



TRANSFoodMERS

**TRANSFOODMERS - RESPONSIBLE FOOD SYSTEM YOUTH
GAME CHALLENGE**

TRANSFoodMERS

Outdoor Games Guide to promote Sustainable Food Consumption and Production



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Introduction



Purpose of the guide

This guide is a complete educational resource for young educators, community leaders and environmental advocates looking to incorporate outdoor sports as an engaging way to teach about sustainable food consumption and production. This guide aims to promote a more comprehensive understanding of sustainability ideas by integrating experiential learning with interactive activities and encouraging young people to actively participate in environmental stewardship. The activities included in this guide aim to promote critical thinking, cooperation and problem-solving abilities while emphasizing the significance of making sustainable food choices. Each game is designed to provide hands-on experiences that demonstrate important themes like reducing food waste, supporting local food systems and limiting environmental impact.

These outdoor activities not only provide a fun and engaging learning environment but also empower youth to make sensible choices that contribute to a better planet. Furthermore, this guide helps youth workers by providing practical ideas for adapting games to diverse age groups, ensuring inclusivity and facilitating meaningful discussions. Participants in these activities will gain important knowledge into how their everyday food choices affect the environment, as well as establish habits that are consistent with global sustainability goals. By combining entertainment and education, these games create an immersive experience that promotes environmental responsibility and proactive participation in sustainability efforts.

Target groups

This guide is designed for a wide variety of people as well as organizations dedicated to promoting sustainability and environmental awareness via experiential learning. It attempts to provide educators, community leaders and youth with the tools they need to understand and advocate for sustainable food systems.

Young people: This guide is especially useful for young people from varied backgrounds, whether they live in cities with limited access to green spaces or in rural communities with a close connection to agriculture. The interactive component of outdoor activities allows young people to connect with sustainability themes in a hands-on relevant approach.

Youth workers and educators: This guide will help professionals in non-formal education integrate sustainability education into their operations. By combining outdoor games, they may create dynamic learning environments that foster curiosity, teamwork, and problem-solving while making complicated concepts more accessible.

Environmental organizations: This guide can help non-profit organizations and advocacy groups focused on sustainable food systems improve their outreach and educational initiatives. These games can be used in community events, workshops and public awareness campaigns to encourage sustainable food consumption and production.

Learning Objectives

The activities included in this guide are designed to provide a solid understanding of sustainable food systems and to inspire active participation in sustainability initiatives. Participating in these interactive outdoor games can help young people develop important skills, acquire necessary knowledge and be inspired to make environmentally responsible decisions in their daily lives. The primary learning objectives of this guide include:

Understanding sustainable food systems: Participants will investigate how food is produced, delivered, and consumed, looking for sustainable practices that promote environmental and social well-being. They will discover the value of local food purchasing, organic farming and regenerative agriculture in ensuring a sustainable food supply.

Recognizing the environmental impacts of food choices: Using hands-on activities, participants will investigate the carbon footprints of various foods, comprehend the repercussions of overconsumption and assess how industrial agriculture contributes to climate change. They will gain an understanding of how their personal dietary choices affect the environment and investigate ways to create more sustainable food decisions.

Exploring sustainable farming and biodiversity preservation: Participants will engage in experiential learning that emphasizes the importance of biodiversity in agricultural systems. They will learn how strategies like crop rotation, permaculture and pollinator conservation help to maintain a healthy ecosystem and produce food sustainably.

Developing critical thinking and problem-solving skills: The outdoor games will require participants to consider real-world sustainability concerns and find practical solutions. They will develop valuable problem-solving skills through teamwork and smart decision-making, which will be applicable beyond the exercises in the guide.

Encourage proactive environmental stewardship: Participants will be inspired to take steps toward sustainability, such as decreasing food waste, adopting climate-friendly diets, or supporting community initiatives which promote sustainable food consumption. The games will prepare participants to be advocates for positive environmental change in their communities and beyond.

