STEAM4Climate Worksheet
for students

Project: Sustainable Race

Creator(s): Dariusz Aksamit (Politechnika Warszawska)

Contributing organisations: KGP, IDL, WUT

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Introduction

Welcome to the game “Sustainable Future”!

Your goal is to work together to manage resources and plan actions that will help you build a healthy, environmentally friendly community. Throughout the game, you will take care of CO_2 emission levels, water consumption, and the health of your characters by choosing meals and activities.

Each day in the game is divided into phases in which you select meal and activity cards, aiming to keep all indicators within optimal ranges. At the end of the day, you draw event cards that introduce unexpected changes and challenges for the next round.

You earn tokens for good management and then jointly decide which technologies to implement to further improve the conditions in your community. The game is cooperative and strategic in nature, and every choice matters—both for individual outcomes and for the shared success of the group.

Good luck, and have fun building a sustainable future!

Game Components

Printable versions of all components are available on the project website:

https://project-spaces.eu/s4c/steam4climate-toolkit/steam4climate-toolkit-sustainability-race/

Main Board

The main board displays the day-phase sequence, showing all players which phase of the day is currently in progress. It also includes designated spaces for the card decks used in the game:

Phase of the day on the Main Board

Each round represents one full day – all players move through the day together.

During each phase, players take turns (one by one) performing the required action. Move through the phases in order and apply the effects of each card you play:

Phase of the day		Action
	Breakfast	It's time to start the day. Draw a Meal Card and apply its effects to your board. Every day begins with a choice.
	Morning activity	What's your plan for the morning? Draw an Activity Card and apply its effects. Your day is already taking shape.
	Lunch	Midday reset. Draw another Meal Card and update your indicators. Small decisions add up.
	Afternoon activity	The day continues. Draw an Activity Card and apply its effects. Think ahead - you're building momentum.
	Dinner	Last meal of the day. Draw a Meal Card and apply its effects. This is your final move before the day ends.
	Technology selection	Now you may choose to invest in a Technology Card. If you do, pay the required tokens and apply its effects. Smart upgrades can change your strategy.
	Time to bed	Pause and check all indicators. If the conditions are met, the group moves to the next day. If not, the game ends – and you rethink your strategy. This is also the time to draw an Event Card for the next day.

After the last player finishes the phase, the first player moves the group marker to the next field.

When you pass the last field, the marker returns to Breakfast and a new day begins.

It's up to you to decide for how many "days" you would like to play – or you can set up a challenge to play as long as possible! It's not easy for the first time.

Card Decks on the Main Board

There are four separate card decks on the main board:

Card back	Card description	When to draw?
	**Meal Cards:** These cards are used during meal phases, allowing players to choose what their character eats. Each meal affects calorie intake and health status on the player's individual board.	
	**Activity Cards:** Activity cards represent everyday actions that influence a player's health, calorie expenditure, and environmental impact. They are played during specific phases of the day, between meals.	
	**Technology Cards:** These cards can be purchased jointly by the players using earned Merit Tokens. Technologies introduce permanent upgrades that can reduce CO_2 emissions, increase water resources, or improve overall well-being.	
	**Event Cards:** These cards are drawn at the end of each day and introduce global changes or challenges that affect the entire group - for example, by altering environmental conditions or resource availability.	

Each of the four decks has a distinct role: Meal and Event cards shape daily decisions and short-term challenges, while Technology cards enable long-term strategies and improvements, including responding to random events or adapting to long-term changes.

Meal, Activity, and Event cards are drawn sequentially from their respective decks, while Technology cards are laid out next to the board so players can jointly purchase them at the end of the day.

Indicators

In this game, every choice you make changes something. Your meals, activities, and technologies affect both your personal indicators and the shared environmental indicators.

But it works both ways: the state of the environment also influences you. If global resources become unstable, your well-being and survival are at risk. You are part of the system — and the system reacts to what you do.

