure hunt will allow participants to discover some of them.

During this game, participants will discover several concepts like: city mushrooms growing, hydroponics, rooftop gardens, vertical farming, urban beekeeping and microgreens.

METHODOLOGY:

Before

- Prepare **6** envelops in different colours (or white envelopes you put a colour point on).
- Print the **5** exercise cards (+ award instruction card for treasure).
- Prepare the **6** clue cards (how to get to the next station).
- Purchase the treasure (see section about the reward)
  Place the treasure or the package with seeds in the envelopes.
- Prepare and hide the treasure.
- Explain the basic principles of urban agriculture

Important information to prepare the material:

Depending on the number of participants (maximum 5 teams of 2 or maximum 5 individual participants) you will need more envelopes.
Choose colours and attribute colours to teams or participants and note the corresponding colour on the envelop.
Therefore, participants and teams will only open the envelop that is dedicated to their team/individual colour.
For this reason you need to print and have as many envelopes as teams or individuals.
Example: 3 teams of two, you will need 7 x 3 envelopes so each team has

their own.

If you want to avoid envelopes, you can also fold the card and paper clue and place the colour on it so participants will recognize their own clue according to their team colour.

After "debrefing session"

- All the teams and participants should understand that the last station is to find the facilitator.
- The facilitator should go through all the answers the participants have given and reflect on them together.
- Debriefing discussion – suggestion of questions:
    - What other type of urban agriculture activity do you know?
    - Was there something that surprised you?
    - If you were about to start an urban agriculture activity, what would it be?
    - What are the benefits of urban agriculture?

DESCRIPTION OF THE REWARD:

The treasure will be the last envelope of the game containing seeds of microgreens and instructions on how to grow them at home.

Every participant receives a reward but the team/person which comes first will have more (quantity or diversity).

REQUIREMENTS:

- Level of learners: basic

- Material needed:
  - 6 Envelopes (number needs to be adapted according to how many teams and participants)
  - Printed documents (5 urban agriculture cards and 7 clue cards plus the treasure explanation. Adapt numbers of print-outs depending on participants)
  - a piece of paper per team for them to note down their answers
  - pencils – 3 per group
  - the seeds for the treasure
- Time: 1h – 1.5 hour
- This game can be played in teams or individually.
  - In teams with a maximum of 5 teams with 2 people

Individually with a maximum of 5 participants

Where to play this treasure hunt?

This game can be played in an agricultural farm, a simple farm or in any local/organic shop.

For the purpose of the game, depending on the location, some clues may need some adaptation to make sure the clues lead to existing places and are suitable with the place where the game takes place (henhouse, cash counter, welcome desk…)

DESCRIPTION OF THE ACTIVITY:

Starting the activity

Facilitator: Welcomes the group at the starting point and explains that this hunt will be about discovering different possibilities of adopting urban agriculture into an urban environment. She/he can use the information from the knowledge points.

The different steps are described below.

After that, the facilitator:

- Gives information about the number of envelopes, they need to find
- Informs participants that there is a surprise prize in the end
- Provides the time they have to complete the activity
- Informs participants if they should work as a team or individually
- Gives participants Envelope 0 with the clue on how to find Envelope 1

The time starts to be counted when participants open Envelope 0.

Station 0: Introduction by the facilitator

Envelope 0:

What it contains: Clue on where to find Envelope 1

Where should it be found: Participants receive it at the starting point from facilitator

Example of the clue inside: They are organized and disciplined workers, they turn what you need to find into honey but they need some source of food. What is it?

Answer: Flowers

Next station: The envelope should be hidden where flowers can be found (flowers can be in pots or in the open ground)

Station 1: Urban beekeeping

Envelope 1 includes:

What it contains:

- Clue on where to find Envelope 2
- Card about urban beekeeping

Where should it be found: In a flowerpot or where flowers can be found in the garden

The clue: It is an essential element for life.

Answer: Water

Next station: To find Envelope 2, participants must find the place where water can be found. In case you have no water stream, you can arrange a carafe or water canister inside the room.

Station 2: Hydroponic system

Envelope 2 includes:

What it contains:

- Clue on where to find Envelope 3
- Card about Hydroponic system

Where should it be found: next to a water stream or inside a water container.

The clue: They like when it is dark and humid, some are excellent and others toxics. Where could they grow?

Answer: Mushrooms – cave or dark humid place

Next station: To find Envelope 3, participants must find the place where mushrooms could grow. It can be found in the cellar if there is one, or in a dark place (like where aliments are stored). In case you have no cellar nor dark room, it is possible to use your imagination and hide the clue in a corner of the room.

Station 3: Indoor Mushroom growing

Envelope 3 includes:

What it contains:

- Clue on where to find Envelope 4
- Card about Indoor mushroom growing

Where should it be found: in a dark or humid room: cellar, food storage, wine cave…

The clue: To find the next clue you will have to look up / get a little higher

Answer: Rooftop gardening

Next station: To find Envelope 4, participants must look up. Depending on the location, the clue can be hidden on the top of a shelf, in the ceiling, in a tree a little bit in altitude.
The idea is to hide the clue in a high area.

Station 4: Rooftop gardening

Envelope 4 includes:

What it contains:

- Clue on where to find Envelope 5
- Card about Rooftop Gardening

Where should it be found: in the top of a shelf, in a tree, somewhere high, participants should climb on a chair, look up or jump to reach it.

