Environmental Report 2024

Ochanomizu University

Ochanomizu University Environmental Report 2024

Contents

1 Greetings from the President

The world continues to face a variety of difficulties such as the spread of new infectious diseases, severe climate changes, resource depletion, environmental pollution, and demographic upheaval. We must find solutions to these pressing global issues in order to create and maintain a sustainable global society.

Ochanomizu University continues to strive to resolve these issues by establishing a research and innovation center and promoting cutting-edge research through a fusion of academic areas that transcends the boundaries of the humanities and sciences. We aim to “realize a sustainable society where no one is left behind”, which is the principle of “Sustainable Development Goals (SDGs)”.

Since its foundation in 1875 (the 8th year of the Meiji era), Ochanomizu University, based on its tradition of and achievements in shaping women who will play active roles both in Japan and abroad, has been committed to supporting all women, regardless of their age or nationality, by protecting their individual dignity and rights in order to help them deepen their learning and proactively challenge themselves to develop their own unique qualities and abilities. Our mission is "to be a place where all women who are motivated to learn can realize their earnest dreams”.

We will continue to promote human resources development and social contribution activities by realizing our university's mission and promoting education and research to protect the current and future global environment. We will also continue to strive to realize a safe, secure, environmentally friendly, and sustainable campus in consideration of SDGs such as reducing CO2 emissions to achieve carbon neutrality and contributing to the improvement of the local environment.

In addition, regarding education and daily activities related to environmental maintenance and conservation, not only the university but also its affiliated schools actively implement projects to realize a sustainable society. In the past, the report "The Limits to Growth" had a profound impact on the people of the world, becoming a wake-up call for modern society; however, since then, environmental problems have continued to worsen. Nevertheless, the worsening has led today’s youth to find the current situation unbearable, and they have begun to raise their voices. Many people have realized the true nature of the serious environmental problems we are currently facing and are beginning to work toward solutions. It could be said that finding environmental solutions is actually about exploring the realities of the Anthropocene and determining how to implement SDGs as policies. In any case, our university and its affiliated schools will work together to address various issues faced by modern society, including environmental problems, in an effort to move toward the sustainable development of humankind through the examination of evidence-based scientific measures.

This report is a review and summary of the university's environmental efforts towards these global environmental conservation projects. We hope you will take the time to read this report and learn more about the university's environmental improvement activities.

Yasuko Sasaki

President
Ochanomizu University

The main gate, one of the Registered Tangible Cultural Properties of Japan

Environmental Policies of Ochanomizu University

Ⅰ. Basic Philosophy

Ochanomizu University recognizes various environmental problems as urgent issues to be solved at a global level. We try to create a secure and safe campus while taking the global environment into consideration, and we play an active role in our society to realize a sustainable world. We also contribute to the creation of a prosperous future by striving, through our daily educational research and other activities, to help our students and employees develop into people who are aware of and capable of solving the environmental issues facing modern society.

Ⅱ. Basic Policies

Based on our basic philosophy, we pursue environmental efforts under the five basic policies presented below.

Promotion of Energy Conservation	Effective Use of Natural Resources	Prevention of Toxic Substance Leaks
Promotion of Pro-Environment Activities and Development of Pro-Environment People		
Social Accountability and Information Transmission		

1. Promotion of Energy Conservation

Based on the "Ochanomizu University Energy Management Standard", we concentrate to our efforts on carbon neutrality by promoting energy conservation on campus and educating all members of the university about energy conservation.

2. Effective Use of Natural Resources

We aim to be an eco-campus by reducing and effectively utilizing environmental resources consumed on campus and reducing waste discharged off campus.

3. Prevention of Toxic Substance Leaks

We prevent the leaking of toxic substances and pollutants by complying with environmental laws and regulations and properly managing all chemical substances.

4. Promotion of Pro-Environment Activities and Development of Pro-Environment People

We aim to help our students and staff develop into people with environmental mindsets who can think independently and actively work toward solving environmental problems through various environmental conservation activities, education, and research activities.

5. Social Accountability and Information Transmission

We aim to serve as a bridge between the local and international communities by transmitting information widely within and outside the university on the university's environmental philosophy, initiatives, and achievements in environmental considerations.

(Established in September 2021)

Our Efforts to Achieve SDGs

Ochanomizu University HP <Our Efforts to Achieve SDGs>
https://www.ocha.ac.jp/program/menu/sdgs/top.html

SDGs (Sustainable Development Goals), which were adopted by the UN Summit held in 2015, are universal goals whose principle is based on the concepts of “inclusive society” and “leave no one behind”. It requires various countries, companies, and institutions to tackle and achieve specific global goals by 2030. We have been actively committed in various ways to achieving the SDGs, which consist of 17 goals and 169 targets. In 2022, we launched an “Institute for SDGs Promotion” project to contribute to greater SDG achievement than before.