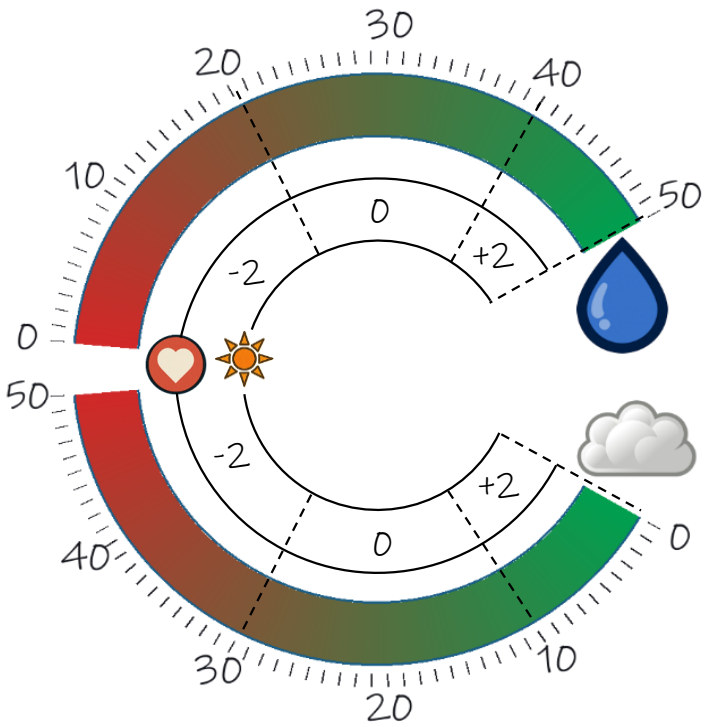
Icon	What does it represent?
	Water use and pressure on water resources are represented by the water icon. Values are based on relative differences between products and practices (e.g. water-intensive vs low-water foods), not on litres or cubic meters.
	GHG values represent relative climate impact, grounded in real-world emissions associated with production, transport, and consumption. Instead of calculating CO_2-equivalent emissions, items are classified into low, medium, or high impact categories, reflected by small integer values.
	Calories represent energy intake from food, grounded in real nutritional value. In the game, foods are grouped into low, medium, and high energy categories rather than measured in kilocalories. For example, a small snack may provide +1, while a more energy-dense meal, such as a burger, may provide +4. The values express *relative contribution to meeting basic needs*, not exact dietary recommendations.
	Well-being refers to the overall quality of life, encompassing health, comfort, stability, and social factors. It is influenced by food quality, environmental conditions, and access to resources. The scale reflects relative impact on living conditions rather than medical or psychological metrics.
	Contribution Tokens represent a **currency of cooperation**. They reward players for balancing their own well-being while also protecting shared environmental resources. Tokens are earned both individually, for maintaining personal stability, and collectively, when the group keeps common resources within safe limits. This mechanism highlights that sustainable outcomes depend on **aligning individual choices with collective responsibility**, and that cooperation enables solutions that cannot be achieved alone.

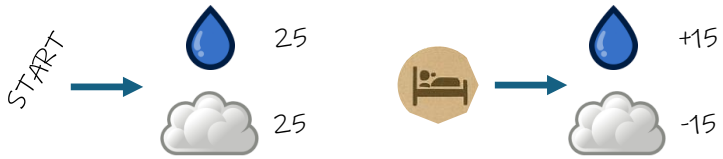
Global Indicators Board

The Global Indicators show the condition of our shared environment.

There are two main scales:

- Water – we are draining water from the environment. The more we use it, the lower this indicator moves.
- Greenhouse Gases (GHG) – we are emitting gases into the atmosphere. The more we emit, the higher this indicator rises.





These global conditions affect everyone. When water levels are safe and emissions are low, the environment is stable – and your well-being can remain strong, as you're looking with hope into the bright future. But during extreme situations (like drought, heat waves, or floods), environmental stress increases – and your well-being may deteriorate.

You are not playing alone. The planet reacts to what all players do.

This is reflected by the well-being icon – if at the end of the “day” you are in the red region of the indicator, you are losing two well-being points; if you stay in the neutral region, nothing happens; if you keep resources at a level better than you found initially, the green zone indicates you should gain two points. The same rules apply to Contribution Tokens. In the worst case, if you drain more water than is available and emit more than nature can sustain, you lose 4 points in each category. We hope that thanks to your responsible decision, you’ll have a plus 4 in each category!

Thanks to natural processes, the Earth can regenerate itself. The **water cycle** replenishes freshwater, and the **carbon cycle** helps balance greenhouse gases – but only within certain limits. If we push the system too far, nature cannot keep up.

Through your daily choices – and sometimes with the help of technology – you can reduce your impact and try to live more sustainably.

At the start, we are in the middle of both scales, with a value of 25.

At the end of every “day”, replenish 15 units of water and reduce GHG by 15.

Please note that this set of rules works best for 3 players – feel free to adjust the starting conditions or the game's difficulty by changing the replenishment rate!

PS. We leave it up to the players' creativity on how to indicate the values – two barbecue sticks pined in the middle worked great during our play!

Cards

So far, you've seen the backs of the cards – now it's time to look at real examples. Each card represents a choice, event, or opportunity that affects you and/or the environment. When you play a card, you immediately apply its effects to the relevant indicators. Each time you need to decide on trade-offs. Look carefully at the symbols and values – they show how your decision changes the system.