The clue: Sometimes clues are hidden in the walls

Answer: Vertical farming

Next station: To find Envelope 5, participants must look at the walls. It can be inside or outside walls. Ideally the clue should be hung with some string or

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hung to existing elements on the wall (window shutters, notice boards… everything that can be placed on a vertical on a wall)

Station 5: Vertical farming

Envelope 5 includes:

What it contains:

- Clue on where to find Envelope 6
- Card about Vertical farming

Where should it be found: hung on a wall.

The clue: In the cycle of nature there is always a new beginning. How about going back to yours?

Answer: Going back to the starting point with facilitator.

Next station: Is where the introduction took place or where the facilitator wants to wait for participants when they are done with the game.

Final step:

The facilitator can imagine a last clue/riddle to make the treasure more difficult to find for participants. It is up to the facilitator. Otherwise, he/she can give the reward envelope containing the seeds to the participants without hiding them.

Finishing the activity:

After the activity, the facilitator holds 10 -15 minutes debriefing session to discuss the experience.

Suggested questions to ask the group:

- What other type of urban agriculture activity do you know?
- Was there something that surprised you?
- If you were about to start an urban agriculture activity, what would it be?
- What are the benefits of urban agriculture?

SPECIFIC RULES:

- The activity has 6 steps
- No phones, no Internet is required
- There are no time constraints, each team/participant should have time to think and look for the clues.
- It is a collaborative game
- Reward: microgreen seeds

SOURCES:

Tedx Talks. (2020, February 7). Are indoor vertical farms the future of agriculture? | Stuart Oda [Video]. YouTube. https://www.youtube.com/watch?v=z9jXW9r1xr8

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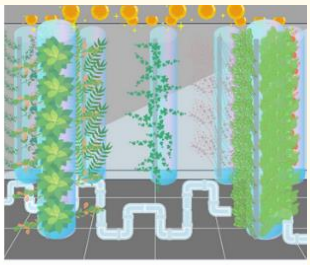
Co to jest hydroponika: niesamowite zalety w stosunku do rolnictwa na glebie (26.02.2019) https://www.youtube.com/watch?v=UHpNu4_6uc0

How much does a low tech mushroom farm cost? (20.04.2020) https://www.youtube.com/watch?v=KoR4QVTyE1w

Why urban beekeeping is a rising trend in major cities (04.09.2016) https://www.youtube.com/watch?v=f8nrtee7wqs

GRAPHIC MATERIAL TO PRINT





VERTICAL FARMING

- this system makes for creative reuse of land and/or buildings,
- it is based on soil-free growing methods (hydroponic or aeroponic),
- because of the vertically-oriented growing containers, the growing space and the footprint are significantly reduced,
- this technique uses advanced systems to control the growing conditions (such as micro controllers) and to optimize the use of resources and/or plant productivity,
- the water used in the process can be recycled, therefore reducing resources consumption.

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INDOOR MUSHROOM GROWING

- ingredients to grow mushrooms indoor: hydrated pasteurized straw pellets, mushroom grain spawn mixture, and a transparent mushroom growing bag,
- after preparing the bag, the mushrooms go into the incubation phase for 2-3 weeks, ideally somewhere dark and warm (20-24 degrees),
- once the bag has turned white, the mushrooms are ready to be fruited. At this stage, the bag needs to be sprayed, put in indirect light (can be artificial) and have access to fresh air.

There are mushroom growing kits available for purchase online that allows you to grown them by yourself. Oyster mushrooms contain vitamin B6 and D, fiber, potassium, and folate.

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HYDROPONIC SYSTEM

- hydroponics is a type of horticulture that doesn't require the use of soil, but rather floats the plants in a nutrient rich water solution,
- the system can be maintained indoor so there is no need to adapt to outdoor climate,
- the technique uses up to 95% less water than traditional agriculture,
- a large amount of diseases are soil-based, which means that using the hydroponic system allows for the reduction of chemicals used to maintain the plants.

Five of the best plants to grow in hydroponic systems are: lettuce, spinach, strawberries, bell peppers and herbs.

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URBAN BEEKEEPING

- in recent years, the number of bee colonies has dropped dramatically due to climate change, leading to global growing efforts to reverse the trend,
- there can be from 10,000 to well over 60,000 bees living in a single hive,
- keeping beehives is a growing trend in cities and can be found on rooftops of hotels (ex. St. Ermin's Hotel, London, UK), shops (ex. Carrefour in Wrocław, Poland), and even government buildings (ex. France's National Assembly in Paris).

Bees don't mind getting to very high places. For example, in London, beehives can be found on top of St Paul's Cathedral which is 52 meters high!

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ROOFTOP GARDENING

Some of the benefits of rooftop gardening:

- cultivating food and reducing the 'food miles' (= the environmental cost of shipping food from farm to shop),
- temperature control,
- architectural enhancement with recreational opportunities,
- habitats or corridors for wildlife.

The biggest urban farm in Europe is located in France on the roof of the Porte de Versailles exhibition center in Paris. The goal is to dedicate 14 000m2 of agricultural space by 2022.

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7. WAYS OF HABITAT CONSERVATION FOR ANIMALS IN CITIES

PEDAGOGICAL OBJECTIVE:

General objective

- Understand the importance of habitat protection for animals in cities.

Specific objectives

- Understand the importance of animal biodiversity.
- Identify the causes of biodiversity loss.
- Know the endangered species.

