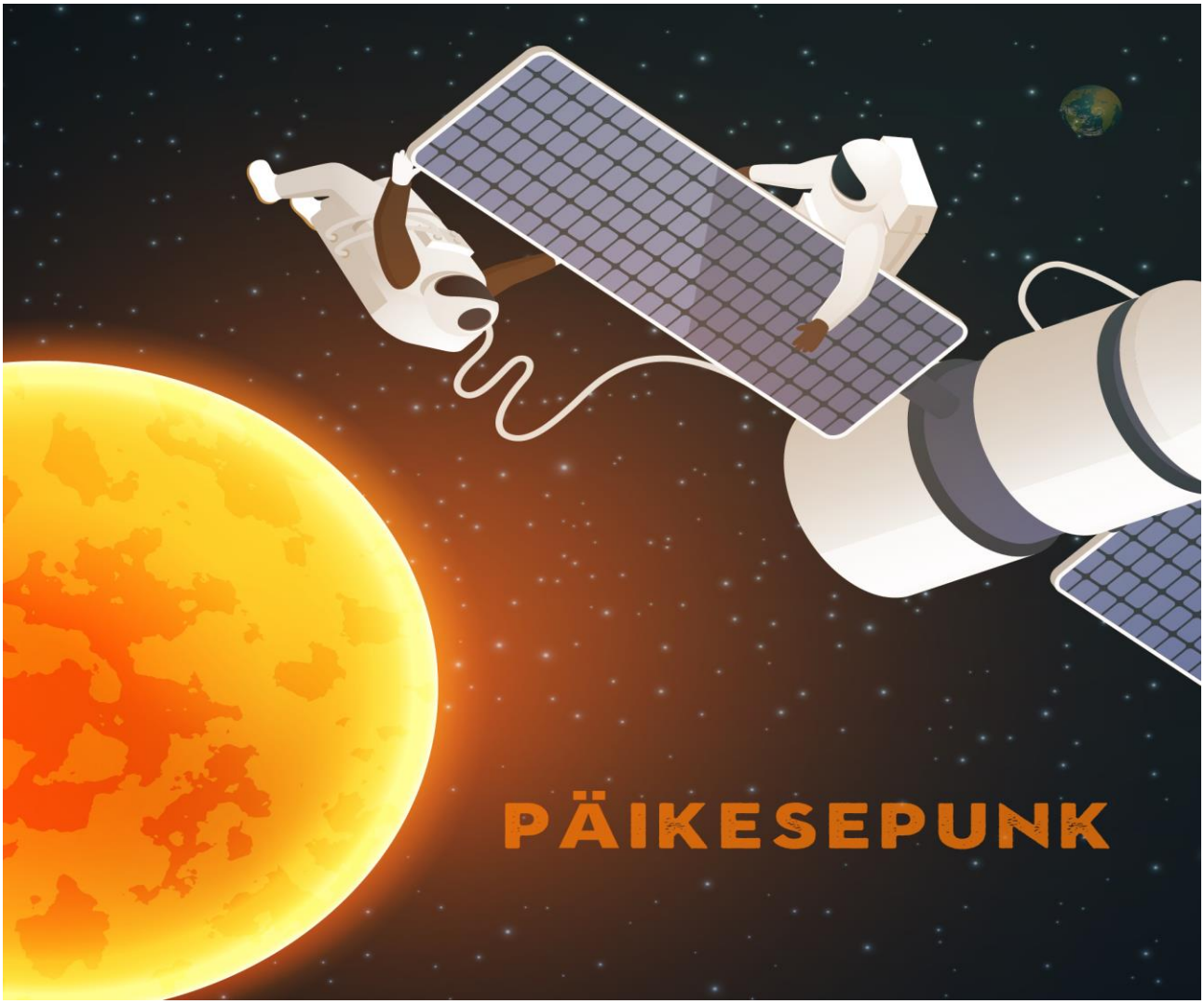


SOLARPUNK

Educational role play game

Peipsi Center for Transbpoundary Cooperation

2020

SOLARPUNK

Edularp – educational role play game

Creators: Marilin Eessalu, Lea Pullerits, Ederi Ojasoo

It is the year 2081.