By reaching these learning objectives, young people will not only learn about sustainable food systems but also have a better understanding of their role in building a more sustainable future. By participating in the activities described in this guide, young people will:

- Gain a thorough understanding of sustainable food systems and how they relate to climate change.
- Recognize the environmental impact of various food choices and production methods.
- Learn about sustainable agriculture, food sources, and biodiversity conservation.
- Interactive and experiential learning can help you develop your critical thinking and problem-solving skills.
- Understand how their personal actions impact broader environmental issues and solutions.





Needs Analysis

Outdoor games provide a unique and successful method to sustainability education, making learning more engaging, memorable, and interactive. According to Kolb's (1984) research on experiential education, learners recall information more efficiently when they actively engage with the content rather than passively receiving it. Games foster a dynamic learning environment in which young people may participate, observe, and discuss complicated concepts such as sustainable food use, making them more accessible and relatable. Furthermore, outdoor games improve cognitive development by encouraging problem-solving and critical thinking abilities. They enable learners to investigate environmental ideas personally, reinforcing abstract sustainability principles through direct experience. Games also increase curiosity and intrinsic drive, making young people more inclined to engage in environmentally responsible practices.

In addition to cognitive benefits, outdoor activities promote teamwork, communication, and collaboration—essential skills for dealing with environmental challenges. Group learning creates interpersonal connections and fosters a sense of collective responsibility for sustainability. Outdoor education has been shown in studies to improve physical and mental well-being, reduce stress, and increase engagement with nature, all of which promote pro-environmental attitudes and behaviours. Another significant benefit of outdoor learning is its adaptability. Activities can be tailored to different age groups, learning styles, and cultural contexts, enabling inclusion and broad involvement. Outdoor games use elements of adventure, discovery, and play to create a hands-on, immersive approach to sustainability education that is both pleasant and effective. When compared to typical classroom-based learning methodologies, the active engagement in these games results in stronger knowledge retention and behavioural change.

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Main learning areas

Sustainable food consumption and production are multifaceted disciplines that contribute to global food security, environmental conservation, and climate resilience. Understanding these fundamental concepts is critical for creating sustainable food systems that can support current and future generations. Scientific research emphasizes the importance of adopting habits that limit climate change, biodiversity loss, and resource depletion. The basic learning areas listed below provide an evidence-based framework for sustainability education in food systems.



Sustainable food production: The agricultural industry is a major contributor to environmental deterioration, causing deforestation, soil depletion, and excessive water consumption. Sustainable food production focuses on approaches like organic farming, regenerative agriculture, and agroecology, which prioritize soil health, biodiversity, and ecosystem stability. Foley et al. (2011) demonstrated that incorporating sustainable farming strategies can increase agricultural yields while reducing negative environmental impacts. Furthermore, sustainable farming encourages circular economies by lowering dependency on synthetic fertilizers and toxic pesticides, which protects both human and environmental health.

Food waste reduction: Food waste accounts for almost one-third of total food production worldwide, adding considerably to greenhouse gas emissions and inefficient resource utilization (FAO, 2013). Reducing food waste through better supply chain management, consumer education, and composting can significantly reduce environmental impact. Scientific studies show that reducing food waste at the consumer level, combined with redistribution measures, can improve food security and reduce demand on natural resources. Composting, in particular, is critical for returning nutrients to the soil, increasing agricultural production and reducing methane emissions from landfills.

Climate-friendly diets: The food industry is a major source of greenhouse gas emissions, with livestock production accounting for approximately 15% of total emissions (Gerber et al. 2013). Switching to plant-based, climate-friendly diets can considerably minimize environmental impact. Willett et al. (2019) recommend dietary changes that favor whole grains, legumes, fruits and vegetables while limiting meat and dairy consumption. Such dietary modifications not only benefit global health but also improve human health by lowering the risk of noncommunicable diseases associated with excessive intake of animal-based products.

Biodiversity and ecosystem balance: Biodiversity is essential for solid food systems because it provides genetic diversity in crops, facilitates pollination, and increases soil fertility. The loss of biodiversity due to industrial agriculture and habitat devastation undermines global food security. According to IPBES (2019), approximately one million species are at risk of extinction, which has obvious implications for agriculture and food production. Crop diversification, conservation agriculture and natural pollinator protection are all examples of sustainable land management methods that are essential for sustaining ecological balance and food system resilience.