Identify the measures that can be taken to conserve the habitats of animals in cities.

KNOWLEDGE ELEMENTS:

When we talk about biodiversity, we are discussing the variety that exists in different life forms, whether it is a variety of animals, plants or other organisms. Most of the time, when we hear the term "biodiversity", we tend to think of forests and other national parks. But the truth is that these places are not the only ones where we can see biodiversity.

It is very much possible to observe biodiversity in urban areas. And why is it important to have biodiversity in cities? More than half of the world's population live in cities, something that contributes to increase the level of the carbon footprint. There is a lot that humans can do in order to increase biodiversity and, therefore, improve the general quality of life.

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- See also pamphlet on the importance of habitat conservation in cities.

METHODOLOGY:

Before:

- Print out the pamphlet about the importance of habitat conservation in cities (annex I);
- Make two puzzles, 24 pieces each (annex II), 1 for each team (divide the group in two).

After: "Debriefing session"

- Interaction with participants through discussion, using the following questions:

  - How was this experience?
  - Which part of the experience did you enjoy the most?
  - What was the most challenging part of the experience?
  - Did you know about the problem of the lack of habitats for animals and the risk of extinction that some of them carry?
  - What new knowledge did you gain from this experience?
  - From now on, what measures will you take to promote the conservation of animal habitats in cities?

DESCRIPTION OF THE REWARD:

Each participant that obtains 200 points receives a painting about nature.

REQUIREMENTS:

- Level of learners: Basic;
- Material: Puzzles;
- Space: Outdoor;

- Time: 30 – 45 minutes for the activity.

DESCRIPTION OF THE ACTIVITY INCLUDING CLUES

The activity consists of solving a puzzle of questions and answers. There will be 12 red and 12 blue pieces containing the questions, which will be hidden in 24 specific places, chosen by the facilitator (to be designated on site). The participants from each team will have to find the 12 pieces with the questions and each time they find one, they will go to the facilitator, who will present them the 4 answer options. If they answer correctly, the facilitator will give them 15 points and another piece with the corresponding answer to the question (same colour as the question). If the participants fail to answer the question, they will still receive the other piece (so that they will all end up with 12 pieces), but the number of points will be proportionate to the number of tries (1 try – 15 points, 2 tries – 10 points, 3 tries – 5 points).

Question: **Why is it important to maintain biodiversity?**

Answer (in bold is the correct one):

a) Biodiversity contributes to the degradation of the environment.
b) Because living beings are not important.
c) Biodiversity contributes to the preservation of the environment, but is dangerous to human life.
d) Biodiversity contributes to the preservation of the quality of life and the well-being of humans.

Clue (participants can ask for a clue for each question): Quality of life is important.

Question: **What factors contribute to the loss of biodiversity?**

Answer:

a) Environmental protection, reduced water consumption and organic farming.
b) Habitat destruction due to urbanisation, climate change and pollution.
c) Use of pesticides, organic farming and recycling.
d) Pollution, creation of nature reserves and hunting/fishing.

Clue: Pollution is very present in our days.

Question: **Concerning habitat destruction, which of the following applies?**

Answer:

a) It is not one of the causes of biodiversity loss.
b) Generally, it is not a consequence of the processes of urbanization and development of agriculture and livestock.
c) The construction of large urban areas without green spaces is worsening the problem.
d) The increase of pollution makes it possible to solve the problem.

Clue: Green spaces are important for the human being to breathe healthy air.

Question: **How can people take action to protect and conserve animal habitats in cities through daily actions?**

Answer:

a) Recycling, not polluting the environment and planting flowers and herbs.
b) Deforesting, increasing oil fuel consumption and recycling.
c) Planting trees, throwing garbage on the ground and recycling.
d) Not polluting the environment, deforesting and recycling.

Clue: All the options have to be eco-friendly.

Question: **What measures can governments and the European Union take to help with habitat conservation in cities?**

Answer:

a) Create natural areas of protection, promote the use of personal cars in cities, replace gardens with buildings and promote anti-pollution incentives.
b) Promote incentives to combat pollution by setting fines for polluters (including industry), replace gardens with buildings, promote the use of public transport and/or non-polluting vehicles and destroy trees.
c) Create natural areas of protection, promote incentives to combat pollution by setting fines for polluters (including industry), promote and encourage ecotourism and create urban green areas.
d) Create urban green areas, promote the use of personal cars in cities, promote incentives to combat pollution and encourage water pollution.

Clue: Measures are important to preserve the habitat conservation.

Question: **Of the following, which is a benefit that results from the promotion of Nature in cities?**

Answer:

a) The levels of carbon dioxide (CO2) become increasingly higher.
b) There will be a lot less buildings.
c) The number of animals in the city will decrease over time.
d) It can contribute to strengthening the local, national and global biodiversity.

Clue: Biodiversity becomes stronger.

Question: **How can you counterbalance the carbon footprint in cities?**

Answer:

a) Produce more carbon dioxide (CO2).
b) Promote a healthy environment, by encouraging its biodiversity.
c) Reduce the number of green areas in the city.
d) Discourage the promotion of biodiversity.

Clue: Biodiversity is key.

Question: **Of the following, which is a measure to promote biodiversity in urban areas?**

Answer:

a) Build more green roofs and living walls.
b) Increase the number of closed spaces.
c) Not by building living walls, as they take up a lot of space.
d) Incite the use of greenhouse gases.

