

SDG13 Climate Change Engage Game Design



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Lesson 11: What are Serious Games?

Subjects: Design, Environmental Science, Game Design, Geography, Science, Technology

Lesson Title and Summary: What are Serious Games?

The gaming industry has been growing fast and the youth are highly attracted to playing (video) games. If more of those games could be 'serious', multiple individual and societal benefits could be unleashed. This lesson introduces learners to what serious games are and their purposes, describing the characteristics of games relevant to better integrating nature in human settlements.

Vocabulary: Games' Purposes (educational, interventional, for research); Serious Games; Sustainability; Wicked Questions

In this lesson, the learner will:

- Develop an understanding of what serious games are, and their purpose
- Begin to understand how serious games can be used for better integrating nature in human settlements
- Assess and reflect on serious games

Materials

- Video: 'What are Serious Games?'
- Worksheet: Active Listening
- Support Sheet Serious Games Directory (Istrate and Hamel, 2022)
- Worksheet: Game Review
- Access to internet
- Paper / Pens

4 QUALITY EDUCATION



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



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Activity Instructions

Activity 1 What are serious games? (20 mins)

1. Give each learner a copy of Worksheet: Active Listening and ask them to read over the questions, underlining the key words.
2. Play Video: 'What are Serious Games?' and ask learners to complete the activity sheet.
3. Go over answers in pairs, and then as a whole class.
 1. Yes
 2. Complex; no single solution
 3. 17th
 4. Compete; cooperate (both)
 5. Purposeful
 6. Urban
 7. GIS - geographic information system gathers, manages, and analyses data
 8. Sustainable Development

Activity 2 Playing Serious Games (30 minutes)

1. Either in pairs or individually play digital games (on pads/laptops/computers) with the class by sharing the links from the Media Box.
2. After each game, ask the learners to do a quick analysis of the games and share with the class.
3. Use prompts to facilitate discussion after each game
 - How was the game environment? (Describe in short sentences).
 - Who is expected to be playing this game (target groups)?
 - What outcomes would the game designers expect after playing this game?
 - What interested you in this game?
 - What do you think should be improved?

Prompts to facilitate reflective discussion after playing all games:

- Which game elements you liked the most considering all games played? Why?
- What elements would you keep/discard in a new game you would develop? Why?
- What audience would you target in a new game and what do you think would catch their interest?

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One opinion they have about the activities, what did they like or how they would improve them

Use Post-its or a mentimeter survey - www.mentimeter.com to gather reflections

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EXTENSION / REDUCTION ACTIVITIES

Reduction: for a shorter lesson, select 1 or 2 games including at least one educational game.

Extension: for a longer lesson, pause the Serious Games video from activity 1 at 2:25 mins and ask learners to give examples of games they know (not necessarily 'serious') for each category

- analogue/PC games
- for children/youth/adults;
- single player/multiplayer
- with costs/for free).

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

- Activity 1 video 'Introduction to Serious Games' <https://youtu.be/RcymwwgMHDo>
- What is GIS, an overview - <https://www.esri.com/en-us/what-is-gis/overview>
- Educational Game: Urban Climate Architect (choose English): <https://www.cen.uni-hamburg.de/press/entdecken/stadtklimaarchitekt.html>
- or additional educational game Sustainable Shaun: <https://www.shaunthesheep.com/games/sustainable-shaun>
- Games4Sustainability (games database searchable by SDGs): <https://games4sustainability.org/gamepedia/>
- Climania: <https://climaniathegame.com/about-climania/>
- The Climate Smart game and workshops <https://climatesmart.ie/about> can also be used for longer-term training.

Local Trip / Expertise / Additional Work and Assessments

- Invite game designers and expert ecologists/nature scientists to speak to the class. Ask the learners to identify what elements could be more suitable to introduce in the games from the knowledge expertise the ecologists shared while considering game development principles indicated by game designers.

Possible contacts:

- UCD computer science – game development module https://hub.ucd.ie/usis/!W_HU_MENU.P_PUBLISH?p_tag=MODULE&MODULE=COMP30540
- TCD - Game Design programme <https://www.tudublin.ie/study/undergraduate/courses/game-design-tu984/>
- UCD Earth Institute - [https://www.ucd.ie/earth/whatwedo/researchthemes/ecosystemsevolution/give some leads](https://www.ucd.ie/earth/whatwedo/researchthemes/ecosystemsevolution/give%20some%20leads)

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Video: What are Serious Games?