Activity Card

Event Card

Food Card

Technology Card

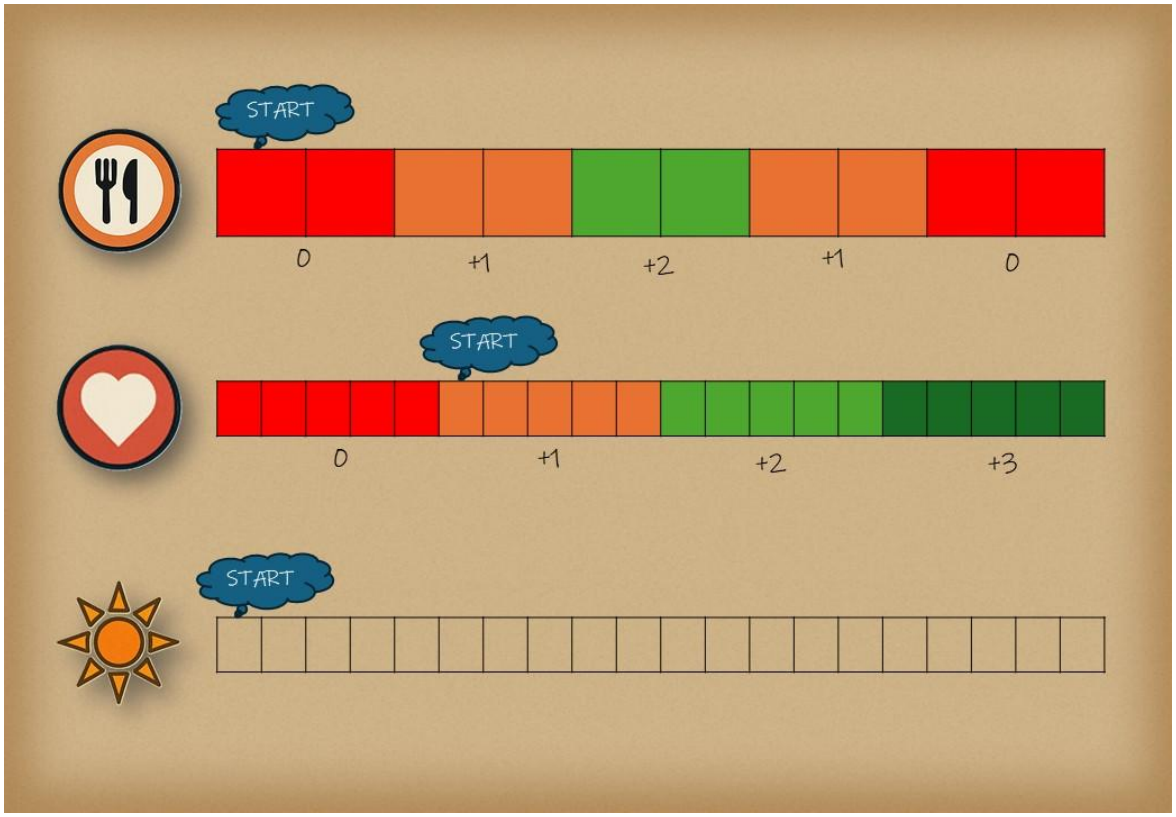
Each card has a colour, a header indicating its type, an icon, a title, a set of indicators, and a description. On our project website, you can download the cards we designed, as well as empty cards for each type, all available in English, Polish, French, German, and Greek. Additionally, an online card generator can be used for final co-authored cards:

https://steam4climate.lovable.app

Note that some cards were created by students in different national contexts – if you find some values incorrect, discuss them with your co-players and feel free to modify them. But be rational – be ready to justify your proposal of values!

Individual Player Boards

Each player has their own board with individual tracks for Calories gained, Well-being, and Contribution Points.



Every day starts the same – you begin **hungry**, with your token at the start of the scale. During the day, you gain calories from **Meals** and sometimes lose them because of **Activities**. Be careful: being hungry is unhealthy – but overeating isn't good either. Try to stay within the green range!

Your well-being starts at the indicated position. Your daily choices will move it up or down. Make decisions that push your marker toward the greener zone - that's where stability and balance are.

The numbers shown below the Calories and Well-being scales represent potential rewards you earn at the end of the day. If your indicators finish in strong positions, you gain Contribution Tokens. The same principle applies to the Global Indicators – collective success brings collective rewards.

Tokens and Technology Selection

Contribution Tokens depend on both your individual performance and the group's collective performance. If you take care of yourself and protect shared resources, you earn more.

These tokens are used to purchase Technology Cards. Some technologies are cheaper and give small improvements. Others are expensive but offer stronger, long-term advantages – maybe sometimes you need to save your tokens for the next round.

Technology purchases are made collectively. In most cases, large investments are too expensive for one player alone, which means you must act as a society.

There are no fixed rules for how you organise your decision-making process.

You can for example:

- vote,
- debate,
- negotiate,
- toss a dice,
- give more influence to players who contribute more,
- or decide that everyone must contribute equally.

This is not physics. It's society. You create the rules.

After making your decision, reflect:

- How did you organise the process?
- Who had more influence?
- Was it fair? Was it effective?
- Why did you choose that system?

How you decide may matter just as much as what you decide.