Clue: Roofs of a certain colour and a type of walls are important.

Question: **How important are green areas (such as gardens, parks, urban woods), for the conservation of animal habitats in cities?**

Answer:

a) Green areas contribute to humans playing sport and destroying animal habitats.
b) Green areas contribute to the destruction of animal habitats, because they are solely intended for human beings.
c) Green areas are not important, for the conservation of animals in cities, because animals and humans should not live in the same space.

d) Green areas help to maintain animal habitats within urban centres, by preventing them from being destroyed.

Clue: Animals prefer to stay in green areas, because they are happier there.

Question: **What do loss and degradation of urban forests cause?**

Answer:

a) The decrease of the CO2 levels.
b) The increase of problems of air, water and soil pollution.
c) The increase of air quality.
d) The quality of life of the animals in the city improves.

Clue: Air, water and soil pollution suffer changes.

Question: **What is meant when we talk about "restoration"?**

Answer:

a) Renovation of cultural spaces.
b) Renovation of old buildings.
c) Reconnecting people with nature and restoring and managing biodiversity, in urban landscapes.
d) Renovation of public parks.

Clue: We, humans, need to reconnect with something in order to increase biodiversity.

Question: **If there is a high level of species richness in urban green spaces, what is perceived by that?**

Answer:

a) **The visitors to those spaces believe that there is a higher level of well-being surrounding them.**
b) People believe that the animals live better if they are always in contact with closed spaces.
c) It is believed that there are a lot of animals living in the city, but few spaces for them.
d) People have more money to take care of the animals in the city.

Clue: The visitors feel good when surrounded by biodiversity.

In the end, when every group has the 12 pieces of the questions and the 12 pieces of the answers, each team must assemble the puzzle. When they finish the activity, the participants with the higher ranking will be given the reward.

After the activity, the participants meet with the facilitator for the debriefing session.

GAMIFICATION ELEMENTS:

- Specific rules: Participants can use their mobile phone in case of doubts, but lose 2 points each time they do so (for the sake of fairness, the participants should hand their phones to the facilitator and request them back when they want to use them).
- Number of steps: 7.
- Point system: After all puzzle pieces are collected and questions are answered, each participant receives 20 points. For each correct answer to the questions, the facilitator gives the participants the puzzle piece with the answer and the respective points (1 try – 15 points, 2 tries – 10 points, 3 tries – 5 points).

GRAPHIC MATERIAL TO PRINT

Annex I – Pamphlet (Starts on the next page)

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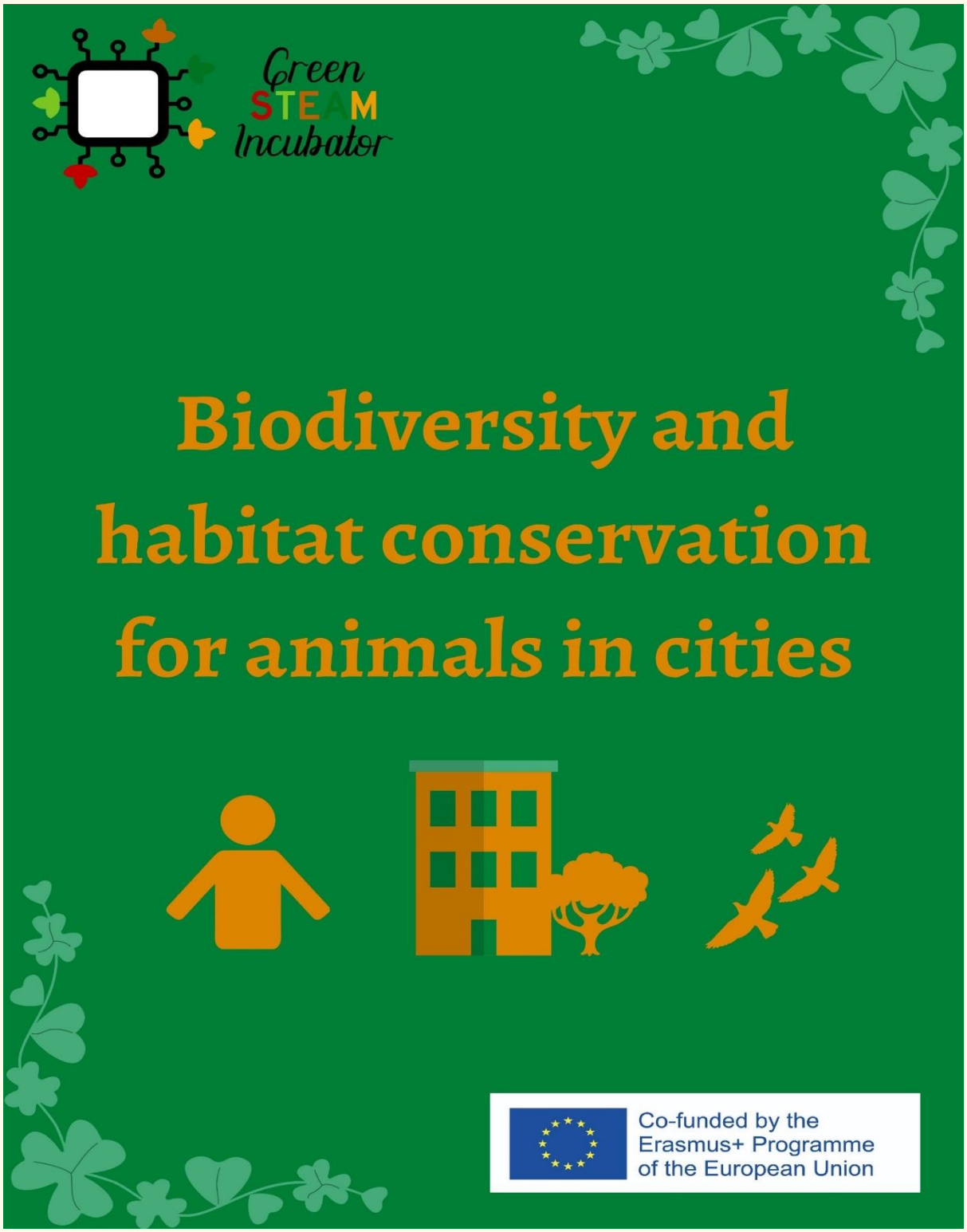