In this report, we use icons to indicate the SDGs related to each of our environmental initiatives (see P. 7).

THE Impact Rankings

In 2019, the Times Higher Education (*THE*) launched Impact Rankings, which is a visualization of how the world's universities are tackling social issues using the framework of the United Nations Sustainable Development Goals (SDGs). Universities select four or more of the 17 SDGs and enter the relevant indicators and evidence. The selection of “SDG 17: Partnerships for the Goals” is required. Ochanomizu University ranked first in Japan for “SDG 5: Gender Equality” in fiscal year (FY) 2023. In FY2024, we plan to make entries for 9 items.

Carbon Neutral Initiatives

The University Coalition for Carbon Neutrality, established in July 2021, aims to discuss the forms and directions of universities' contributions to decarbonization through collaboration between universities, to promote research and development and the social implementation of results, and to strengthen the ability to disseminate information both domestically and internationally. More than 180 national, public, and private universities, including ours, and other institutions are participating. Ochanomizu University is a member of the Zero Carbon Campus WG, one of five work groups. As a leader of carbon-neutral initiatives in the local community, we will take the initiative in promoting zero-carbon initiatives on university campuses. In FY2023, four working sessions were held to share information and exchange opinions on carbon-neutral initiatives and on the achievements of other universities.

In addition, we have implemented the following initiatives to achieve a zero-carbon campus:

- Construction plans for implementing carbon-neutral measures

  As energy-saving measures on campus, we have formulated construction plans to, among other things, convert lighting fixtures to LED and install air-conditioning equipment with higher efficiency. We have been systematically implementing these measures since FY2022.
- Procurement of electricity from 100% renewable energy sources

  We concluded a contract with Otsuka 1 complex to procure 100% of electricity supplied from renewable energy sources starting in FY2022.
- Creation of a roadmap toward zero carbon

  We have begun preparations to create a roadmap for our efforts to go zero carbon on campus, create innovation, and develop human resources in order to achieve carbon neutrality by 2050. These preparations are expected to be completed by the end of FY2024.

Annual Environmental Report Policy

***Aim**

Ochanomizu University has made and released an environmental report since FY2021. The university's environmental policy, initiatives, achievements, and other information are widely reported to our stakeholders: our students at all levels, graduates, prospective students, patrons, faculty and staff, local inhabitants, corporations, and local government branches. The reports are also used as a communication tool to connect with society by clarifying the direction in which we are aiming to address various environmental issues.

***Areas included in this report**

Ochanomizu University Otsuka Building No. 1, Otsuka Building No. 2, Higashimurayama Building, and Tateyama Building

***Reporting period for information provided**

FY2023 (April 2023 – March 2024)

***References**

Ministry of the Environment, “Environmental Reporting Guidelines 2018”

Ministry of the Environment, “Manuals for Items to be Reported in Environmental Reporting, etc. (ver. 3)”

3 University Overview

Ochanomizu University Campus Overview

The University's campus consists of five buildings: Otsuka Building No. 1 (Bunkyo-ku, Tokyo), which is the main campus, Otsuka Building No. 2 (Bunkyo-ku, Tokyo), Itabashi Building (Itabashi-ku, Tokyo), Higashimurayama Building (Higashimurayama-shi, Tokyo), which is a suburban garden (farm), and Tateyama Building (Tateyama-shi, Chiba), which contains Institute for Marine and Coastal Research and outdoor education facilities.

The total land area of these five buildings is approximately 140,200 ㎡ and the total building area is approximately 102,300 ㎡. The main campus, Otsuka Building No. 1, has a land area of approximately 113,700 ㎡ (81% of the total) and a building area of approximately 89,100 ㎡ (87% of the total). It occupies a large portion of the university's total land area.