<https://youtu.be/RcymwwgMHDo>

Fill in blanks or circle the answers to the questions below.

1. Serious Games are games used for study:

Yes No

2. Wicked Questions are _____ problems with

3. Military games started being played since the _____ century.

4. In Serious Games, the players can

Compete Cooperate

5. In one word, serious games are _____

6. 'Urban games' address _____ problems.

7. 'Geo games' are often supported by _____ technology.

8. 'Games for sustainability' address societal challenges in the area of

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No.	Name	Game's Description	Time to Play	Players	Target Group	Distribution (Digital vs Board Game)	Play mode (Online/ In-person)	Charges Fee vs For Free	Links to the Game's page/ Materials	Developer
1	Sustain	Sustain is a board game about urban sustainability, developed in an Erasmus+ project as support in high-level education. Each player represents a different department in a growing city - facing many issues and solving them based on other players' decisions.	<1h	Multiplayer	Youth & Adults	Digital	Online	For Free	Official page: http://sustainerasmus.eu/wp/ Where to play: https://tabletopia.com/games/sustain-erasmus EU project outputs and reports: http://sustainerasmus.eu/wp/intellectual-outputs/	Erasmus University
2	Climate Smart	Players have five years to climate-proof Dublin (starting year is 2045). The core action of the game is defending against floods through adopting different measures (grey, green and blue, or mixed infrastructure; and policy). One round represents one year.	N/A	Single Player	Youth	Digital	Online	For Free	https://climatesmart.ie/game	Trinity College Dublin, Ireland
3	Urban Climate Architect	Urban Climate Architect allows players to create their own environmental-friendly city - building houses, streets and green spaces, employing citizens in offices and industrial plants, while observing the effect on the city's climate. The impact of each element is informed, and the game is evaluated when finished.	<1h	Single Player	Youth & Adults	Digital	Online	For Free	https://www.cisap.de/stadtlimaarchitekt/	Hamburg University Cluster of Excellence CI&AP
4	Amenajeju	Amenajeju is a game structured according to the coupled infrastructure system (CIS) framework that categorizes the entities of a social-ecological system in four main categories (resources, resource users, public and private infrastructures, and public infrastructure providers). Resource systems, resource users, and infrastructures are represented as elements of the game board. Players experiment the interplay of socio-ecological interdependencies.	>2h	Multiplayer	Adults	Board Game	In-Person	For free	https://www.researchgate.net/publication/333916660_Analyzing_coupled_infrastructure_systems_through_multi-scale_serious_games_in_Languedoc-France	Bonte, Therville, Bousquet, Abrami, Dhenain & Mathevet (2019)
5	Block by Block Minecraft	The UN-HABITAT Minecraft is a game that targets community participation, youth participation, use of images, plans, Google Maps and other available material to model public space as a community participation tool. The Minecraft models are then presented to stakeholders.	Varied	Multiplayer	Youth & Adults	Digital	Online & In-Person	For Free & Charges Fee	https://www.blockbyblock.org/resources https://unhabitat.org/manual-using-minecraft-for-community-participation https://unhabitat.org/sites/default/files/download-manager-files/Using%20Minecraft%20for%20Youth%20Participation%20in%20Urban%20Design%20and%20Governance.pdf	Mojang with UN-Habitat & Block by Block
6	Buy, Sell and Trade	Buy, Sell and Trade is a role-playing exercise that demonstrates the multiple benefits of preserving ecosystems for the services that they provide. It functions as support tool for training decision makers and local stakeholders on managing natural resources.	>2h	Single Player & Multiplayer	Adults	Board Game	In-Person	Charges Fee	https://www.lucn.org/bo/node/3188	WBCSD and IUCN (2008); Gissi & Garramone (2018)



