Using the LEGO® Serious Play® Method in English for Materials Scientists 3a

September 8–12, 2025

This course used the LEGO® Serious Play® method: an innovative, experiential facilitated learning process designed to enhance innovation and communication. This learning method provides a unique way to facilitate meetings, communication, and problem-solving. The goal of the course is to help students tap into hidden potential and foster creativity while using English.

By participating in LEGO® Serious Play® workshops on a broad range of scientific topics, spanning the natural sciences, engineering, and the social sciences, students developed skills in conversational conventions, giving opinions, and subsequently improved their ability to have deeper discussions on scientific topics in general, and on their own areas of research in particular. Students actively participated as they solved problems together, all while having fun in an environment that encouraged free idea generation.

Course Agenda: September 8–12, 2025 (09:00–13:30)
- o Day 1: Orientation, Skills Building, Introductions
- o Day 2: Real Time Identity for You
- o Day 3: Discussion Module: Science and Technology
- o Day 4: Discussion Module: Global Issues and Science
- o Day 5: SWOT Analysis, Predictions and Reflections

Day 1: Orientation, Skills Building, Introductions

On the first day of the course, students did various building activities to learn LEGO® Serious Play® skills and practice using metaphors and storytelling. They built models to answer various prompts that allowed them to share interesting information about themselves and engage in non-traditional, deeper, and more meaningful self-introductions.

To conclude the day, the students created models to answer this prompt:

"Build a model to tell us one important thing about your research."

The models helped students practice English while sharing information about their research.
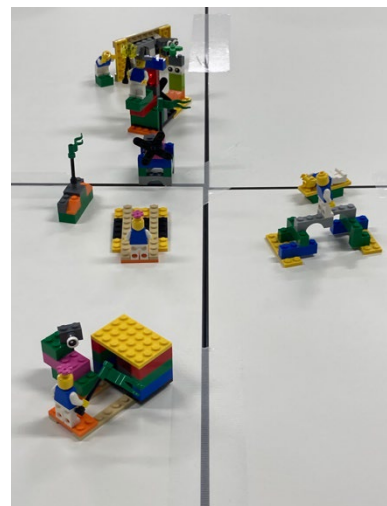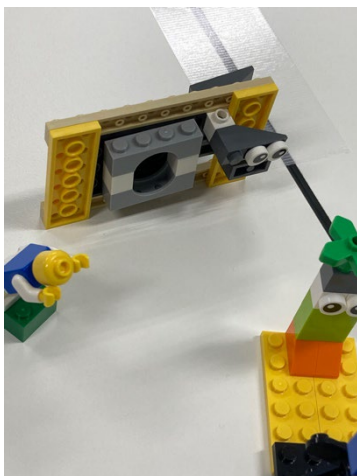
Day 2: Real Time Identity for You

On the second day of the course, students participated in a workshop on the theme of "Real Time Identity for You." The goal of this workshop is to help students better understand themselves, their classmates, and their aspirations, as well as to consider ways to achieve those aspirations.

The "Real Time Identity for You" workshop helped students to:
• become the best they can be right now.
• learn about who they are at their core.
• develop the skills they need to contribute more effectively to their educational community.

Workshop Content:
• Understanding your Core Identity (Who are you at your core?)
• Understanding your External Identity (How do other people see you?)
• Understanding your Aspirational Identity (What type of person do you want to become?)
• Planning actionable steps toward achieving one's aspirational identity.
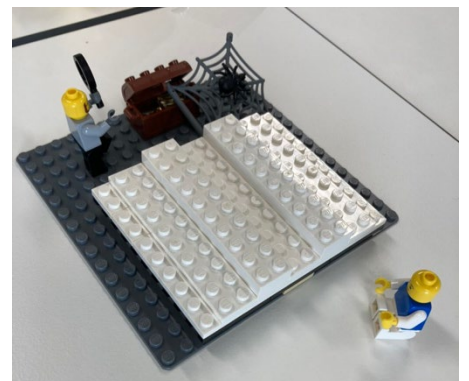
*Day 3: Science, Technology and Society*

On the third day of the course, students explored how science and technology have made both positive contributions, and have had negative impacts on society. They concluded by building models to express their predictions about how science and/or technology could make society better in the future.