No.	Building name	Address	Main facility	Site area / building floor area
1	Otsuka Building No. 1	Otsuka 2-1-1, Bunkyo-ku, Tokyo	University building, University library, Student support facility, Attached school building	113,741 / 99,212
2	Otsuka Building No. 2	Otsuka 1-6-6, Bunkyo-ku, Tokyo	Koishikawa dormitory, Ochanomizu University SCC Ubiquitous Experimental House	2,553 / 2,784
3	Itabashi Building	Nakamachi 2-1, Itabashi-ku, Tokyo	-	8,029 / -
4	Higashimurayama Building	Hagiyama-cho 2-3-1, Higashimurayama-shi, Tokyo	Suburban garden (farm)	3,168 / -
5	Tateyama Building	Koyatsu 11, Tateyama-shi, Chiba	Institute for Marine and Coastal Research, Tateyama Outdoor Education Facility	8,623 / 1,107

*Area as of May 1, 2023

Otsuka Building No. 1 (Otsuka Campus) Overview

Present Condition of the Site

Otsuka Building No. 1 is surrounded by National Route 254 (Kasuga Dori), ward roads, and private residences, and is in an area with a mix of educational facilities such as universities, high schools, and junior high schools, as well as apartments and single-dwelling residences. The main gate faces the national road on the northeast side of the site, and the main building of the university is located directly in front of the gate. There is a private university, a school affiliated with another national university, and a public junior high school on the south side of the site. Other buildings are sites adjacent to single-family homes and condominiums.

Educational Environment

As of FY2023, Ochanomizu University had three faculties: Letters and Education, Science, and Human Life and Environmental Sciences; however, we became a women's university with four faculties, adding Transdisciplinary Engineering from the beginning of the 2024 academic year. The Otsuka 1 complex, as the main campus, is where most faculties, graduate schools, research centers, libraries, and other university functions are concentrated. In addition, the campus encompasses an affiliated kindergarten, elementary school, junior high school, and high school, and the campus environment has been developed based on a consistent educational philosophy through collaboration between the university and the graduate school, as well as the Bunkyo Ward Ochanomizu Women's University Kindergarten and the Izumi Nursery (childcare facility).

Natural Environment

Many trees are planted on the campus. It is a valuable green space not only for the university but also for central Tokyo. The garden contains donated trees, commemorative trees, and rare plants, including a maple tree gifted by Empress Kojun of Japan. In addition, the Tokyo Bunkyo-ku Green Protection Regulation requires that greenification standards be met when planning buildings above a certain size. Taking such factors into account, we are striving to preserve and maintain the greenery on our sites.

Building Area / Population

Universities/Graduate Schools

Building area	18,834 ㎡
Total floor area	64,899 ㎡
Population	
Undergraduate students	2,039 people
Faculty of Letters & Education	928 people
Faculty of Science	558 people
Faculty of Human Life & Environmental Sciences	553 people
Graduate students	763 people
Foreign students	212 people
Research students, etc.	97 people
Faculty and staff	112 people
Total	3,223 people

Affiliated Schools

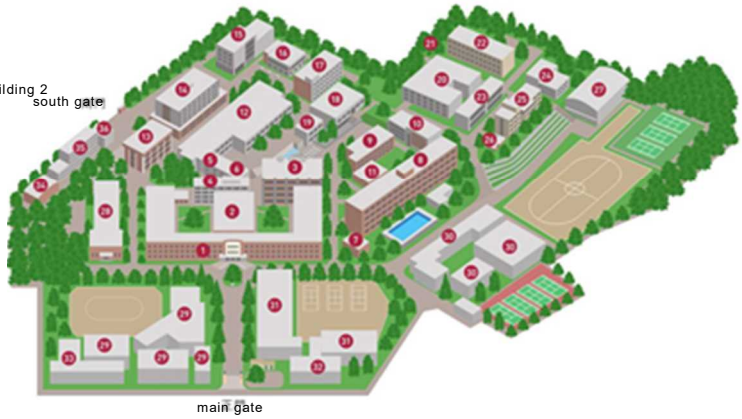
Building area	10,380 ㎡
Total floor area	21,353 ㎡
Population	
High school students	363 people
Junior high school students	319 people
Elementary school students	627 people
Kindergarten children	158 people
Nursery school children	10 people
Faculty and staff	112 people
Total	1,589 people

*Building area & population as of May 1, 2023

CAMPUS MAP

List of facilities

① Main Building
② Auditorium (Kiindo)
③ Integrated Research Building
④ Faculty of Human Life & Environmental Sciences, Building 2
⑤ Ochadai Academic Production Research Building
⑥ Outdoor Elevator Building
⑦ Radioisotope Research Center
⑧ Faculty of Science, Building 1
⑨ Faculty of Science, Building 2
⑩ Faculty of Science, Building 3
⑪ IT Center
⑫ University Library
⑬ Student Service Building
⑭ Faculty of Letters & Education, Building 1
⑮ Inter-Faculty Building 1
⑯ Inter-Faculty Building 2
⑰ Inter-Faculty Building 3
⑱ Cafeteria
⑲ Health Care Center
⑳ Student Dormitory
㉑ Archery Field
㉒ Faculty of Letters & Education, Building 2
㉓ Student Commons
㉔ Student Meeting Center
㉕ Graduate School of Humanities & Sciences / University Innovation Research Building
㉖ Tea House (Houkou-an)
㉗ University Gymnasium
㉘ Kindergarten
㉙ Elementary School
㉚ Junior High School
㉛ High School
㉜ Hisao & Hiroko TAKI PLAZA
㉝ University Hall
㉞ Izumi Nursery
㉟ Ohtsuka Lodging
㊱ Center for Early Childhood Education and Care