7	Eco-GAME (BONUS MARES)	Eco-GAME is a game that is an interface between science, policy and society. It is a participatory and evidence-based appraisal of existing (scientific) knowledge, methods or combinations, providing a matrix to assess the adequacy of scientific knowledge and methods for different purposes (attributes), by aggregating the four types of capital: Natural, Human, Social and Economic.	N/A	Multiplayer	Adults	Digital	Online & In-Person	For Free	https://www.bonusportal.org/files/6911/BONUS_MARES_Policy_brief_2_-_playing_and_evidence_to_assess_the_quality_of_scientific_knowledge_for_evidence-based_decision_making.pdf	EU (BONUS MARES Project); University of Tartu; Geomar; E2 Research; PTT;
8	Floating City	Floating City is a brainstorming game for public spaces in which players can create and publicize their ideas and suggestions for city projects.	N/A	Single Player & Multiplayer	Adults	Digital	Online	For free	http://play-uc.net/?page_id=529	Urban Europe; Faculty of Spatial Sciences, University of Groningen; The Netherlands;
9	Flood Resilience Game	Flood Resilience Game is a game that allows players to explore and learn about flood risks and community resilience in river valleys. It helps participants identify novel policies and strategies to improve flood resilience, as players take different stakeholder roles (workers, farmers, entrepreneurs, financial services agents), local government and water board officials.	>2h	Multiplayer	Adults	Board Game	In-Person	For Free	https://floodresilience.socialsimulations.org/#main	Centre for Systems Solutions (CRS), International Institute for Applied Systems Analysis (IIASA), Zurich Flood Resilience Alliance
10	Game of Floods	Game of Floods is a game where players manage community assets, which are flood-prone. Through strategizing on protecting their parcels, while considering community well-being and resources, players need to consider potential loss or deterioration of homes, community facilities, roads, agricultural land, beaches, wetlands, lagoons, and other resources.	1-2h	Multiplayer	Adults	Board Game	In-Person	Charges Fee	https://games4sustainability.org/gamepedia/game-of-floods/ https://www.adaptationclearinghouse.org/resources/game-of-floods.html	Urban Sustainability Directors Network (USDN), American Society of Adaptation Professionals & US Environmental Protection Agency
11	Land Science Virtual Interns	Land Science is a game where players to become office interns at a fictitious urban and regional planning firm. Players weigh trade-offs for land use decisions in ecologically-sensitive areas, interact with virtual stakeholders and use iPlan, a custom-designed GIS, to develop land use plans for local and national sites.	>2h	Multiplayer	Youth	Digital & Board Game	Online & In-Person	For Free	http://www.virtualinterns.org/virtual-internships/land-science/	Wisconsin Center for Education Research, US
12	Map Your City's Future	Map Your City's Future is a game that builds skills, data and networks to support Disaster Risk Management and Urban Planning in Africa. The game uses OpenStreetMap data, digital cartography, technology & community participation for SD, developing high quality data.	Varied	Single Player & Multiplayer	Youth & Adults	Digital	Online & In-Person	For Free & Charges Fee	Open Cities: www.opencitiesproject.org Grace: gdoherly2@worldbank.org https://www.worldbank.org/en/topic/disaster-riskmanagement/brief/city-resilience-program	City Resilience Program – supported by GDFRR Labs, Open Cities-Africa, World Bank Group

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13	Mission 1.5	Mission 1.5 is an online game which educates people about climate solutions and asks them to vote on the actions that they want to see happen. It is known as the world's biggest survey of public opinion on climate change.	N/A	Single Player	Youth	Digital	Online	For Free	Game Website https://mission1point5.org/be/about https://unric.org/en/mission-1-5/	The United Nations Development Programme (UNDP)
14	New Shores	New Shores is a game where players are sent to an island with wild forests and rich coal deposits. Players start earning money, building households and public infrastructure. They discover that while exploiting the island's natural resources may quickly improve their living conditions, it may also disturb the island's ecological balance and lead to natural disasters.	1-2h	Multiplayer	Youth & Adults	Digital	Online	For Free	https://newshores.socialsimulations.org	EU, Erasmus + Programme
15	SIMCITY	SimCity is an engaging city-building game intended to let players design a city — imagine being a mayor of the city and designing your city the way you want to. The aim is to convey basic skills such as arithmetic, but an understanding of complex systems such as the economy, the environment and the relationships that tie them together.	N/A	Single Player & Multiplayer	Youth	Digital	Online	For Free	Official Website: www.ea.com/games/simcity Article: SimCity Created a Generation of Urban Planners www.reason.com/2020/02/09/simcity-created-a-generation-of-urban-planners/	TU Delft & Maxis, Electronic Arts (EA)
16	Sprites of Meadowlands	Sprites of Meadowlands is a game designed to activate a specific urban location. It addresses the exploration of hidden green spaces. It starts with a walk and all the details that can characterize the morphology of the garden.	N/A	Single Player	Youth & Adults	Digital	Online	For Free	https://meadowlands.surge.sh/	Mateja Rot (Slovenia)
17	Tradeoff InVest	Tradeoff InVest is a series of mapping games introducing concepts related to nature's benefits to people while mirroring the InVest analytical approach.	1-2h	Multiplayer	Adults	Board Game	Online & In-Person	Charges Fee	https://msp.naturalcapitalproject.org/msp_concierge_master/tradeoff.html	Natural Capital Project
18	Tygron	Tygron Geodesic Platform is a game that can be configured for the specific purposes of each project, including features of: water, climate, environment, energy, city planning and GIS BIM.	N/A	Single Player & Multiplayer	Adults	Digital	Online	For Free & Charges Fee	https://www.seriousgamemarket.com/2014/07/tygron-serious-games-for-spatial.html	TU Delft
19	World Climate	World Climate is a game simulation in which participants experience how their decisions affect the global climate system. In the game, players learn about the dynamics of global negotiations on climate change, taking on roles of the world's most important leaders and take the responsibility for the Earth's future and enabling deeper understanding of the systems shaping our world.	>2h	Multiplayer	Adults	Digital & Board Game	Online & In-Person	Charges Fee	https://www.climateinteractive.org	Dr. Elizabeth Sawin and Andrew P. Jones, New Venture Fund