Green STEAM Incubator

What is biodiversity?

Simply put, biodiversity is the variety of life on Earth, and it can be observed in different forms: animals, plants and other organisms.

Where can we observe biodiversity?

Most of the time, when we hear the term "biodiversity", we tend to think of forests and other national parks.

But the truth is that these places are not the only ones where we can see biodiversity. It is very much possible to observe biodiversity in urban areas.

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Why is it important to preserve biodiversity in cities?

More than half of the world's population live in cities, something that contributes to increase the carbon footprint. Everything we do in our daily lives affect not only ourselves, but also the animals living in the same area.

If we preserve biodiversity, we are not only improving the habitat and the lives of the animals and plants living around us, but also our own.

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If you want to know more about biodiversity and other related subjects, check out the *Green STEAM Incubator* project by clicking the following links:

https://steam-incubator.org

facebook.com/greenSTEAMincubator

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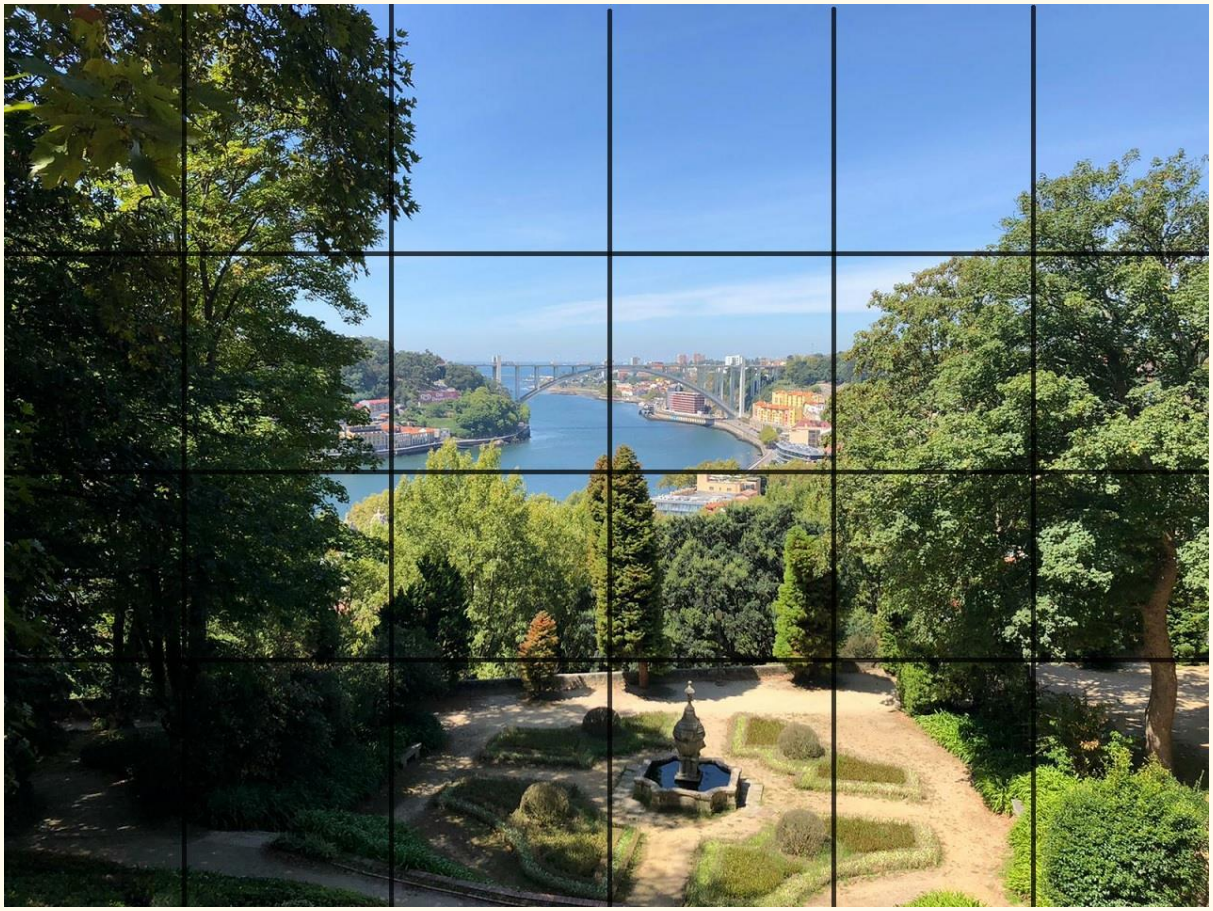
Annex II – 2 puzzles (1 for each team; 24 pieces)



8. WORLD AROUND US

Important:

- This is the description sheet that is only for the facilitator of the activity.
- Participants only receive the envelopes during the course of the activity
- Cards and clues are in a separate document that is ready for the facilitator to print out

PEDAGOGICAL OBJECTIVE:

Participants will learn about the different elements of permaculture and how to include the philosophy of permaculture into their every-day-life.
They will gain awareness of the possibilities that nature offers and how to live more sustainably.