Humanity has developed as fast as it did in the 20th century in the last 50 years. After a long phase of denial on climate change, fortunately they came together and took action. By now, a utopia has come to be what some call the sunburn. Cities are greener than ever, with plants grown on roofs and vertical gardens; solar panels provide all the energy needed and more; orbiting mirrors orbit the sun's rays away from the earth, thus preventing the absorption of infrared radiation into the atmosphere and the further rise in global temperature.

Humanity, or at least the vast majority of it, is flourishing.

However, the whole adaptation to climate change is only a carefully maintained balance - a cosmic litter from a meteor cloud called the Persians showed this system how vulnerable this system can be. The OCM-18 orbital mirror navigation system has been damaged, and the MM1 space station, which monitors in-orbit mirrors, has declared a crisis situation and sent out a repair team, whose fast action now depends a lot. In just four hours, the sun's rays hit this mirror, and if the angle is not right, the atmosphere absorbs enough infrared radiation to cross the tipping point and restart the chain of disasters on Earth.

☼☼☼

The development and testing of the game was supported by the Nordic Council of Ministers' project “Building capacity to use role-play games in the Lake Peipsi border region as a new tool for increasing the environmental awareness in education”.

The game was co-financed by the Central Baltic Program.

CONTENT

Overview

General information:

- Target group: 9th-12th grade
- Number of players: 4-15
- Duration: 1-1.5 h
- Topics covered:
    - Renewable energy
    - Geoengineering
    - Social justice
    - Ethics
    - Allocation of resources
    - Social inequality

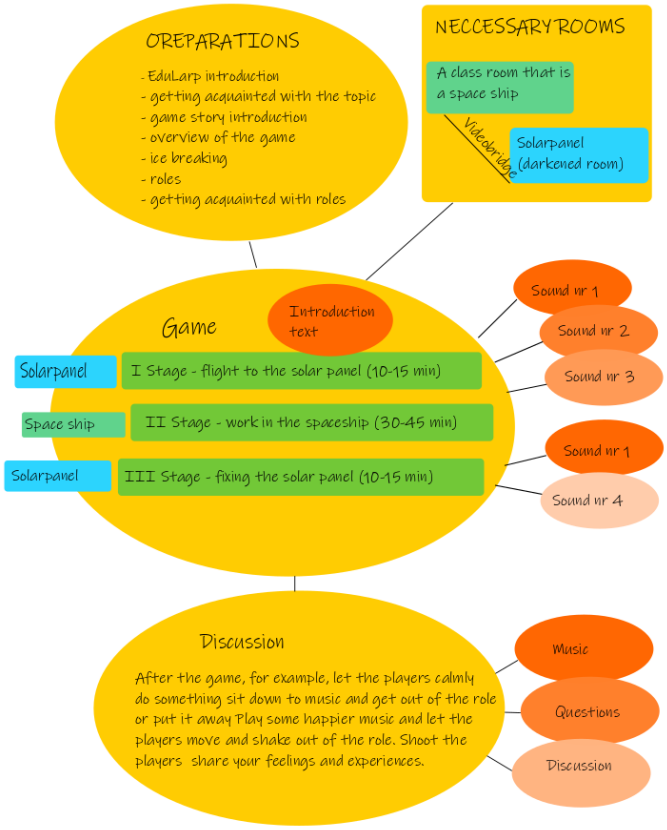
Resources:

- Classroom and smaller segregated space
- Game materials: role sheets, sound clips, a poster depicting the sun mirror control system and scissors, glue or tape to “fix” it,
- Computer or smartphone with a speaker. Optional projector, webcam or smartphone to build a video bridge.
- If desired, suits, medical equipment (for example, a drip chamber can be built for people with radiation, a drip chamber can be built with hand tools, etc.).
- In the case of the longer version it is recommended to have two, in the case of the shorter version one instructor or game manager.

Conducting the game

The role-playing game Sunshine can be performed in two ways - longer and shorter. The longer version of the game consists of three stages: flight to the sun mirror, work at the station, repairing the sun mirror. Both versions of the game are described below. The general content of the games is the same, in the case of a shorter game, only one stage of the game is played with the participants, which simplifies the preparation of the game - only the middle part, the work at the station, is played. There is also an introductory video (link) about the longer version of Sunshine, where you can get an overview of the game and good tricks.