*Campus Map as of May 1, 2023

Campus Environmental Maintenance Policy

In the Campus Master Plan 2021, one of the basic policies sets the goal of "realizing an education and research environment that takes the global environment into account" to create a safe, secure, and appealing campus in consideration of the SDGs. In accordance with this basic policy, we promote integrated global environmental measures that maintain a green, natural environment and take energy conservation into consideration to realize a sustainable campus environment.

Specific maintenance policies based on the Campus Master Plan 2021 are as follows.

1. We will promote the preservation and succession of trees on campus and the maintenance and preservation of the existing natural environment by utilizing them for educational purposes.
2. We will upgrade and maintain facilities and equipment that have deteriorated due to age and reduced functionality so that they can be used effectively over the long term.
3. We will develop a plan to actively incorporate global warming countermeasures (energy conservation, prevention of global warming, etc.) into the development of facilities.
4. We will promote the development of environmentally friendly facilities to maintain a sustainable, environmentally proactive campus by implementing global warming countermeasures in accordance with relevant laws and regulations and striving to reduce greenhouse gas emissions.

Ochanomizu University HP < CMP2021 publication page>
https://www.ocha.ac.jp/archive/introduction/CPM2021ver20210329.pdf

Outline of Otsuka 2 Housing

Current Status of the Site

Otsuka 2 housing complex is a 3-minute walk from Otsuka 1 housing complex and is located on the boundary between an educational district with private universities and other educational facilities and a residential area. The north and east sides of the site are bordered by Atomi Gakuen and Teijin Gakuen, with Takushoku University on the west side across the front road and a quiet residential area on the south side.

Educational Environment

Two student dormitories, Koishikawa Dormitory and Ochanomizu University SCC, are located in the Otsuka 2 Complex, and the Ubiquitous Experimental House, an experimental facility, is located on the site next to the Koishikawa Dormitory. The Koishikawa Dormitory is a student dormitory for graduate students and is managed through the self-governance of the residents. Ochanomizu University SCC is a student dormitory for first- and second-year undergraduates. Based on the concept of "a space to live together and grow together," the house system is designed for loose coexistence,

Outline of Higashimurayama Danchi

Current Status of the Site

Higashimurayama Danchi is located at a 4-minute walk from Hagiyama Station on the Seibu Tamako Line and Seibu Haijima Line, and is surrounded by a quiet residential area with convenient transportation access. It was divided into an east side and a west side with a Tokyo Metropolitan Government park and condominiums in between, but the west side site was discontinued at the end of FY2021.

Educational Environment

Higashimurayama Danchi has been developed as a hands-on learning farm (Higashimurayama Suburban Garden) for kindergarten students, children, and students of affiliated schools. Every year, the farm is used as part of educational activities to grow and eat vegetables such as sweet potatoes, radishes, and potatoes.

Outline of Tateyama Danchi

Current Status of the Site

Tateyama Danchi is located in Tateyama City at the tip of the Boso Peninsula. The northwest side of the site faces the shore of Tokyo Bay, and the southeast side borders private land (fields).

Educational Environment

The Tateyama Complex includes the Institute for Marine and Coastal Research (laboratory and accommodation buildings), which is a seaside laboratory affiliated with the Faculty of Science, the Tateyama Outdoor Education Facility, which is a facility for extracurricular activities that can accommodate students, and staff housing. The Wangan Biology Education and Research Center has experiment and training facilities and accommodations along the coast and is used for various practical training and research endeavors related to marine life, as well as for graduate and doctoral research.

*Summary of each complex as of May 1, 2023

4 Environmental Consideration Plan

The University formulates an action plan for each fiscal year based on the five basic policies of "promotion of energy conservation", "effective use of resources", "prevention of leakage of hazardous substances", "promotion of environmental activities and development of environmentally aware personnel", and "accountability to society and dissemination of information", and promotes environmental consideration initiatives. Below is a description of our ongoing action plan as well as a self-evaluation of our implementation of the plan during FY2023.