SHORT INTRODUCTION TO THE TOPIC

We are living in a fast paced, ever-more interconnected world with lifestyles that are far from sustainable. We undoubtedly need to **change our way of life** not only for the sake of our planet, but also for our own sakes. However, we should not only **live more sustainably**, but we should also try to be more **mindful**. Our use of technology and the Internet seems to have reduced our attention span. A study from 2017 even suggests that the mere presence of a mobile phone impacts our cognitive capacity. Nevertheless, being able to pay attention is crucial for our learning processes. It can even help you become more patient, improve interpersonal relations and notice new opportunities. To make the world a better place, we need to be attentive and aware of our surroundings and our own actions.

Adapting elements of permaculture in our every-day-lives can help us become more attentive to our surroundings and live more sustainably.

The concept of permaculture was developed in the 1970s and focuses on creating positive change by being attentive and observant. Permaculture is about living with **care for the earth and for people** and to only consume a **fair share**.

The 12 permaculture principles are:

1. **Observe and interact**
2. **Catch and store energy**
3. **Obtain a yield**
4. **Apply self-regulation and accept feedback**
5. Use and value renewable resources and services
6. Produce no waste
7. Design from patterns to details
8. Integrate rather than segregate
9. Use small and slow solutions
10. **Use and value diversity**
11. Use edges and value the marginal
12. **Creatively use and respond to change**

During the treasure hunt, participants will learn about some of the principles of permaculture and how to include the philosophy of permaculture into their every-day-life. They will also get to try out different mindfulness exercises that can improve attention when practiced regularly.

METHODOLOGY:

Before:

- Prepare **7** envelopes.

- Print the **6** exercise cards (+ Tea instruction card for treasure).
- Prepare the **7** clue cards (how to get to the next station).
- Include also that the clue cards and exercise cards need to be placed in the envelops and hidden in specific locations according to the clues
- Prepare and hide the treasure: Make sure to either have a berry bush/apple tree/etc. where the participants can pick some fruit OR buy seeds for tea herbs to plant at home (including instructions on how to plant, harvest, dry and use them)
- Explain the basic principles and ethics of permaculture and talk with the participants about why it is important to have a sustainable lifestyle

Important information to prepare the material:

Depending on the number of participants (maximum 5 teams of 2 or maximum 5 individual participants) you will need more envelopes.

Choose colours and attribute them to teams or participants and note the colour on the envelope.

That way, participants and teams will only open the envelopes that are dedicated to their team/individual colour.

For this reason you need to print as many clue and exercise cards and have as many envelopes as teams or individuals.

Example: 3 teams of two, you will need 7 x 3 envelopes so each team has its own.

If you want to avoid envelopes, you can also fold the card and paper clue and place the color on it, so participants will recognize their own clue according to their team color.

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After "learning session"

- All the teams and participants will receive a reward.
- Go through the answers the participants have given and reflect on them together.
- Reflect on the mindfulness exercises and how they could be integrated into everyday life.

DESCRIPTION OF THE REWARD:

Option 1.

If there are fruit trees (berry bush/apple tree/etc) in the location of the activity, the reward is picking fruits to take home.

Option 2.

Provide participants with tea herbs to plant at home to make their own home-made tea as well as instructions on how to plant/harvest, dry and use the tea herbs).

Among the tea herbs that can be grown at home, you can find:

- Lemon Balm (reduces anxiety)
- Mint (helps digestion)
- Echinacea (boosts immune system), seeds need to be placed in the refrigerator for one week before planting
- Chamomile (promotes relaxation and digestion), the seeds need light to germinate
- Monarda (helps against colds and infections)

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REQUIREMENTS:

- Level of learners: basic
- Material needed:
  - Envelopes in different colors (according to number of teams and participants)
  - printed documents (7 clue cards and 7 exercise cards – including the treasure explanation – adapt numbers of print-outs depending on participants)
  - a piece of paper per team / per individual for them to note their reflections
  - pencils - 3 per group
  - the seeds for the treasure
- Time: 1h – 1.5 hour
- This game can be played in teams or individually.
  - In teams with a maximum of 5 teams with 2 people
  - Individually with a maximum of 5 participants

Where to play this treasure hunt?

This game can be played in an agricultural farm or a simple farm.
For the purpose of the game, depending on the location, some clues may need some adaptation to make sure the clues lead to existing places and are suitable with the place where the game takes place (henhouse, cash counter, welcome desk…)

DESCRIPTION OF THE ACTIVITY:

Starting the activity

Facilitator: Welcomes the group at the starting point and explains that this hunt will be about discovering different possibilities permaculture and changing our lifestyle. She/he can use the information from the section "introduction to the topic"

The different steps are described below.