Outdoor games collection

The Carbon Footprint Relay

Objective

Poore and Nemecek (2018) discovered that animal-based food production accounts for roughly 60% of agricultural greenhouse gas emissions while providing only 18% of world calorie intake. Furthermore, industrial animal production causes major deforestation and biodiversity loss. Educating kids about this issue encourages them to make more environmentally friendly food choices, such as eating locally sourced, plant-based alternatives with a smaller carbon impact. The purpose of this game is to teach participants about the carbon footprint of various types of food and to help them have a better knowledge of how their dietary choices affect climate change. Many young people are ignorant of the environmental impact of food production, such as greenhouse gas emissions, water use, and land damage. Participating in this relay will teach people how different diets, such as meat, dairy, and plant-based options, compare in terms of environmental impact.

Materials

Flashcards with food items (e.g., meat, vegetables, dairy, processed foods, local produce, imported goods), cones or markers for relay race setup.

Instructions

1. Divide participants into teams and set up a relay race course.
2. Each team receives a set of food item cards.
3. One at a time, team members run to a designated area and place their card in order of carbon footprint impact, from lowest to highest.
4. After completing the relay, discuss the ranking and correct any misconceptions.
5. Engage in a conversation about sustainable food choices and their impact on climate change.

Farm-to-Table Scavenger Hunt

Objective

According to Weber and Matthews (2008), food transportation is responsible for a significant amount of total food-related emissions, with imported items frequently having a substantially greater carbon footprint than locally produced alternatives. Furthermore, seasonal food production decreases the demand for artificial heating, fertilizers, and pesticides, lowering environmental effect. Understanding these concepts allows participants to make informed purchasing decisions that benefit local economies and prevent environmental harm.

The goal of this game is to educate participants on the importance of food source and how purchasing local, organic, and seasonal foods may help to create a more sustainable food system. Many customers are unaware of the environmental costs of food transportation and industrial agriculture, both of which considerably contribute to global greenhouse gas emissions and resource depletion.

Materials

A list of scavenger hunt clues related to food sustainability (e.g., "Find a locally grown fruit," "Identify a food that requires a lot of water to grow").

Instructions

1. Divide participants into small teams and give each team a list of scavenger hunt items.
2. Participants search for items in an outdoor setting (farm, market, garden) based on sustainability clues.
3. Once all items are found, discuss their environmental impact and encourage sustainable purchasing habits.



Eco-Food Pyramid Challenge

Objective

The EAT-Lancet Commission (2019) highlighted that adopting a plant-based diet can greatly reduce carbon emissions, water consumption, and land degradation while also benefiting public health. A diet rich in whole grains, legumes, nuts, and vegetables uses significantly fewer resources than one based on red meat and dairy. This game promotes the idea that eating more sustainably benefits both individual well-being and global health.

This activity attempts to educate participants about the sustainability of various food groups and how their dietary choices affect environmental health. Many individuals rely extensively on processed and high-impact foods without considering the long-term environmental consequences. Participants will learn to prioritize healthy and environmentally friendly foods by visualizing food categories in a sustainability-based pyramid.

Materials

Large food pyramid chart, flashcards with different food items categorized by environmental impact.

Instructions

1. Teams organize food items onto a sustainability-based food pyramid, considering carbon emissions, water use, and biodiversity impact.
2. Discuss the positioning and encourage debate on sustainable eating habits.

Compost Relay Race

Objective

According to the Food and Agriculture Organization (FAO, 2013), about one-third of all food produced worldwide is wasted, accounting for 8% of total global greenhouse gas emissions. Organic waste that decomposes in landfills emits methane, a strong greenhouse gas that traps heat 25 times more efficiently than carbon dioxide. However, composting turns organic waste into nutrient-rich soil additives, lowering emissions and increasing soil fertility.

This game aims to educate participants about composting and how to manage organic waste to decrease landfill accumulation and methane emissions. Food waste is a major environmental concern, and learning how to compost correctly can help reduce waste and enhance soil health.

