Facilitator's Guide: Environmental Musical Chairs Simulation

(a.k.a Environmental Human Impact Musical Chairs Simulation)

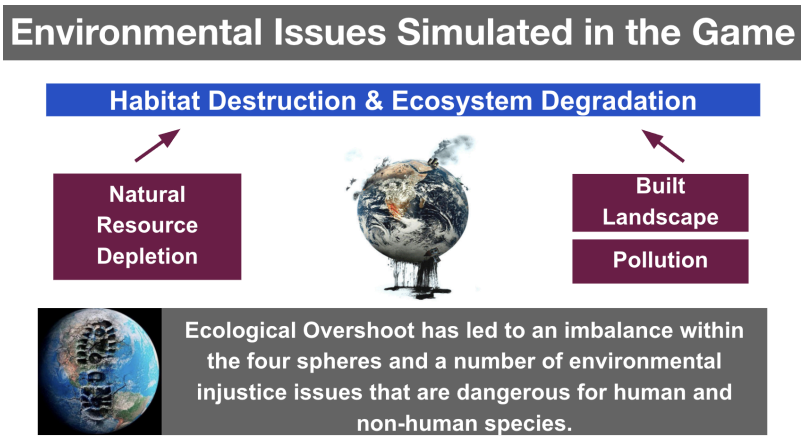
The development and curation of this simulation has been overseen by Andra Yeghoian, while serving in a variety of roles as an educator: Classroom Teacher, Director of Sustainability (Bishop O'Dowd), and Environmental Literacy and Sustainability Coordinator (San Mateo County), California Environmental Literacy Initiative Co-Chair and Project Director, and Chief Innovation Officer (Ten Strands).

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Purpose and Overview: This experiential simulation is a kinesthetic demonstration of human impact on the environment. The basic premise of this simulation is to create a visual metaphor of non-indigenous human impact (stemming back to as early as the agricultural revolution, but accelerated during the industrial revolution). By the end of the simulation, participants have a visual metaphor of ecological overshoot and engage in a meaningful reflection of causes and effects.

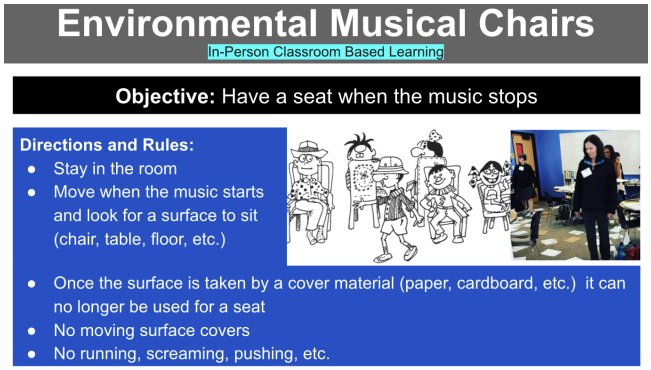
Utilize the bookmarks in the table below to navigate to different sections of the facilitator guide.

Section Bookmark	Section Description
Facilitator Preparation	Before facilitating the Climate Impacts simulation, it is recommended that facilitators become familiar with key terms and concepts related to the environmental and climate crises. It is also recommended that facilitators explore techniques for facilitating an experiential simulation about the environmental and climate crisis utilizing trauma-informed practices, and integrating principles of environmental justice and equity. *This section provides facilitators with an overview of different activities and resources they can use to prepare to facilitate the Climate Impacts Simulation.*
General Procedures for the Simulation	This section provides facilitators with an overview of the general procedures for facilitating the Environmental Musical Chairs (a.k.a. Human Impacts Musical Chairs) simulation, and access to resources.
Extension Resources	The table in this resource section includes great resources for extending the learning beyond this simulation with literacy and STEM activities.



I. FACILITATOR PREPARATION FOR THE SIMULATION

A) Review Video and Slide Deck Resources: Ahead of facilitating the simulation review the slide deck and the example facilitation of a virtual synchronous session of Environmental Musical Chairs.

	
Video example of the virtual synchronous version	Access to slide deck with directions for all versions

B) Content Preparation: Before facilitating the Musical Chairs simulation, it is recommended that facilitators become familiar with key terms related to the environmental and climate crises, and that facilitators have a strong background and understanding of human impact on the planet.