1. Promotion of Energy Conservation

Issue	Action Plan	Evaluation	Reference Page
Reduction of Energy Consumption / Reduction of Greenhouse Gas Emissions 	We aim to reduce energy consumption per unit of production by at least 1% annually across the university. We implement energy conservation measures based on an energy conservation check list. We continue to systematically replace LED lighting and aging air conditioning equipment as a measure against global warming. Newly installed equipment is and will continue to be energy-saving or high-efficiency equipment.	○	P. 12 P. 14
	We were unable to reduce energy consumption by more than 1% compared to the previous fiscal year. Increased energy consumption due to the resumption of face-to-face classes is considered to be a factor.		
Energy Conservation Awareness 	Monthly utility consumption is published on our website to allow visualization of energy consumption. We continue to post various energy conservation related notices to educate students, faculty, and staff about energy efficiency and conservation.	○	P. 12

2. Effective Use of Resources

Issues	Action Plan	Evaluation	Reference Page
Reduction of Drinking Water Consumption / Reduction of Wastewater Consumption 	We continue to promote the installation of water-saving fixtures and onomatopoeic privacy devices when renovating toilets. We monitor water consumption in each building and work to promptly detect leaks. We continue to promote installation of rainwater harvesting and infiltration facilities.	○	P. 13
Reduction of Paper Consumption 	We continue to promote paperless meetings by using digital materials.	○	P. 13
Reduction of Waste Emissions 	We promote the reuse and efficient utilization of resources on campus. We promote recycling of resources by thoroughly separating and collecting waste.	○	P. 14 P. 17

3. Preventing Leakage of Hazardous Substances

Issues	Action Plan	Evaluation	Reference Page
Prevention of Leakage of Chemical Substances 	Chemicals are properly managed and disposed of in accordance with the Chemicals Management Manual. We hold training sessions for graduate students and faculty members on the use of chemical management software. For undergraduate students, a faculty member explains the handling of chemicals before each experiment.	○	P. 16
Prevention of Leakage of Hazardous Substances 	We continue to properly remove and dispose of building materials containing asbestos.	○	P. 16

4. Promotion of Environmental Activities and Development of Environmentally Aware Personnel

Issues	Action Plan	Evaluation	Reference Page
Promotion of Environmental Preservation Activities 	We continue to make efforts to beautify our campus' environs by thoroughly separating trash, cleaning up regularly, pruning trees, etc. We encourage student-led environmental activities.	○	P. 19 ～P. 22
Promotion of Environmental Education and Research Activities 	Through environmental education, we encourage students at all levels to become interested in environmental issues.	○	P. 23 ～P. 36

5. Social Accountability and Information Dissemination

Issues	Action Plan	Evaluation	Reference Page
Dissemination of Information Inside and Outside the University 	We continue to publicize our environmental policy both inside and outside the university. Self-assessment of the results of our efforts is ongoing and continues to be made public both inside and outside the university.	○	P. 1 ～P. 10