Materials

Fake food items (plastic or paper representations of compostable and non-compostable waste), compost bin, trash bin.

Instructions

1. Teams race to correctly sort items into compost or trash bins.
2. After the race, discuss common misconceptions about composting and waste management.
3. Encourage participants to adopt composting at home or in their communities.

The Pollination Game

Objective

Klein et al. (2007) discovered that nearly 75% of global food crops require pollination to some extent. However, pollinator populations are quickly diminishing as a result of environmental stresses, endangering food security and biodiversity.



Pollinators must be protected by limiting pesticide use and planting pollinator-friendly habitats to ensure that ecosystems remain healthy.

This game emphasizes pollinators' importance in food production, as well as the threats they face as a result of habitat loss, pesticide use, and climate change. Many participants may be unaware that pollinators such as bees and butterflies are responsible for a significant portion of the crops they consume.

Materials

Paper flowers, small balls (pollen), cups (bee hives).

Instructions

1. Players (acting as bees) transfer "pollen" between flowers and their hive.
2. If obstacles (representing pesticides or habitat destruction) are introduced, see how it affects their efficiency.
3. Discuss threats to pollinators and sustainable farming practices.

Implementation tips for youth workers

Outdoor game implementation involves careful preparation and customization to ensure that all players benefit from the activities. Youth workers have an important role in enabling these activities, making them more engaging, instructive, and inclusive. The following are some critical elements for increasing the impact of these sustainability-focused games.

Adapting for different age groups

Different age groups have different levels of understanding, physical ability and attention span. To keep younger people interested, utilize shorter directions, emphasize more physical interaction, and integrate storytelling aspects. Games can be modified by increasing complexity, requiring more strategic decision-making, or using digital tools like mobile applications for progress tracking and data collection.

Ensuring inclusivity and accessibility

To maximize participation, events should be planned to meet a variety of requirements, including those of those with physical limitations or sensory impairments. This can be accomplished by changing the game rules, making all materials easier to manage and using verbal and visual signals to reinforce instructions. Furthermore, creating a culturally inclusive space ensures that all participants feel represented and can connect to the sustainability topics under discussion. Encouraging a respectful and collaborative environment allows people from various backgrounds to share their experiences and learn from one another.

Facilitating reflection and discussion

Guided reflection is a highly efficient approach to reinforce learning. Following each game, youth workers should conduct talks that encourage participants to apply their learning to real-world sustainability challenges. Open-ended questions, such as "How does this activity relate to your daily food choices?" or "What changes could you make to reduce your environmental impact?" can aid with comprehension and critical thinking. Creating an environment in which participants feel comfortable sharing their ideas and insights increases the educational value of the activities.

Connecting activities to real-life actions

For sustainability education to have a long-term impact, players must be empowered to act beyond the games. Youth workers should make practical ideas on how people might implement what they've learned in everyday life, such as:

- Reducing food waste at home through thoughtful eating and composting.
- Choosing locally sourced and seasonal foods to reduce the carbon footprint of their diet.
- Supporting sustainable farming techniques by making purchases from ethical vendors or participating in community gardening.
- Advocating for sustainability projects in their schools, companies, and local governments.

Conclusion

Outdoor activities offer a dynamic and engaging approach to sustainability teaching by reinforcing important principles through experiential learning. Active participation in these activities helps young people get a better understanding of sustainable food consumption and production, as well as the environmental consequences of their dietary choices. These games help to translate theoretical knowledge into actionable behaviors, creating long-term commitments to sustainability.

By connecting participants to real-world food systems, they foster a sense of environmental responsibility, increasing their likelihood of adopting eco-friendly practices such as limiting food waste, supporting local food markets, and eating plant-based diets. Furthermore, the collaborative nature of these activities fosters social links, encouraging teamwork and collective effort to achieve sustainability goals. Educators and youth workers play critical roles in guiding talks, promoting thoughts and assuring inclusion. By tailoring the games to different learning styles and age groups, they may improve the effectiveness of sustainability education and ensure that participants get valuable insights.

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