Figure 1. Game sceme



Preparation (15 - 45 min):

Siin on kirjeldatud konkreetseid samme, mis tuleb enne mängu läbi teha, et mängu saaks läbi viia. Juhendajapoolne ettevalmistus käsitletavate teemade kohta peaks toimuma eelnevalt (vt punkte “Mängujärgne arutelu” alt.)

Tutvumine. Kui tegemist on osalejatega, kes üksteist ei tea, on soovitav tutvuda nimeringiga, kus igaüks ütleb oma nime ja ootused mängule. Soovi korral võib viia läbi soojendusmängu omal valikul.

Õpilarbi tutvustus. Vt ka videot siit: GoodJobStudios : Learning Through Roleplay : Edularp. Enne mängu alustamist peaks läbiviija põgusalt tutvustama, millega on tegemist. Soovi korral võib osalejatelt uurida, kas nad on enne rollimänge mänginud.

Õpilarp ehk hariduslik rollimäng on meetod, kus osalejad õpivad tundma valitud teemasid, kehastudes tegelasteks kokkulepitud loos ja maailmas, et lahendada teatud probleem või jõuda eesmärkideni.

Sõlmige omavahel ka kokkulepped, et tegelastest tulenevad konfliktid jäävad mängu ning mängu ajal püüab iga osaleja lähtuda oma tegelase eesmärkidest ja isiksusest.

Teema tutvustus

Läbiviija peab tutvustama osalejatele teemasid, mille kohta mängus õpitakse. Minimaalselt tuleb iga teema ette lugeda, seletada, mida see täpsemalt tähendab ning küsida õpilastelt tagasisidet, kas ja kuidas nad teemat mõistavad. Sügavam teemakäsitlus peaks toimuma enne ja pärast mängu ning ei ole mängu aja sisse arvestatud.

Here are the specific steps that need to be taken before the game can take place. Supervisor preparation on the topics to be covered should take place in advance (see sections under "Post-game discussion").

Dating. In the case of participants who do not know each other, it is advisable to look at the name circle, where everyone says their name and expectations for the game. If desired, you can play a warm-up game of your choice.

Introduction to the edularp. See also the video here: GoodJobStudios: Learning Through Roleplay: Edularp. Before starting the game, the facilitator should briefly explain what it is. If desired, participants can be asked if they have played role-plays before. A student role play, or educational role-play, is a method in which participants learn about selected topics, becoming characters in an agreed story and in a world to solve a certain problem or reach goals. Also agree that the conflicts arising from the characters will remain in the game, and during the game each participant will try to be guided by the goals and personality of their character.

Introduction to the topic

The facilitator must introduce the participants to the topics they are learning about in the game. As a minimum, each topic should be read aloud, explained in detail, and asked for feedback on whether and how they understand the topic. A deeper discussion of the topic should take place before and after the game and is not included in the game time.

- Renewable energy Geoinseneeria
- Geoengineering
- Social justice
- Social justice
- Allocation of resources
- Social inequality

Introduction game story

The game will take place in a future where climate change has been curbed by the achievements of geoengineering. Life on earth flourishes thanks to sophisticated irrigation systems, carbon sequestration and orbital sun mirrors. However, one of the sun mirrors has been hit by a meteor body and its control system has become unusable. Participants play on the space station team, which must get the sun mirror fixed before the sun's rays reach it. Each character has their own priorities.

An overview of the game

Explain to the participants that they play people from different backgrounds and for different purposes in the space station: doctors, technicians, astronauts and plumbers. The game can be played in a simpler and shorter way or in a more complex and long way.

The longer version of the game is divided into three parts:

1) First flight from the station to the sunshade - the aim is to assess the extent of the damage and the necessary spare parts (10-15 min)

2) Work at the station (30-45 min) - the astronauts return to the station with the information needed to repair the mirror. It has to be decided who will go to repair the mirror when the necessary parts are together.

3) Repairing the sun mirror (10-15 min)

The shorter version skips the first and third stages and only the second stage is played. The game starts when the first flight has already taken place and ends when the second repair team is sent. Both games have to play their part. During the game, there is a discussion between them, justification of the choices and at the end it is decided who will be sent to repair the sun mirror.

Ice breaking

It is recommended to make a warm-up game.