【Evaluation】

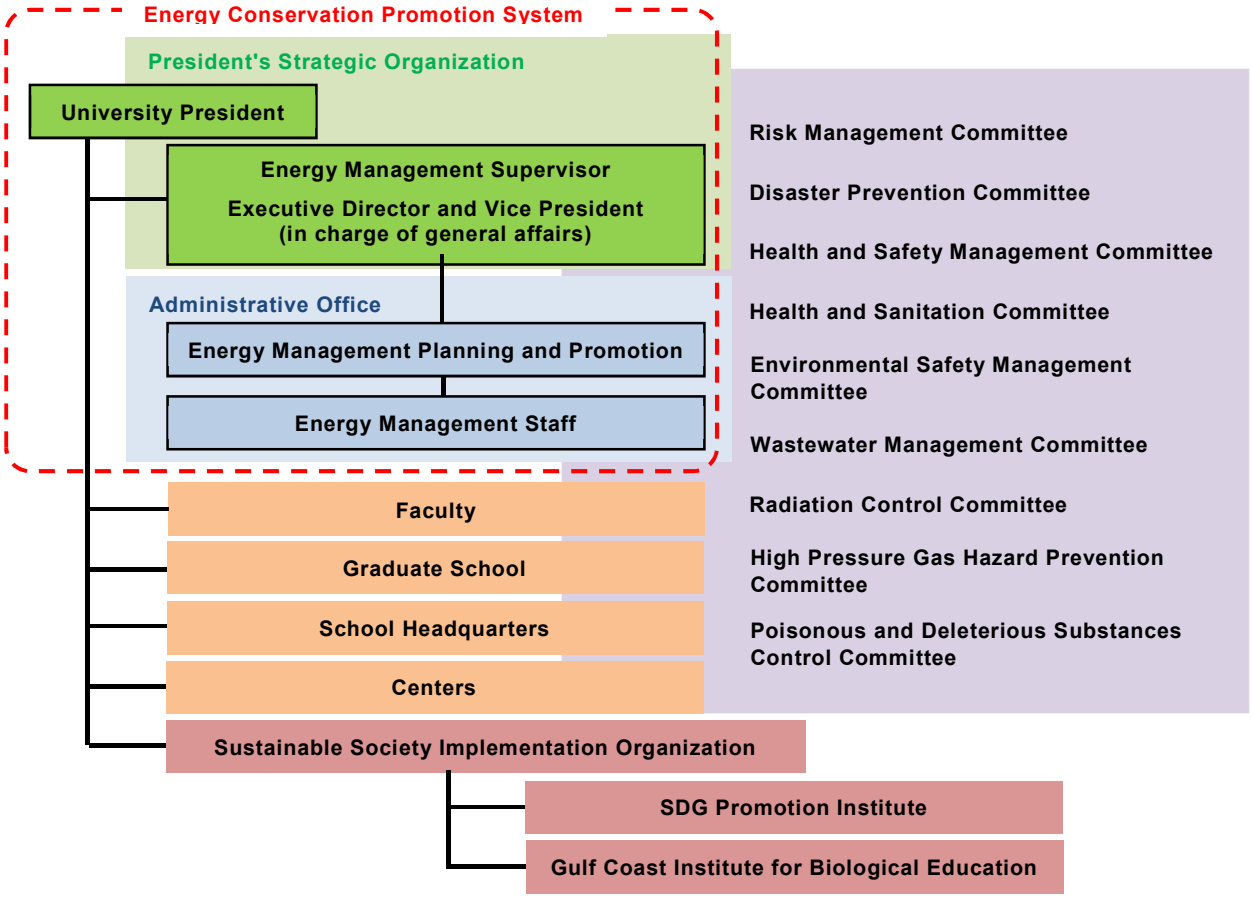
○ Targets achieved　△ Targets not yet achieved but showing a good improvement trends

× Insufficient effort

5 Environmental Management Organization Structure

To ensure the implementation of our plans for environmental consideration, the university has implemented an environmental management organizational structure under the leadership of the President, as shown in the figure below. Each committee is responsible for cross-organizational review and implementation of plans regarding various environmental issues within the university. Faculty members and administrative staff from the university's faculties, graduate schools, and affiliated schools have been appointed as members of each committee, and the entire Ochanomizu organization is working on environmental issues.

In FY2022, the SDGs Promotion Institute and the Gulf Coast Institute for Biological Education were newly established under the Sustainable Society Implementation Organization.



Sustainable Society Implementation Organization

The creation of a sustainable society requires that society as a whole promote the achievement of the SDGs. We established this organization in order to develop human resources for this purpose, and, going forward, it is tasked with planning and implementing SDG education and research programs. By building a research and innovation center for solving urgent social issues and promoting cutting-edge research that transcends the boundaries of the humanities and sciences, we aim to realize a sustainable society in which no one is left behind, which is the principle of the SDGs.

SDG Promotion Research Institute

The SDG Research Institute is organized by researchers in the fields of life science, life and environment science, gender studies, and nutrition education, which are characteristic of this university, and promotes research aimed at contributing to a sustainable society. In addition to the development of an SDG-integrated education program from early childhood by taking advantage of the fact that affiliated schools are located on the same campus, the institute aims to support activities through joint research and internships with companies, local governments, and other organizations.

Gulf Coast Institute for Biological Education

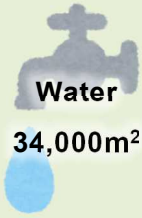
This institute's goal is to promote research of and education about biology and the environment of the Gulf region and to deepen society's understanding of natural sciences and the environment through educational activities both in the field and in the classroom. The Center will promote research on the development, evolution, ecology, and conservation of plants and animals inhabiting a wide range of environments from the intertidal zone to the deep sea.

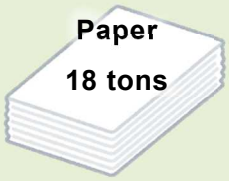
6 Environmentally Friendly Practices

(1) Material Flow

Material flow is the grand total of the amount of resources consumed, the flow of resources within an area, and the amount of resources discharged from an area within a fixed period of time. The first step in creating a reuse-oriented society is to understand the quantity of resources we extract, consume, and dispose of.