After that, the facilitator:

- Gives information about the number of envelopes, they need to find,
- Informs participants that there is a surprise prize in the end
- Provides the time they have to complete the activity
- Informs participants if they should work as a team or individually
- Gives participants Envelope 0 with the clue on how to find Envelope 1

Station 0: Introduction by the facilitator

Envelope 0:

What it contains: Clue on where to find Envelope 1

Where it should be found: Participants receive it at the starting point from facilitator

Example of the clue inside: Inside me it gets quite warm and I am full of worms.

Answer: Compost

Next station: participants must go to where the compost is located to find Envelope 1.

<u>Station 1: observe and Interact</u>

<u>Envelope 1 includes:</u>

What it contains:

- Clue on where to find Envelope 2
- Card with Reflection and Mindfulness exercise (written notes)

Where it should be found: Next to the compost

Example of the clue: A dish without me or one of my friends will taste quite bland.

Answer: herb garden

Next station: participants must go to the area where aromatic herbs can be found to find Envelope 2.

<u>Station 2:</u> Catch and store energy

<u>Envelope 2 includes:</u>

What it contains:

- Clue on where to find Envelope 3
- Card with Reflection and Mindfulness exercise (written notes)

Where it should be found: Where aromatic herbs are

Example of the clue: When you are thirsty, come to me.

Answer: Tap water / or where there is a water source (pond, pond, brook, drinking trough)

Next station: Depending on the location, participants must go to where water can be found (pond, pond, brook, drinking trough… use your imagination!) to find Envelope 3

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Station 3: Use and value diversity

Envelope 3 includes:

What it contains:

- Clue on where to find Envelope 4
- Card with Reflection and Mindfulness exercise (written notes)

Where it should be found: Close to a place where there is water or tab water.

Example of the clue: My brain is deeply rooted in the ground and the limbs of my body are high in the air.

Answer: A tree

Next station: Depending on the playground, participants must go to where trees grow

Station 4: Apply self-regulation and accept feedback

Envelope 4 includes:

What it contains:

- Clue on where to find Envelope 5
- Card with Reflection and Mindfulness exercise (written notes)

Where it should be found: In the branches of a tree, or on the ground next to a significant tree

Example of the clue: I am here for our feathered friends.

Answer: Bird house

Next station: Place a nest somewhere and place the clue in it? OR if there is a henhouse, place it at the door so the hens are not disturbed.

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<u>Station 5:</u> Creatively Use and Respond to Change

<u>Envelope 5 includes:</u>

What it contains:

- Clue on where to find Envelope 6
- Card with Reflection and Mindfulness exercise (written notes)

Where it should be found: In a nest placed somewhere in the location or close to the henhouse.

Example of the clue: You passed me once to arrive here and you will probably pass me twice by the end of the day.
Answer: Garden gate

Next station: Participants should reach the garden gate or the fence of the farm.

<u>Station 6:</u> Obtain a yield

<u>Envelope 5 includes:</u>

What it contains:

- Clue on where to find the treasure / go back to the facilitator
- Card with Reflection and Mindfulness exercise (written notes)

Where it should be found: At the garden gate – the fences of the farm

Example of the clue Now come back to the one who brought you here
Answer: Facilitator

Next station: Participants should go find the facilitator to finish the game. He/she will take the notes from the participants.

Final step:
The facilitator hands out the last card about the treasure

Clue card: Come to me to get your fair share of apples. You have earned them. (apple tree) / I am watching over the place. (highest tree). This can be adapted by the facilitator based on the location of the treasure hunt.
If the treasure is herb tea seeds, hide the package at a location chosen by the facilitator.

Finishing the activity:

After the activity, the facilitator holds 10 -15 minutes debriefing session to discuss the experience.

Suggested questions to ask the group:

- Do you know other permaculture practices?
- Was there anything that surprised you?
- Do you have a compost at home? A green house? Some aromatic herbs?

According to you, what are the benefits of growing your own food (fruits and vegetables)?

SPECIFIC RULES:

- To play the game there must be max 5 individual participants or 5 teams of two participants.
- The activity has 7 steps
- No phones, no Internet (the first step to more attentiveness! 😊)
- Participants must do the exercises explained on the cards and note down their thoughts and reflections

- Participants must solve the clues/riddles to find out where the next station is located
- There is no point system or time constraint as this would be counterproductive for the mindfulness exercises

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GRAPHIC MATERIAL TO PRINT



OBSERVE & INTERACT

Taking time to observe nature and understand its different processes is important to enable us to react in the best way possible. On a permaculture farm this might mean to observe your garden throughout the day to see where the sunny spots are before planting tomatoes (which need a lot of sun to thrive).

On a personal level, this might mean to observe a certain situation and try to understand the big picture before responding. When being observant and attentive, we can learn a lot from nature and our peers – also how to lead a more sustainable way of life.

BE MINDFUL Wander around the farm for a bit and **observe the different plants** carefully. What colour and size are they? How do they feel and smell? Do you recognise any of them?

REFLECT Try to **find three kinds** of vegetables, fruit, herbs, nuts or cereals you know and **note their names** on a paper. Can you find carrots? Apples? Basil? Hazelnuts? Barley? Then, brainstorm what kind of **dishes** you could make with them and **note one** of them!