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ID	Name	Description	Duration	Players	Age Group	Game Type	Mode	Cost	URL	Organization
20	Nexus	Nexus Game is a game that incorporates the interconnected Water-Food-Energy Nexus challenges. Participants get insights of water management challenges for energy and food production, striving to address needs of population, industry and agriculture, at the same time facing challenges of climate change.	>2h	Multiplayer (Large Groups: 8-24 players)	Adults	Board Game	In-Person	For Free	https://nexus.socialsimulations.org/#applications	Centre for Systems Solutions, International Institute for Applied Systems Analysis, Sustainable Energy for All Initiative
21	ASPS Sustainability Game (Auditing the Sustainability of Public Spaces)	ASPS Sustainability Game is an immersive 3D simulation/ role-playing game designed to support planners, architects, environmental NGOs, teachers or the general public to understand sustainability issues in public spaces (e.g. parks). The impact envisaged concerns the wider benefits of sustainable development in cities and town planning practices, as well as democratic governance (public participation).	#N/A	Single Player	Varied	Digital	Online	For Free	http://serious-gameclassification.com/EN/games/43211-ASPS-Sustainability-Game-/index.html https://www.youtube.com/watch?v=4vF45gE1U	PRISMA
22	B3 - Design your Marketplace	B3 provides a playful digital environment in which the citizens gain information about the current situation in the city district, have the possibility of submitting their own designs for the marketplace, vote for the preferred designs, and chat with the experts and other participants.	#N/A	#N/A	Adults	Digital	Online	For Free	https://geogameslab.net/portfolio/b3-design-your-marketplace/ Research Paper: https://www.researchgate.net/publication/260275454_Digital_Serious_Game_for_Urban_Planning_B3-Design_Your_Marketplace	GeoGamesLab
23	Complete Street	The Complete Streets Game is a capacity-building workshop tool that enables participants to play with re-arranging and rebuilding their neighbourhood streets and to visualize what the opportunities and options can be.	#N/A	Multiplayer (Small Groups: 4-6 players)	Adults	Board Game	In-Person	Charges Fee	Link to game description: https://www.completestreetsforcanada.ca/complete-streets-game-2.0-is-here/ https://www.o2design.com/complete-streets-by-design	The Centre for Active Transportation
24	City Skylines	City Skylines is a game that mirrors real-world systems (inspired by SimCity), and players face interconnected urban planning and policy challenges. The game mixes strategy and decision-making focused on building and managing cities. Urban planning and policy aspects are coupled with the task of maintaining a city's budget, mobility, pollution (land, water, and noise), population and residents' health, happiness, and employment.	#N/A	Single Player	Adults	Digital	Online	For Free	http://gamesforcities.com/database/cities-skylines/	Paradox Interactive
25	Doodle City	Doodle City is a family game of city building, that allows the drawing a network of road, building a city and trying to score points for their hotels, shops, and taxis, all while avoiding pollution.	<1h	Multiplayer (Small Groups: 1-6 players)	Youth & Adults	Board Game	In-Person	Charges Fee	https://boardgamegeek.com/boardgame/162107/doodle-city	999 Games & Aporta Games
26	Dubex Game	Dubex is a decisional making game that supports sustainable development. The game invites players to take on the role of stakeholders and draw a plan for the sustainable urban renewal of a neighbourhood.	>2h	Multiplayer (Small Groups: 2-10 players)	Adults	Digital	Online & In-Person	For Free	www.gamesforcities.com/database/the-dubex-game/Academia:https://www.academia.edu/4730994/The_DUBES_Game_Combining_DSS_and_Inte_reaction_Seminar_De_Spelende_Stad_-_The_Playful_City_Research_Publication www.researchgate.net/publication/260224943_The_Dubex_game_supporting_susta	Play the City & TU Delft