For example: Ask participants to move around the room freely. Not just a circular wheel, but in different directions and randomly. The facilitator then gives instructions on how to move and behave and the participants try to express and act out according to the instructions. For example, “move as if you were an old man”: participants try to express their version of the old man, for example, as if walking, crouching, slowly, growling, etc. Recommended roles (which match the

roles of the game): boss / boss, president / leader, brilliant scientist, very decent cleaner, surgeon in the middle of the operation, astronaut in space..

Distribution of characters

Rollid jagatakse välja loosiga või annab juhendaja need suunatult – selles mängus on oluline, et Tõrjutute rolli ei mängiks lapsed, keda kiusatakse! Samuti ei tohiks juhirollis olla õpilased, kellel on komme teisi kiusata. Rolliinfo on salajane ning teada ainult mängijale. Osalejatele tuleb jätta veidi aega, et nad saaksid oma rolli süvenenult läbi lugeda ning vajadusel küsimusi esitada.

Distribution of characters

Game suitable for swallowing: The instructor picks up the phone or tablet and holds it in front of each player in turn so they can save messages to Earth to send to their family members, or plays through a short direct connection with the family members. The supervisor can prescribe to whom the message will be sent. Messages could be about 2 minutes long.

For example:

1) You have the opportunity to send a message to your mother who you haven't seen in 2 years, what do you tell her? / Your grandmother sent you the seventh message this month, asking if you have already found a wife and come back to Earth, she wants to see her grandchildren before she dies - what do you answer her?

2) Supervisor: Dear Paula, my father and I miss you very much, you haven't visited us in 2 years. How are you and will you be back on Earth soon? Grandma also welcomes! / Thanks, Bob, for this last check, it was a big help to me. If you can, I'd need another $ 1,000, life on Earth is so expensive… In this version, the teacher has to improvise the answers online.

Introduction to the sructure of the game

Before starting to play, participants should be introduced to the structure of the game.

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The course of the game

Once the preparations are done, the game can begin. I

ntroductory text, the tutor reads aloud, shows it to everyone on the screen or distributes it on paper:

It is the year 2081.

Humanity has developed as fast as it did in the 20th century in the last 50 years. After a long phase of denial on climate change, fortunately they came together and took action. By now, a utopia has come to be what some call the sunburn. Cities are greener than ever, with plants grown on roofs and vertical gardens; solar panels provide all the energy needed and more; orbiting mirrors orbit the sun's rays away from the earth, thus preventing the absorption of infrared radiation into the atmosphere and the further rise in global temperature.

Humanity, or at least the vast majority of it, is flourishing.

The widening gap between poor and rich at the beginning of the 21st century, coupled with the application of expensive adaptation technologies and methods, especially in rich areas, led to a temporary sharp deterioration in living conditions in the 2040s leading to mass mortality in poor countries. The drastic decline of the world's population contributed to the recovery of the natural environment and the improvement of conditions for the privileged who survived. Today, in 2081, the extremely rich 1% live comfortably with the middle class of the welfare state and no longer have to worry about tomorrow. Statistically, humanity is doing well in an unprecedented and common way. It is true that some activists with outdated humanitarian views preach that a handful of slums living in slums - only 2% of the Earth's population - need the help and access to the benefits of the sunshine, but in general they are as invisible as the outcasts they speak for. After all, these are people who have done nothing to combat climate change, so they do not deserve the benefits of modern society.

However, the whole adaptation to climate change is only a carefully maintained balance - a cosmic litter from a meteor cloud called the Persians showed this system how vulnerable this system can be. The OCM-18 orbital mirror navigation system has been damaged, and the MM1 space station, which monitors in-orbit mirrors, has declared a crisis situation and sent out a repair team, whose fast action now depends a lot. In just four hours, the sun's rays hit this mirror, and if the angle is not right, the atmosphere absorbs enough infrared radiation to cross the tipping point and restart the chain of disasters on Earth.

You are the team of the space station, and you have the responsibility to get it right.

I stage *(longer version)* – 15 minutes

Approximate time is also given for each stage, but the tutor can always move on faster or give extra time.

The sound clips are in English, it is worth supporting the players in their understanding.

In the longer case, it is recommended to have two game controllers - one is at the station and the other "travels" with the astronauts.

Players are divided into two groups - astronauts flying to the sun mirror to assess damage, and a team waiting at the space station. There is a video bridge between the station and the astronauts so that the station's technicians can assess the damage to the sun mirror. If it is not possible to build a video bridge, the groups could be within earshot, for example with a separate screen, so that they can simply simulate radio communication by talking loudly.

