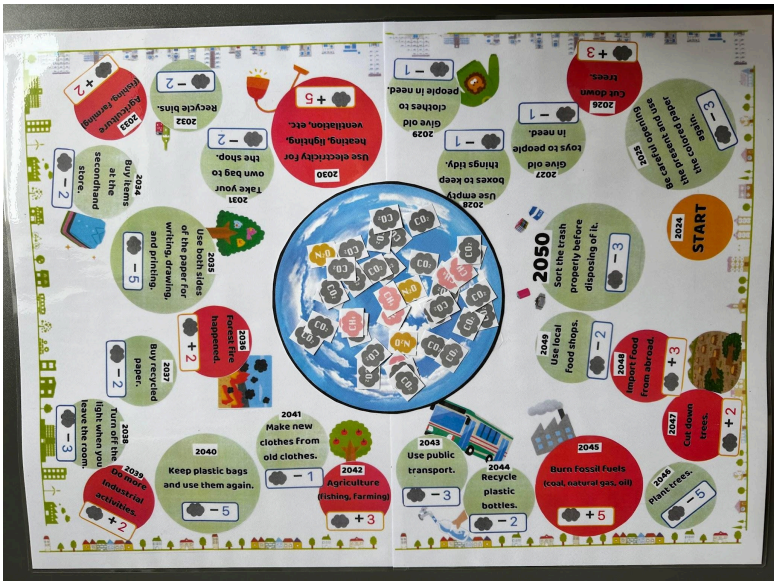
Board Game Project



Topic: greenhouse gas, climate change, environmental sustainability
Learning goals: To use the knowledge of what students learned in school and deepen the understanding of environmental sustainability

Target audience: grade 2 students (7-8 years old)
Genre: board game
Number of players: 4~6
Tools: board, dice, counter, greenhouse gas symbols (40 symbols in the circle at first, 110 symbols in total for one group)
Playtime: 15~20 minutes

First order rule:

- There are 26 steps in total(2024 ~ 2050)
- Each player takes turns and rolls a dice
- Go forward steps as the dice shows
- The player reduces or increases the greenhouse gas in the circle according to the instructions written in the step

Goal: To reduce as many greenhouse gases on board as possible by all the players goes to the step of the year 2050.

Note:

- A cooperative game is better than a competitive game for the use of learning situations in this age group.
- The opportunity and reward should be equal for every player.
- There should be no punishment.

Description:
[What the students learned at school]
Greenhouse gases

- **CO2 (80%)** Carbon dioxide
  burning fossil fuels (coal, natural gas, oil), solid waste, and trees. the result of certain chemical reactions.
- **CH4 (11%)** Methane
  production. transport of coal, natural gas, and oil.
- **N2O (6%)** Nitrous oxide
  agriculture, land use, industrial activities

Eco-friendly actions (what students can do from today. concrete actions.)

- 3R (Reduce, Reuse, Recycle)
- increase trees or prevent trees from being reduced
- reduce unnecessary energy consumption

The game basically uses what they already know. + a few new eco-friendly actions

The contents of the steps

1. Use both sides of the paper for writing, drawing, and printing. →Reduce paper and save trees.
2. Fill a reusable bottle with water each day. →Reduce plastic bottles.
3. Take your own bag to the shop. →Reduce plastic bags.
4. Keep plastic bags and reuse them. →Reuse plastic bags.
5. Give old clothes to people in need. →Reuse old clothes.
6. Give old toys to people in need. →Reuse old toys.
7. Be careful opening the present and use the colored paper again. →Reuse the paper.
8. Use empty boxes and cartons to keep things tidy. →Reuse the containers.
9. Make new clothes from old clothes. →Reuse old clothes.
10. Buy recycled toilet paper.
11. Sort the trash properly before disposing of it. →Recycle trash.
12. Use public transport.
13. Turn off the light when you leave the room.
14. Buy items at the secondhand store.
15. Plant trees.
16. Recycle plastic bottles.

Bad effect actions (10 actions) (more social issues.)

1. Burn fossil fuels (coal, natural gas, oil)
2. Agriculture (fishing and farming)
3. Cut down trees
4. Industrial activities
5. Import food from abroad
6. Use electricity for heating, lighting, ventilation, etc.
7. A forest fire happened

Playtest with the Grade 2 students