inhabitable urban renewal project

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27	Keep Cool Mobil	Keep Cool Mobil is a game about climate politics, where young people take control of global metropolises. They decide which path their economies will take, their climate protection strategy and exert influence on an international scale.	<1h	Multiplayer (6 Small Groups of up to 3 players)	Youth	Digital	Online	For Free	http://www.climate-game.net/	Potsdam Institute for Climate Impact Research
28	IBM CityOne	IBM CityOne is a game where players explore new and innovative solutions for a 'smarter planet' in areas of energy, water, retail and banking. Players must evolve all these four areas on a limited budget, while making decisions affecting revenue, profit, citizen satisfaction and environmental betterment. The goal is to create more connected, intelligent and efficient cities.	#N/A	#N/A	Adults	Digital	Online	For Free	http://gamesforcities.com/databases/cityone-a-smarter-planet-game/	IBM
29	Pipes – Public Infrastructure Participatory Engagement Simulation	Pipes is a game where players experience problems and dangers connected to ageing water infrastructure. Players practice collaboration among various organisations and groups of interest, and experience problems and opportunities in complex systems.	>2h	Multiplayer (Large Groups 8-24 players)	Adults	Board Game	In-Person	Charges Fee	https://pipes.socialsimulations.org/#benefits	Centre for Systems Solutions (CRS), Michigan State University, GamesSustainability & Social Simulations
30	Rubbish!	Rubbish! is a game designed to specifically address the waste crisis in Bangalore. Players take the role of John – a Dry Waste Collection Centre (DWCC) manager. Players' responsibilities include collection and disposal of dry waste and ensuring the overall cleanliness of the city. Each player runs his own DWCC in one ward. Every round, waste is generated in all wards, but the players can only collect from those wards that have a DWCC, with the remaining waste dumped in the landfill. When the landfill overflows, all players lose. If the players manage to create a DWCC in every ward, they all win the game.	#N/A	Multiplayer (Small Groups 4-6 players)	Adults	Board Game	In-Person	For Free	http://gamesforcities.com/database/rubbish/ https://mediabamsterdam.com/blog/project/rubbish/	Fields of View, mediaLAB Amsterdam
31	StreetComplete	The players are asked simple questions in their vicinity to complete the info on the respective site. The info entered is then directly added to the OpenStreetMap in the name of the player.	#N/A	Single Player	Youth & Adults	Digital	Online	For Free	https://play.google.com/store/apps/details?id=de.westnordost.streetcomplete&hl=en&gl=US	Tobias Zwick
32	Urban Gems	UrbanGems is a game that identifies the visual cues that are generally associated with concepts difficult to define such beauty, happiness, quietness, or even deprivation.	#N/A	Multiplayer (Small Groups 8 players)	Varied	Board Game	In-Person	Charges Fee	https://urbangems.org/	Adam Barwell, Daniele Quercia, Jon Crowcroft
33	Urban Science	Urban Science is a game where players become urban planners to redesign the city. Use of GIS model to propose land use changes.	#N/A	Varied	Youth	Digital	Online	For Free	https://www.cse.msu.edu/~cse498/2016-08/projects/urban-science/	University of Wisconsin
34	ECO	ECO is a game where players harvest from the environment to craft their own creations. Players can collaborate to build a civilisation. Every action affects the environment with many animals and plants.	>2h	Single Player	Varied	Digital (PC Game)	Online	Charges Fee	https://gamesustainability.org/gamepedia/eco/ https://play.eco/	Strange Loop

