Using the LEGO® Serious Play® method in English for Materials Scientists 3a
September 11-15, 2023

This course uses the LEGO® Serious Play® method: an innovative, experimental facilitated learning process designed to enhance innovation and communication. This method is 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.

By participating in LEGO® Serious Play® workshops on various scientific topics, students develop skills in conversation conventions, and subsequently improve their ability to have deeper discussions on scientific topics in general and their areas of research in particular. Students actively participate as they solve problems together, all while having fun in an environment that encourages free idea generation.

September 11-15, 2023
Day 1: Orientation, Skills Building, Introductions
Day 2: Real Time Identity for You
Day 3: Science, Technology and Society
Day 4: Global Issues and Science
Day 5: SWOT; Predictions and Responses

Day 1: Orientation, Skills Building, Introductions
On the first day of the course, students did activities to learn LEGO® Serious Play® skills and practice storytelling. They built models to answer various prompts that would allow them to share some interesting information about themselves as a way to have non-traditional self-introductions.

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

What is one challenge that graduate students face in today's society?

The models revealed some of the challenges that each member of the course is facing, and also the challenges that the community of graduate students face as a whole. When the models were completed, students shared their ideas and created a landscape to compare and contrast challenges and experiences.

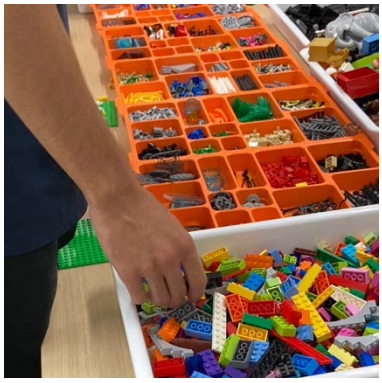
Day 2: Real Time Identity for You
On the second day of the course, students had a workshop on the theme of "*Real Time Identity for You*" to help them to understand themselves better, and to understand their classmates better.

The *Real Time Identity for You* workshop helped students to:

- Become the best that they can become right now;
- Learn about who they are at their core;
- Realize the skills they need to become more effective members of their educational community.

Workshop Content:

- *Understanding your Core Identity*
- *Understanding your External Identity*
- *Understanding your Aspirational Identity*



Day 3: Science, Technology and Society
On the third day of the course, students had a workshop on the theme of how science and technology has made both positive and negative contributions to society. Students built individual models and then negotiated the core elements of their models and created a shared model. Students created three shared models: positive contributions, and negative contributions; the third model was in response to this prompt:

What is one contribution to society that you would like to come from your Lab to prevent/solve these problems that we have defined?

Students concluded the workshop by using the connections kit to make connections between and among the three shared models to see how various elements influence other elements, and to see how they are connected.

Day 4: Global Issues and Science

On the fourth day of the course, students focused on the theme of Global Issues and Science. Students built individual models 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/these problem(s)?
3. How can scientific education (specifically or in general) raise global understanding and action?

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

What is one reason why the world needs scientists?

The models revealed that science and engineering will be at the core of the solutions to the most pressing global issues of the day. Proposals for solutions came from the research students are currently doing. Furthermore, scientists, with their unique approach to problem solving and innovation, will more than likely become major players in the charge to solve global issues and make the world a better place in the future.

Day 5: SWOT; Predictions and Responses

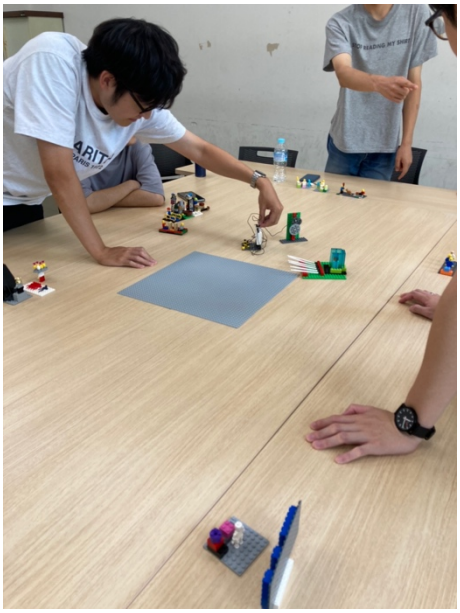
On the fifth and final day of the course, students had a workshop on personal strategic planning by doing a SWOT analysis of themselves to better understand their: strengths, weakness, opportunities, and threats.

Workshop Content:

- a visual representation of strengths and abilities,
- a visual representation of flaws/weak points,
- a visual representation of opportunities,
- a visual representation of the threats or risks that can hinder/slow down progress.

In the second part of the workshop, the students created models to answer the prompts below:

1. **Predict how the social problems, economic and industrial structures of Japan and the rest of the world will change in 20 to 30 years' time.**
2. **How will you respond to these issues (methods of finding and solving problems) based on science and technology, while exercising your own leadership.**



The models revealed the students' strengths and show how they are positioned to make contributions to the scientific community, and future society in general. They showed areas in which they need improvement. Furthermore, students were able to understand

and discuss the various opportunities they have been given as a result of their hard work and their participation in the Cadet Program. The predictions that students made revealed their understanding of the world; their responses were focused on their current and future research and what role it will play in preventing and solving future problems.