Students first built individual models, then negotiated the core elements of their models to create shared models. In total, they created three shared models:
• Positive contributions
• Negative impacts
• Predictions for the future

Examples and ideas:
• Positive contributions included discoveries, recording and passing down knowledge, "Standing on the shoulders of giants"
• Negative impacts included inequality, the digital divide, disconnectedness, abuse of information technology, and negative impacts on the environment
• Predictions for the future included: more enhanced health care technology; more secure and private communication methods, more equality
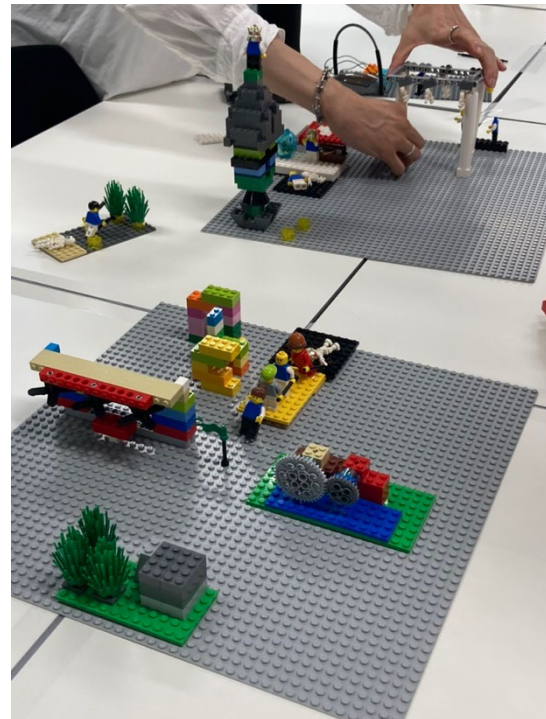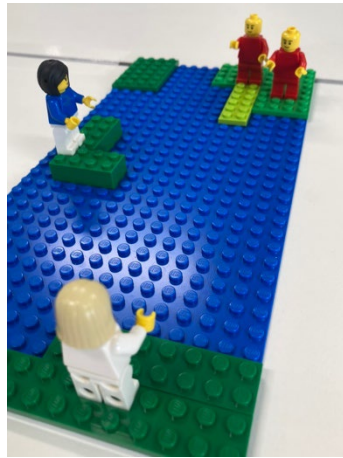
Day 4: Global Issues and Science

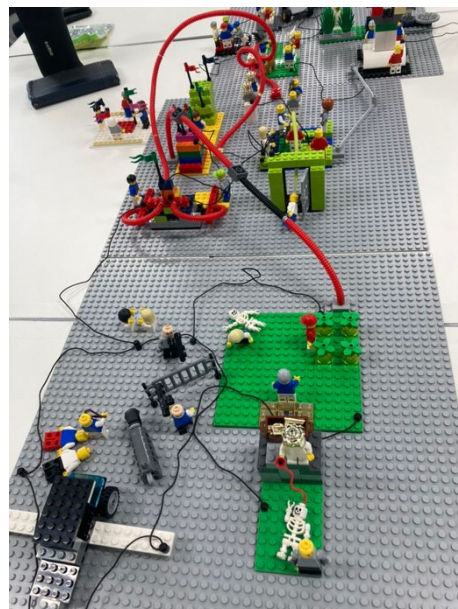On the fourth day of the course, students focused on the theme of Global Issues and Science.

As a warm-up, students built models in response to this prompt:

"Build a model that represents the word 'global' for you. It could be about people, the planet, connections, technology, culture, or anything else that comes to mind."

Students proceeded to build individual and shared models to answer the following prompts:
1. What do you think is the most important global problem facing people today?
2. What is one solution you can propose to solve this problem (or these problems)?
3. How can your research or laboratory contribute to solving these important global problems?

Day 5: SWOT Analysis and Predictions and Responses

On the fifth and final day of the course, students participated in a workshop to conduct a personal SWOT analysis and then used those models as the basis to make predictions and responses. The students created models to answer the prompts below:

SWOT Analysis:
1. Create a visual representation of your strengths and abilities.
2. Create a visual representation of your flaws or weak points.
3. Create a visual representation of your opportunities.
4. Create a visual representation of the threats or risks that can hinder or slow down your progress.
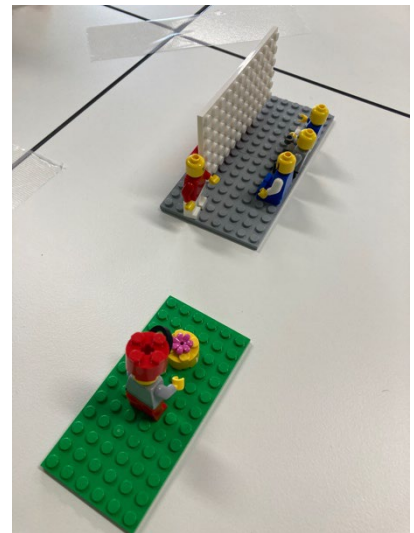
Using the *SWOT Analysis* models as anchors for discussion, students then built models in response to the following prompts:

Predict how the social problems, economic systems, and industrial structures of Japan, and the rest of the world, will change in 20 to 30 years' time.

How will you respond to these issues (methods of finding and solving problems) based on science and technology, while exercising your own leadership?

To conclude the course, students built a model in response to one of the following questions:

"What have you learned this week?"
or
"What is one way that your way of thinking has changed?"