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35	Animal Crossing	Animal Crossing is a simulation-style game which allows players the chance to create their own versions of paradise on a deserted island inhabited solely by animals. The customizable player/ character names their island and establishes a small village within, and then build elaborate homes, tend gardens, fish, throw parties, and converse with their always-kind animal neighbours.	Varied	Multiplayer (Small Groups <4 players)	Children	Digital	Online	Charges Fee	https://animal-crossing.com/	Nintendo
36	Article 27: the UN Security Council Game	Article 27: The UN Security Council Game is a game focusing on decision-making process in UN Security Council (Germany is added). Each player can present a proposal to the Council. It marks the start of the negotiations phase.	1-2h	Multiplayer (Small Groups 2-10 players)	Varied	Board Game	In-Person	Charges Fee	https://games4sustainability.org/amepedia/article-27-un-security-council-game/ https://boardgamegeek.com/boardgame/113293/article-27-un-security-council-game	Stronghold Games
37	Budget Games	Budget Games is a game that lets each group has to unanimously decide on urban investments and social services selection. Each participant has some of the game's currency, but not enough to finance the projects preferred. The players need to work together to reach common solutions. Each team creates its list of proposals. But the final ranking depends on the average from all tables.	N/A	Multiplayer (Small Groups 8-10 groups of 10 players)	Varied	Board Game	In-Person	Charges Fee	http://graobudget.crs.org/pl/about-the-game/	Luke Hohmann & Innovation Games
38	Civilization	Civilisation is a game where players are tasked with guiding an entire civilization throughout the ages, taking ownership of your people's technology, economy, culture, and military, as well as all the choices that go along with them.	1-2h	Varied	Youth	Digital & Board Game	Online	Charges Fee	https://civilization.com/ https://www.pcgamer.com/civilization-6-review/ https://www.commonensemedia.org/game-reviews/sid-meiers-civilization-vi	MicroProse
39	Climate-Poker	The players become Climate Diplomats to protect the climate. Players can join forces to organize climate negotiations for climate agreements.	<1h	Multiplayer (Small Groups 2-10 players)	Adults	Board Game	In-Person	Charges Fee	https://games4sustainability.org/gamepedia/climate-poker/	BeWitched Spiele
40	Cultural Memory Game	Cultural Memory Game is a game that teaches the key factor contributing to community resilience. The bits and pieces of past catastrophic events are scattered around the city, offering prompts to those who are ready to relate facts.	1-2h	Multiplayer (Small Groups 6-12 players)	Varied	Board Game	In-Person	For Free	https://culturalmemory.socialsimulations.org	EU Horizon 2020 Programme
41	DisCoord - The Disaster Coordination Game	DisCoord is a game where as the leader of a Sub County (consisting of 15 villages) in Uganda, a player must ensure that the population is satisfied. However, growing population, floods and landslides frequently occur, and money is not enough. The players need to discuss and interact with each other since policies need to be proposed and enacted at district level through a majority vote. Each round (year) consists of 4 phases.	>2h	Multiplayer (Small Groups 2-8 players)	Adults	Board Game	In-Person	Charges Fee	https://games4sustainability.org/gamepedia/discord/	Kewan Mertens, Matthieu Kervyn