- **Key Terms and Background for Environmental and Climate Crises and Action**:
  - See Appendix-A for a glossary of relevant terms and definitions
  - Review the Shared Narrative for the environmental and climate crisis
  - Explore the Research WebQuests to learn more about each topic:
    - Human Impact and Ecological Overshoot WebQuest
    - Climate Change WebQuest

- **Trauma-Informed Practices (TIP)**: Addressing crisis related topics with communities is challenging as participants in facilitated activities may have experienced or witnessed the impacts of this crisis and will therefore have heightened emotions, or participants may be unfamiliar with the urgency of the crisis and can get quickly overwhelmed by the realities of the content being presented. It is highly recommended that facilitators utilize a trauma informed practice during this lesson. Resources for getting started can be found here:
  - Resources of Addressing Eco and Climate Anxiety with Trauma-Informed Practices
  - Talking to Students about Climate Change: Elementary and Middle/High School

- **Environmental and Climate Justice**: It is highly recommended that facilitators of activities related to the environmental and climate crises have a foundational understanding of environmental and climate justice topics and issues, to determine when and where to integrate these concepts.Utilize the following resources to learn more:
  - Environmental and Climate Justice Definitions and History
  - Environmental and Climate Justice Resources for Teachers and Students

II. General Procedures for Facilitation the Simulation

This section provides facilitators with an overview of the general procedures for facilitating the Environmental Human Impact Musical Chairs Simulation, and access to resources for facilitating.

Example Facilitator Slide Deck: Musical Chairs Simulation Slide Deck *(please make a copy to customize)*

Activity & Time	Prompts and Materials
Simulation Framing *(10-15 minutes)*	• **Earth as Our Common Home and Fourth Spheres** *(5-10 min)*: The simulation begins with an inquiry based reflection on the Earth as a common home for all living species, and an overview of the Earth's Four Spheres. Participants are invited to share their understanding of how humans rely on a healthy planet for basic survival, and also for human aspirations beyond needs. • **Shared Narrative for the Environmental and Climate Crisis** *(5-10 min)*: Introduce the concept that the world's non-indigenous populations are mostly living out of balance with the Earth's four spheres.*
Environmental Musical Chairs Simulation *(5-10-min)*	*Note: There are a number of variations for this simulation depending on whether or not the simulation is being conducted synchronously in the same room or virtually, or whether or not it is being done as an asynchronous task. See the Musical Chairs Simulation Slide Deck Example to see variation of slides that one can use for facilitating this simulation.* → Play 3-4 rounds of musical chairs for 30-40 seconds each round. *Song Suggestion: Don't Stop Me Now by Queen* Similar to regular musical chairs, participants have to find a place to sit when the music stops, and are directed to move and change their seating position when music is playing. However, unlike regular musical chairs, instead of removing chairs to sit on, the facilitator (or participant if virtual) will cover seating areas (floors, tables, chairs, beds, etc.) with paper/cardboard (or if playing at home clothing, towels, or blankets). Once a surface (floor, tables, chairs, etc.) is covered by paper students can no longer sit in that spot. After a few rounds it becomes uncomfortable and hard to find a place to sit.

Reflection Questions *(10-20-min)*	After you have played 3-4 rounds, use the debrief questions from the Musical Chairs Simulation Slide Deck Example to engage participants in a discussion about key takeaways:
	• **Reflection Part 1:** What happened? How did it feel emotionally to play? What would happen if we played longer?
	• **Reflection Part 2:** Is there a way to win?
	  ○ Participants will usually share many ideas like marching in place, sitting on each other, trying to prevent the teacher from putting the materials down (or if they are remote and alone going very slowly to put materials down). The facilitator should encourage a range of answers and let them be silly.
	  ○ ANSWER: The only way to "WIN" the game is to turn off the music! The music is what is causing the materials to be covering the surface. So if we turn off the music then no one will put materials down. That is why we like to use "Don't Stop Me Now" for this game.

	• **Reflection Part 3**: What environmental issues might this game represent?
	  ○ The facilitator should first allow people to share what they think are the environmental issues.
	  ○ Then the facilitator should summarize all the great ideas people shared by going over the core concepts of human impact: Natural Resource Depletion, Build Landscape, and Pollution, which all culminate to cause habitat destruction and ecosystem degradation for ALL LIVING THINGS (including humans).
	• **Final Reflection Question:** As students are cleaning up, ask them to reflect on the final question: What is more time and resource intensive, cleaning up human impact or preventing human impact from the start?

Trauma Informed Activity *(time varies)*	The simulation intentionally embeds the trauma-informed practice of inviting participants to be mindful of their emotional reaction to the material, and their sense of urgency and to discuss both of those reactions with other participant members. At the conclusion of the simulation, it is recommended that participants have a further opportunity to explore their emotions. This can be done through a variety of activities including, but not limited to the following: • Climate Ribbon - Grief, Rage, and Hope Activity Template *(15-45 minutes)* • Connection to Nature Activities *(time varies)*: This document includes over 15 different activities for supporting students to foster a healthy connection with the natural world. Many can be used as a trauma-informed activity at the end of an emotionally heightened lesson.