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CATCH & STORE ENERGY

Developing systems that collect resources like water when they are abundant, enables us to use them in times of need. For the example of water, this might mean using a rainwater barrel in your garden. Using solar panels and other forms of renewable energy also fits in this category and helps us lead a more sustainable lifestyle.

On a personal level, energy management is equally important. You need to maintain your energy levels by finding a balance between actions that drain a lot of energy from you and actions that make you feel energised.

REFLECT Reflect on what in your life **gives you energy** and what **drains energy from you**. Do you gain energy by going out for a walk or by meeting friends? Does watching TV drain a lot of energy from you? **Note two ways** of restoring energy and two ways of losing it on a piece of paper.

BE MINDFUL Now sit down and restore your brain's energy level: **Close your eyes** for a minute or two and focus on your breath. **Let your thoughts wander like cloud**s in the sky. Try not to hold on any thought that crosses your mind for too long. Then open your eyes again. Can you feel how your brain is refreshed?

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USE & VALUE DIVERSITY

In permaculture, diversity reduces the vulnerability of threats. For example, planting some mint or marigold in your vegetable patch can keep bugs away from your tomatoes or cabbage. A diversity of plants also enriches the earth, while monocultures destroy soil nutrients.

Diversity is equally beneficial in human society. A greater variety of different people enriches our lives: diversity brings new ideas, perspectives and experiences. It helps us grow and find more creative solutions to complex problems.

BE MINDFUL

Sit down and close your eyes. Now **concentrate on everything that is happening around you**. Can you feel the wind on your skin? Can you hear the leaves rustling? Try to notice one thing you can **taste**, two things you can **smell**, three things you can **hear** and four things you can **feel**. Then open your eyes and notice five things you can **see**. There is incredible diversity in nature.

REFLECT

Now, think of a situation in your life when it was most **useful that people around you have different experiences** and different skills. **Note two** of them.

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APPLY SELF-REGULATION & ACCEPT FEEDBACK

Observing yourself and your actions to understand where we are doing well and where we still need to improve is an important part of life. In permaculture, this can mean recognising that we have been doing something in a way that blocks the garden system from prospering – for example watering the plants too much – and changing our behaviour accordingly.

This also applies to your personal life. For example, you can observe your consumption habits and try to reduce, reuse and recycle more. Being able to accept feedback can help you grow as a person. To be able to self-regulate, you also need to be mindful of yourself.

BE MINDFUL

Being mindful of yourself starts with **paying attention to your body** as your mind and body are connected. Lay or sit down in the grass, close your eyes and be still. Bring **awareness to your breath**, notice how the air streams into your lungs and out through your nose. Then try to pay **attention to your toes and feet**, then your lower **legs**, knees and thighs. How do they feel? Move your attention up your body slowly. Concentrate on your **belly**, **back**, **chest** and shoulders. Then on your **arms and hands**, your **neck and face**. When you have concentrated on every region of your body, open your eyes again. This **body scan** can help you recentre on yourself.

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CREATIVELY USE & RESPOND TO CHANGE

Change is an inevitable part of life: everything changes constantly. To be able to appropriately respond to change, it is important to observe first: You need to see the change happening and understand its causes and consequences before responding. Permaculture recognises this and tries to find designs for change. This might mean responding to the changing climate by planting a tree for shade to protect other plants from the searing sun in summers that get hotter and hotter or preparing the garden for winter in autumn.

On a personal level, it is equally important to be able to respond to change. For example, our response to climate change will shape the future of our planet forever. When we adapt our behaviour, we can have a positive impact on the climate.

REFLECT

Reflect on **your capacity of reacting to change**. How do you usually react to change? Can you think of a situation where you were able to creatively use change to your advantage?
Now, brainstorm and **note five things you could change in your lifestyle** for it to become more sustainable. Could you take your bike more often? Eat less meat? Reduce your waste?

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OBTAIN A YIELD

This principle of permaculture means that it is important to ensure that you are getting truly useful rewards from your work. For this, you need to observe and be attentive of your surroundings and yourself. In a garden, this can mean understanding which plants grow well beside each other in order to obtain a good harvest.

In life, this can mean reflecting on your actions and thoughts. Is what you are doing in your life making you happy or is it bringing you further towards where you want to be?

REFLECT

The yield can be tangible like growing your own food, but it can also be more abstract. Reflect on **what your yields are** in life. Do you strive for happiness, health, wellbeing, education, changing the world for the better? **Note five things that are important for your life quality.**

BE MINDFUL

Now, try to **pay attention to yourself**. Being compassionate with yourself is important for life quality. Stand up tall and place your hands on your belly. Breathe deep and feel how your belly rises and falls with your breath. **Acknowledge how you are feeling today**. Then, think about what you could change in your lifestyle to feel better and come closer to your goals.

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GROW YOUR OWN TEA

- Look up **when and where to plant** the different herbs on the Internet.
- **Drying herbs**: Cut the herbs, make bundles and hang them upside down in a cool, dry place. Place a paper bag over the herbs to protect them from dust. When the herbs are dry, store them in airtight containers.
- **To make tea**: You can combine the different herbs as you wish. Use three teaspoons of fresh herbs and one teaspoon of dry herbs per cup. Pour boiling water over them and let them steep for about five minutes.
- Not only growing your herbs and tending to them, but also drinking tea can be a **mindfulness exercise** in itself. Sit down somewhere quite with your cup of tea and try to clear your mind for a few minutes.

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