Screenshot

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42	Earthgirl	Earth Girl is an interactive game focused on making strategic decisions to minimize risk in communities which are exposed to natural hazards. In the game, a smart and action-loving Southeast Asian girl plays to save her family and friends from natural hazards.	<1h	Single Player	Children & Adults	Digital	Online	For Free	www.earthgirl2.com	Earth Observatory of Singapore (EOS)
43	Earthrise	Earthrise is a game that is a sandbox massively multiplayer online role-playing game shooter set in a post-apocalyptic world where players must craft their gear and fight for survival.	>2h	Multiplayer (Small Groups 2-10 players)	Varied	Digital	Online	For Free	https://www.mmorpg.com/earthrise-first-impact	SilentFuture
44	Full Spectrum Warrior	Full Spectrum Warrior is a game commissioned by the U.S. Army to train light infantry troops in urban combat situations.	N/A	Varied	Youth	Digital	Online	Charges Fee	https://www.gog.com/game/full_spectrum_warrior?pcsrc=aw.ds&gclid=CjwKCAjwhMmEBhBwEiwAXwFoEQ09ECYvUwvBrA-7MbPQCjNpYTSsqLQir617_DX9r49ehirAtzpdD9xoCXEYOAvD_BwE	Pandemic Studios & THQ Nordic GmbH
45	Greenspace	GS is a game to convert/flip (remediate in the real world) all contaminated 2D brownfield tiles in the centre of the Monopoly-like game board to viable 3D green spaces. Rewards from tasks such as cleaning garbage and building renewable energy resources give players a sense of accomplishment as they move through the game. RocketOwl and its partners have vowed to plant a tree in the real world as players complete milestones.	>2h	Varied	Youth	Digital	Online	For Free	https://web.archive.org/web/20121014011354/http://www.appsonitapp.com/greenspace/	RocketOwl
46	Gifts of Culture	Gifts of Culture is a game where players represent various groups living in the flood-prone valley. Although their views and ideals differ, they have the same goal of improving living conditions in their communities. The players experience cultural differences, but learn to turn diversity into opportunity.	>2h	Multiplayer (Small Groups 8 players)	Varied	Board Game	In-Person	For Free	https://giftsofculture.socialsimulations.org/en/	EU Horizon 2020 Programme
47	Hazagora	Hazagora is a game where the players are the inhabitants of a volcanic island, which they have to develop and where to sustain a community. Geological hazards are regular, and the community needs to be ready to face them.	>2h	Multiplayer (Small Groups 2-10 players)	Adults	Board Game	In-Person	Charges Fee	https://games4sustainability.org/gamepedia/hazagora/ https://www.wtnschp.be/sciencesays/	Vrije Universiteit Brussel, Science Communication Expertise Brussels Innoviris Free for non-commercial purposes
48	Laudato Si	Laudato Si is a game that manages common goods through a forest (which is the players' home, giving them place to sleep and providing everything they need to live and develop their community)	<1h	Multiplayer (Small Groups 5-6 players)	Youth	Board Game	In-Person	Charges Fee	https://laudatosi.crs.org/pl/en/	New Earth Project by Climate KIC

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ID	Name	Description	Duration	Player Count	Age Group	Platform	Game Type	Availability	URL	Developer
49	Lords of the Valley	Lords of the Valley is the action takes place in the river valley, which is in danger because of unexpected droughts and floods. The players take on roles of farmers, local authorities, bank and ecological NGOs. They face numerous challenges, resulting from other players' decisions and unpredictable environmental conditions.	>2h	Multiplayer (Large Groups 12-36 players)	Varied	Digital	In-Person	Charges Free	https://systemsolutions.org/portfolio-items/lords-of-the-valley/ https://lordsofthevalley.socialsimulations.org/#technical-details	Centre for Systems Solutions
50	Sustainable Shaun Online Game	Sustainable Shaun Online Game is a game that explores how to create a cleaner, healthier, more 'sustainable' future for our cities and the planet, build a new eco-friendly city for stray animals of a farm, making sure to keep them all happy by monitoring resources, food, energy, transport and nature issues.	N/A	N/A	Youth	Digital	Online	For Free	https://ec.europa.eu/environment/sustainableshaun/game_en.htm	Sustainable Learning Team (UK)
51	The World's Future	The World's Future is a game where players adopt high-level leadership roles. They experience the pressure of making trade-offs and the thrill of finding synergies for sustainable development. Players make choices about energy and industrial investments, social development, and environmental management, among other factors, which influence their country – and surrounding countries – in the long term. Incorporates the SDGs and players experience how interconnected the global goals are and what the consequences of their decisions are.	>2h	Varied	Adults	Digital & Board Game	Online & In-Person	Charges Free	https://worldfuture.socialsimulations.org	Centre for Systems Solutions, International Institute for Applied Systems Analysis
52	Urban Renewal	Urban Renewal is a game where the players take part in a complete transformation of the city. Each player, starting with the one who takes the role of Mayor, spins the Decision Engine Wheel. The wheel can stop at one of those icons: Condominium, Commercial Building, Public Housing, School, Bulldozer, Park, Planning Directive. The player has to follow the instructions connected to the spinning outcome.	>2h	Multiplayer (Large Groups >10 players)	Adults	Board Game	In-Person	Charges Free	http://flaviorevisan.com/2011/the-game-of-urban-renewal/	John Walker
53	Urbanix	Urbanix is a Wii ware game in which player controls a tiny little tractor that has to build a town on an empty field in a given time, while avoiding the enemies. The object of the game is to populate enough of the empty area before a time limit runs out.	1-2h	Varied	Varied	Digital	Online	Charges Free	https://www.nintendo.co.uk/Games/WiiWare/Urbanix-287064.html https://nintendodookie.wordpress.com/2011/01/28/urbanix-review-wiiware/	Nodcurrent
54	World Rescue	World Rescue is a game where players learn about SDGs and 21st century development challenges in different parts of the world. The game features five characters from diverse parts of the world—India, China, Norway, Brazil, and Kenya. With culturally relevant and research-based storytelling and art, World Rescue offers a bird's eye view into the food, environment, society and culture through gameplay.	<1h	Single Player	Varied	Digital	Online	For Free	http://worldrescuegame.com	UNESCO MGIEP
55	Darfur is Dying	Darfur is Dying is a game where the player takes the role of a displaced Darfuri living in a refugee camp. The player faces lack of water and needs to find a new source, through a careful search, so he/she doesn't get captured by aggressive security guards.	<1h	Single Player	Adults	Digital	Online	For Free	http://www.gamesforchange.org/game/darfur-is-dying/	Take Action Games