The game begins with the instructor playing a sound clip No. 1 from the speaker (automatic shuttle notification from flight to the sun mirror). The "flying" of the shuttle can be simulated simply by standing with your eyes closed or, for example, by a seat built of chairs. The sound clip must be heard by both those in the station and the astronauts.

Astronauts arrive at the sun mirror and play through damage assessment and information transmission to the station via video contact. The task of the station technicians is to take notes and see which parts need to be replaced. At the same time, the instructor plays sound clip No. 2 from the speaker (solar panel error message, high radiation level warning). The instructor signals that signs of radiation sickness are beginning to appear and that it is necessary to return to the station.

On the return flight, the instructor plays sound clip No. 3 from the speaker (information on repairing the sun mirror and life-threatening radiation levels).

The game manager at the station can signal players that returning astronauts need urgent medical attention and direct the medics to prepare.

II stage– 30–60 minutes

In the shorter version, the game starts with the instructor playing the sound clip No. 3 from the speaker and the astronauts receiving the high radiation dose arriving at the station.

Astronauts suffering from radiation sickness arrive at the station and need immediate medical attention. Information on the signs of radiation sickness that players can play through is on the role sheets - they can be pasted or folded in advance, with instructions for opening when you return to the station. Physicians have information on how to treat it in their roles. An important note - astronauts who once visited the sun mirror are unable to go there again.

At the same time, technicians have to prepare spare parts to repair the sun mirror - for example, simply by cutting it out of paper with scissors, but you can let the players get creative themselves, all the options are right.

The director of the space station must decide who to return with spare parts to repair the sun mirror. The instructor can set the timer on the screen or in a visible place (30-45 min), by which time the next team must set off in order to repair the sun mirror before the sun's rays reach it. For playful purposes, all players, regardless of their role (except astronauts, who have already visited the mirror and been able to irradiate) will be able to repair the sun mirror under the guidance of a technician.

Everyone knows that the next repair team will die because the radiation level at the sun mirror is so high. Players must find a volunteer (s) among themselves or force someone. Depending on the roles, different characters have different thoughts, the facilitator can guide the discussion.

The shorter version ends when the players have decided who to send to repair the sun mirror. For example, you can play by putting on a spacesuit and stepping out of the door into a shuttle.

There is also the possibility that players will not find a volunteer and will not be able to forcibly send anyone - in which case, after the game, we will have to talk more about how one sun mirror affects a very large part of the Earth's climate and what catastrophic consequences it is now (eg global temperatures rise). 1 degree, America is hit by a hurricane, Antarctica is melting, etc.).

It can also happen that players find an unexpected and clever way for the correctional team to survive - then it depends on the game manager whether he lets the game go down this positive path or not.

III stage *(longer version)* – 10 minutes

The repair team is on their way to the sun mirror, the instructor is playing sound clip No. 1 again from the speaker.

The repair team plays through the repair of the sun mirror, while in the background the instructor plays sound clip No. 4 from the speaker (automatic notification of the repair process, warning about the radiation level). The radiation effects progressively increase until the mirror is repaired

and the instructor signals that the characters are dying. Sound clip No. 4 ends with music, which is also the end of the game.

After game debriefing

In this game, the participants are probably a little depressed after the end of the game. It is recommended to let the players either sit down calmly with some music and get out of the role, or make some happier music play and let the players move and shake out of the role.

It is very important to let players share their feelings and experiences. The tutor could ask you to answer questions such as:

1) Were there any situations in the game that were particularly intense or emotional for you?
2) What was the most negative moment for you?
3) What was the most positive moment for you?

Praising each other's role-playing skills is also a good way to overcome ruin - who played particularly credibly for you? Who made the game exciting for you?

Questions and topics for post-game substantive discussion

1) What ethical issues arose with the voluntary election of who was to die for the public good at the end of the game?
2) Marginalized groups and social and wealth inequalities in today's society.
3) Climate justice: the causes of climate change, the victims of climate change and moral responsibility.
4) Are geoengineering solutions such as sun mirrors a feasible and sensible way to regulate global warming? 5) What are the alternatives to tackling climate change?
6) Debate: high-tech vs. low-tech solutions to combat climate change
7) Is it possible for humanity to adapt to the changed climate in the future and how?