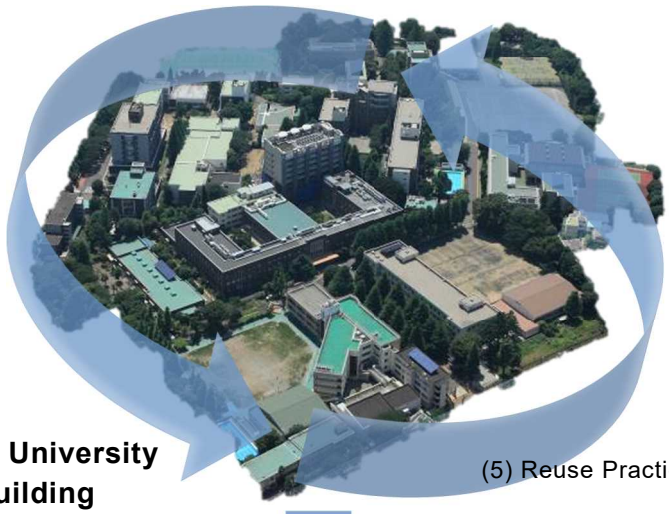
The following is an overview of the material flow of the Otsuka 1 Building (Otsuka Campus) in 2023.





(2) Energy consumption [P. 12] (3) Water consumption [P. 13] (4) Paper consumption [P. 13]

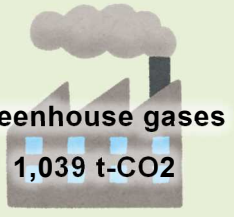
Input



Ochanomizu University Otsuka 1 Building

(5) Reuse Practices (on campus) [P. 14]

Output



(6) Greenhouse gases [P. 14] (7) Sewage [P. 15] (8) Chemical substances [P. 16]
(9) Hazardous substances etc. [P. 16] (10) Refuse [P. 17]

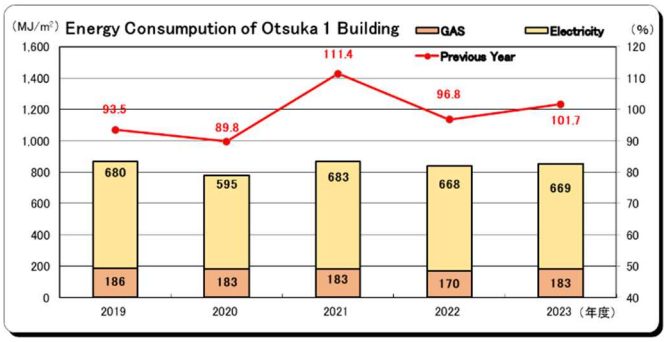
(2) Energy Consumption

Energy Conservation

Ochanomizu University established the "Ochanomizu University Energy Management Standard" in 2004 and has been promoting energy conservation on campus by appropriately implementing energy management under the energy conservation promotion system.

The "Ochanomizu University Energy Management Standard" is based on the "Law Concerning the Rational Use of Energy (Energy Conservation Law)" and sets a target of "reducing energy consumption per unit* by 1% or more compared to the previous year". (*Unit refers to the energy consumption ratio based on the floor area of a building.)

The unit energy consumption of Otsuka 1 complex in FY2023 was approximately 1.6% higher than that of the previous fiscal year (FY2022). As we were unable to achieve the target, we will make further efforts to conserve energy by replacing aging facilities and implementing other measures.



* The calculation standard for energy consumption intensity is based on reference [10]

【Energy Conservation Practices (2023)】

Energy conservation measures were implemented based on the energy conservation checklist in the "Ochanomizu University Energy Management Guidelines". Specific examples are provided below.

- The air conditioners in lecture halls are set to turn off automatically in the event that someone forgets to turn them off.
- During the summer, the heated toilet seats in restrooms and electric water boilers in the kitchen are switched off.
- The effective utilization of blinds and curtains is encouraged to reduce the use of electric lighting and air conditioning.
- During lunch breaks, all lighting in offices and other rooms is turned off.
- During sunny days, lights near windows are turned off.

In each building, old air conditioners have been replaced with high-efficiency air conditioners and LED lighting fixtures have been installed.

Energy Conservation Awareness

Besides installing energy-saving electrical appliances, it is important to raise the awareness of students and faculty members to achieve effective energy conservation. Together with energy conservation efforts, the university is working to raise awareness about energy conservation among students and faculty members.

【Practices Related to Energy Conservation Awareness (2023)】

Comparisons of the monthly and yearly consumption of electricity, gas, and water are recorded in graphs and published on the university website. In addition, real-time information on electricity consumption is disclosed to encourage energy usage visibility.

Ochanomizu University HP
<Electricity Consumption Status>
https://www.ocha.ac.jp/save_energy/index.html

In order to promote energy conservation during the summer, when the use of air conditioners is at its peak, the university encourages all faculty members to take one week off (August 9th – 16th).

