



# Developing Games to Promote Opinion Formation towards Geological Disposal Issue



“Deadlocked Geological Disposal Issue: the Educational Boardgame” and “Accept or Reject: Town Meeting RPG on Geological Disposal”  
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### What is HLW & geological disposal?

Figure 1: HLW and geological disposal (Japan Atomic Energy Agency, 2010)

### Background

By the Japanese law (Act No. 117 of 2000)... The disposal of HLW has to be done by geological disposal, but the place to dispose has not been decided.

"Survey on Public Awareness of NUMO's PR Activities (by NUMO)"  
 "do not know" geological disposal:  
 general 57.4%    young 63.8%

Management goal of NUMO: "National debate of geological disposal"

ideal: individuals: well-understood form opinions, active discussion  
 current: many people are not even knowledgeable

Efforts to raise awareness and promote understanding of geological disposal are required.

### Purpose

The games are aimed to create opportunities and catalysts for individuals—especially young people—to learn about geological disposal and engage in discussion. Our goal is to spark sustained interest and engagement.

### Structure of the educational material

1<sup>st</sup> game (step) → 2<sup>nd</sup> game (step)

gain basic knowledge and think about the problem discuss at a primary level → acquire the knowledge to discuss in first person

By distinguishing the procedures with two separate games with different purposes, the educational material aims to encourage opinion formation and take ownership

### 1<sup>st</sup> step: providing knowledge and experiencing to “think”

Conducted in May 2024, targeting first-year junior-high students (n=111)

Figure 3: Opinion distribution at each time point

The proportion of respondents who chose “Not sure” fell from 52.3% to 34.2%.  
 Through the game, the number of people who are unsure of their opinions has decreased.

The information obtained through the game and discussions prompted participant thinking, leading to the formation or change of their opinions.

Figure 4: students playing the game

### 2nd Step: The experience of “discussing” using knowledge

Conducted in November 2024, targeting first-year junior high school students (n=83)

Figure 6: Changes in attitudes towards acceptance before and after game

The number of respondents who chose “Not sure” fell from 8 to 1.

voices from the participants:  
 As a junior high school student in the role-play, I found it difficult to decide whether I should prioritize avoiding risks to the town where I live, or prioritize accepting them for the sake of people in other regions and Japan's future.

Figure 7: students playing the RPG

The decrease in “Not sure” responses indicates that participants formed opinions through the game.

### Conclusion

gaining knowledge → Thinking → Discussion → Opinion Formation → Arousing Interest?

By gaining knowledge and experiencing the two stages, “thinking” and “discussing”, fewer people responded “unsure”, suggesting that opinions are being formed. The purpose of this educational game is not necessarily to reach consensus. Rather, the process itself (recognizing different positions and diverse values, and understanding the rationale and background behind the each) holds fundamental significance.

Using this game in schools can lead to a national debate among young generations.

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### References

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