*It is highly recommended that facilitators acknowledge that the vast majority of human history has been in balance with the four spheres. Example information to share is the following: *Until relatively recently, humans have lived sustainably within those four spheres - this is sometimes referred to as Indigenous Wisdom (Seven Generations). Today the world's indigenous peoples (5% of the global population) call 22 percent of the global land surface home. They live in areas where you find about 80 percent of the planet's biodiversity and much of the world's non-commercially exploited land and many of its remaining mineral and forest resources, major rivers, fossil fuels and sources of renewable energy. To learn more about indigenous people visit: United Nations: State of the Indigenous People.*

III. Extension Resources and Activities

The table below includes great resources for extending the learning beyond this simulation. Note the resources support literacy and STEM integration.

Resource Type	Activities and Resources
Literacy Extensions	Choose a book from the Solutionary and Environmental Book List that connects to the game we just learned. Read it, and explain what happened in the story, and how it connects to the concepts in the game we played. *The Lorax* is the perfect book for this game!
Research WebQuests	These Research WebQuests have been designed for secondary (6-12) students to explore topics related to the Environmental and Climate Crisis. ● Human Impact and Ecological Overshoot WebQuest** ● Climate Change WebQuest
Ecological Footprint Activities (STEM)	Without shaming participants, engage in a STEM activity related to calculating out ones ecological footprint. Then engage in a discussion about the individual and collective results. ● Calculate your Individual at: www.footprintcalculator.org ● Ecological Footprint Definition: Ecological Footprint Accounting measures how fast we consume resources and generate waste compared to how fast nature can generate new resources and absorb our waste. ● Ecological Footprint Explained: https://www.youtube.com/watch?v=fACkb2u1ULY
Solutionary and Justice Based Activities	Audiences who participate in the Climate Impacts Simulation will want to channel their strong sense of urgency into something solutions oriented and/or explore further resources to deepen their understanding of the impacts of this crisis on different communities. It is recommended that facilitators create the time and space for participants to take part in different activities that can further their exploration of the climate crisis through the lens of solutions and justice. Recommended resources for this further exploration include, but are not limited to: ● Explore Environmental Sustainability Frameworks ● Complete a Solutionary Design Challenge ● Explore Environmental and Climate Justice Resources for Teachers and Students

***Note this WebQuest could be assigned ahead of time for homework*

APPENDIX A - KEY TERMS FOR ENVIRONMENTAL AND CLIMATE CRISIS AND ACTION

Experiential Simulation: Simulations are an experiential learning method in which learners model an actual scenario, system, or phenomenon.

Human Impact: Human impact refers to the impact that humans have on the four spheres of the planet (hydrosphere/water, biosphere/life, geosphere/land, atmosphere/air). Non-indigenous humans have increasingly had negative impacts on the environment such as habitat destruction and ecosystem degradation (ex: natural resource depletion, human built landscape, and pollution). Increasingly, people refer to current human impact with the term “Anthropocene”, which refers to the possibility of referring to this time as a new geological time period in Earth’s history where the single species of *Homo sapiens* – has had such a powerful impact on the planet’s systems.

Earth’s Four Spheres: The earth can be described as having four spheres: the atmosphere (air), hydrosphere (water), geosphere (land), and biosphere (life). To learn more about these spheres visit NASA’s four spheres overview.

Ecological Overshoot: When a population’s demand on an ecosystem exceeds the capacity of that ecosystem to regenerate the resources it consumes and to absorb its carbon dioxide emissions. Humanity's annual demand on the natural world has exceeded what the Earth can renew in a year since the 1970s. This is largely due to damage and overuse from natural resource depletion, human built landscape, and pollution.

Global Warming and Climate Change: The Earth's climate is changing and getting warmer in large part due to humans adding heat-trapping greenhouse gasses to the atmosphere. Because the Earth's air, water, and land are all linked to the climate, warmer temperatures are causing climatic changes around the world – on land, in the oceans, and in the atmosphere. These changes in the climate are dangerous to people, plants, and animals.