CCE L11WS: SERIOUS GAME DIRECTORY

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56	Digital Zoo Gallery	Digital Zoo gallery is a game where player can visit two art galleries with different themes. The game offers 2 galleries for the players; Modern Art Gallery and Jurassic Jungle. In the game players can explore the jungle filled with dinosaurs while at the same time enjoy artworks or visit a modern gallery for a more relaxed experience.	<1h	Varied	Varied	Digital	Online	Charges Fee	Game website: Not Available Resource: https://store.steampowered.com/app/1511330/Digital_Zoo_Gallery/	Digital Zoo
57	Evacuation Challenge Game	Evacuation Challenge Game is a game that the challenges are connected with disaster response and evacuation (in this case – zombie apocalypse!). Participants take the roles of citizens and rescue team members, but the road to safety is not easy.	1-2h	Multiplayer (Large Groups >10 players)	Adults	Digital	Online	For Free	https://evacuationchallenge.socialsimulations.org	Center for Systems Solutions, and EDUCEN project
58	Monument Valley	Monument Valley is an MC Escher inspired puzzle game that bends architecture and follows a silent princess through a captivating world. In the game player leads the princess Ida through mazes of optical illusions and impossible objects while manipulating the world around her to reach various platforms.	>2h	Single Player	Varied	Digital	Online	Charges Fee	Game website: https://www.monumentvalleygame.com/mv2 Resource: https://en.wikipedia.org/wiki/Monument_Valley_(video_game)	Us two
59	My Little Princess : Castle	My Little Princess Stores is a storytelling digital dollhouse game. It is a castle where child interacts with everything.	1-2h	Single Player	Children	Digital	Online	Charges Fee	https://play.google.com/store/apps/details?id=nylittleprincess.castle&hl=en_US&gl=US	My Towns Games Ltf
60	Myst	Myst is a game where players solve puzzles, and by doing so, travel to four other worlds, known as Ages, which reveal the backstory of the game's characters.	>2h	Multiplayer (Small Groups 2-10 players)	Children	Digital	Online	Charges Fee	https://cyan.com/games/myst/ https://www.commonsensemedia.org/game-reviews/myst-nintendo-3ds	Cyan
61	Project Pandora	Project Pandora is a SCIFI board game where one player controls the evil human corporation and the alien eight race on a modular tile board moving miniatures and rolling dice to achieve some scenario-driven objectives.	<1h	Multiplayer (Small Groups 2 players)	Children	Board Game	In-Person	Charges Fee	https://boardgamegeek.com/boardgame/120444/project-pandora-grim-cargo https://www.play-board-games.com/project-pandora-grim-cargo-review/	Mantic Games
62	Second Life	Second Life is a 3D online virtual world which allows players to create virtual representation of themselves and customise their avatars, explore and create a host of different environments and locations. The players can at the same time interact with others and participate in different activities.	N/A	Multiplayer (Small Groups 2-10 players)	Youth	Digital	Online	For Free	www.secondlife.com/	Linden Lab

CCE L7WSC: GAME REVIEW SHEET

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USE THE TABLE TO GATHER INFORMATION ABOUT THE VARIOUS GAMES YOU ARE FINDING

GAME'S NAME	GAME TYPE	# PLAYERS	GAME AIM.	COMMENTS / OPINION