Environmental and Climate Action in K-12 Schools: *Environmental and Climate Action* serves as an umbrella term for a number of different actions that schools can take to integrate environmental and climate friendly principles and practices across a school communities campus, curriculum, community, and culture. Example terms that fall under this umbrella include, but are not limited to the definitions below - *Additional terminology for environmental and climate action in general and in schools can be found in the Environmental and Climate Action in TK/K-12 Schools Terms and Frameworks WebQuest or the General Sustainability Definitions and Frameworks WebQuest.*

- **Environmental Literacy**: An environmentally literate person has the capacity to act individually and with others to support ecologically sound, economically prosperous, and equitable communities for present and future generations. Through lived experiences and education programs that include classroom=based lessons, experiential education, and outdoor learning, students will become environmentally literate, developing the knowledge, skills, and understanding of environmental principles to analyze environmental issues and make informed decisions (Definition from the CA Blueprint for Environmental Literacy - 2015).
- **Climate Literacy:** Climate Literacy is short for Climate Science Literacy, which is an understanding of human impacts on climate and the impacts of climate on human systems. is able to make informed and responsible decisions with regard to actions that may affect climate.

- **Environmental Sustainability**: *" ...Making sure the current generation can meet its needs while at the same time making sure future generations can meet their needs… and progress and change should be in harmony and enhance both current and future potential to meet human needs and aspirations..." (*Definition from *Our Common Future* also known as the Brundtland Report which was published by the United Nations World Commission on Environment and Development (WCED) in 1987).
- **Green Schools**: This term refers to schools that strive to achieve success in three pillars: 1) reducing environmental impacts and costs, 2) improve occupants health and performance, and 3) increase sustainability literacy.
- **Climate Mitigation**: Mitigation means making the impacts of climate change less severe by preventing or reducing the emission of greenhouse gasses (GHG) into the atmosphere.
- **Climate Adaptation/Resilience: Resilience** refers to the capacity of individuals, communities, institutions, businesses, and systems to survive, adapt, and grow, no matter what kinds of chronic stresses and acute shocks they experience. **Climate resilience** means being resilient to the impacts of climate change. This is sometimes referred to as **climate adaptation or being climate ready**, which is the process of adjusting to the current and future impacts of climate change.
- **Solutionary Teaching and Learning: Solutionary teaching and learning** involves the process of students analyzing "wicked" problems, identifying the inhumane and unsustainable systems that perpetuate them, and then developing solutions that do the most good and least harm for all. *Learn more at the Resource Center for Environmental and Climate Action Changemakers in K-12 Education and the Institute for Human Education*.

Environmental Justice and Equity: Environmental injustice can be defined as the disproportionate exposure of communities of color and the poor to pollution, and its concomitant effects on health and environment, as well as the unequal environmental protection and environmental quality provided through laws, regulations, governmental programs, enforcement, and policies. This term arose from the fact that some communities are disproportionately subjected to higher levels of environmental risk than other segments of society. **Environmental justice** and **environmental equity** describes a country, or world, in which no single group or community faces disadvantages in dealing with environmental hazards, disasters, or pollution. For more resources on environmental justice and equity, visit the *Resource Center for Environmental and Climate Action Changemakers in K-12 Education*.

Systems Thinking: Systems Thinking is a holistic thinking style that focuses on identifying ways that a system's parts interrelate, and how systems work over time and within the context of larger systems. Humans need to utilize systems thinking in order to solve the climate crisis. *To learn more explore the Systems Thinking WebQuest*.

Trauma Informed Practices (TIP): Trauma is the response to a distressing or disturbing event (or series of events/factors) that overwhelms an individual's ability to cope, causes feelings of helplessness, diminishes their sense of self and their ability to feel the full range of emotions and experiences. Trauma can be caused by experiencing or witnessing the traumatic situation, and can happen in ways that are acute (single event limited in time) or chronic (multiple traumatic events/factors over time). Research has begun to highlight the important role that environmental and climate crises can play in health and trauma at the individual and community levels. Schools that use **trauma informed practices** (TIP) are prepared to recognize and respond to those who have been impacted by traumatic stress of all kinds, including those related to environmental issues. Explore environmental

and climate aligned trauma informed practices at the *Resource Center for Environmental and Climate Action Changemakers in K-12 Education*.

Changemaking: Environmental and Climate Action in TK-12 Schools involves ***paradigm shifting change.*** In order to bring that kind of change it is important for solutionary changemakers to understand the dynamics of change, and to be able to apply change theory to their own context. There are an assortment of change theories that can be leveraged when thinking about bringing change to a community: I) Evaluating the Readiness for Change, and II) Preparing, Planning, and Designing Change Initiatives, III) Managing Change, IV) Disruptive Change. Explore these changes theories in the Change Theories for Environmental and Climate Action Solutionaries.