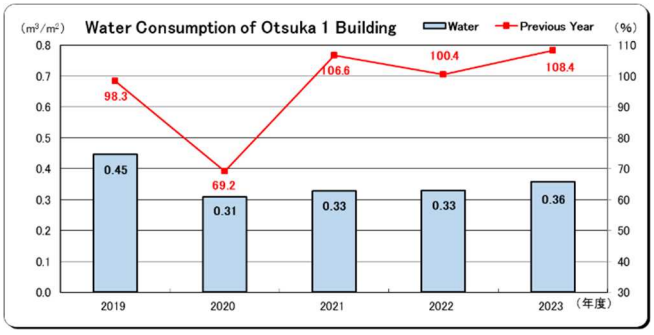
The following flyers were distributed and other measures have been implemented to raise awareness about energy conservation.

- Students, faculty, and staff are encouraged to dress lightly (Cool Biz campaign) during the summer.
- "2 Up 3 Down Campaign" flyers are posted near every elevator.
- Stickers to encourage energy and water conservation are pasted near switches and water faucets.

(3) Water Consumption

We publish monthly water consumption on the university's website to raise awareness of water conservation among students, faculty, and staff. In addition, when toilets are renovated, we promote the use of water-saving sanitary fixtures that use less water for flushing. These efforts to conserve water resources are meant to reduce the consumption of energy essential for the use of water and hot water, which in turn reduces CO2 emissions that contribute to global warming and help protect the environment.

The unit* water consumption of the Otsuka 1 complex in FY2023 increased by approximately 8% compared to the previous fiscal year (FY2022). We need to make further efforts to implement and encourage energy-saving activities. (*Unit refers to the water consumption ratio based on the floor area of a building.)



*The calculation standard for water consumption is based on reference [10].

【Initiatives to Reduce Water Consumption/ Sewage Discharge (2023)】

We strive to quickly detect leaks by reading the water meters of each building weekly and understanding the trends in water usage for each building. In FY2023, a water leak occurred during the renovation of the water supply and drainage system at the affiliated elementary school, causing a sudden increase in water usage; we will work to prevent recurrence.

During the renovation of the Faculty of Science Building No. 1 (west side), rainwater infiltration pipes and rainwater infiltration trenches were installed to reduce sewage discharge. Reducing sewage discharge aids in reducing the amount of energy used to treat wastewater at the sewage treatment facility, which in turn reduces greenhouse gas emissions.

When the new student dormitory (Otowakan) was constructed, new rainwater infiltration pipes and rainwater infiltration trenches were installed to reduce the amount of sewage discharge that flows into the public sewage system. Additionally, rainwater storage tanks were installed outdoors and are used for watering outdoor greenery.


Rainwater storage tank


Rainwater infiltration pipe and rainwater infiltration trench

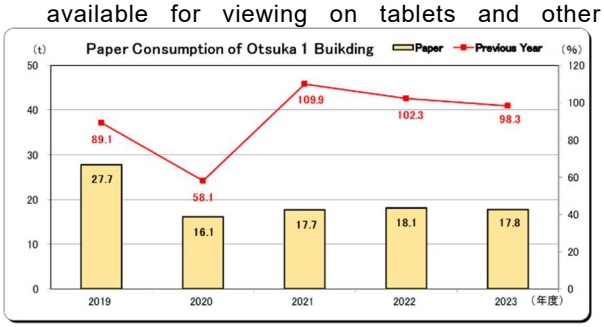
(4) Paper Consumption

Ochanomizu University has a plan to determine measures that "should be implemented to reduce greenhouse gas emissions in its affairs and business operations." As part of this plan, we have implemented "reducing the amount of paper used" as part of our effort to reduce greenhouse gas emissions. The amount of paper purchased in FY2023 was almost the same as the previous year. In FY2020, the implementation of remote meetings and online classes during the COVID-19 pandemic promoted the conversion of physical materials (e.g., paper) into electronic files. However, from FY2022 onwards, face-to-face classes resumed, as did the distribution of paper materials, and we believe that the use of such materials will continue.

【Efforts to Reduce Paper Consumption (2023)】

The following initiatives were implemented to reduce the amount of paper purchased.

- PDF documents for various meetings were made available for viewing on tablets and other devices to promote paperless meetings.
- The distribution of paper materials has been reduced by using electronic bulletin boards.



*The calculation standard for paper consumption is based on reference [10].

Electronic bulletin boards

(5) Reuse Practices (on campus)

The university strives to reuse and allocate resources effectively by implementing the following initiatives to reduce the amount of waste generated.

- Furniture (desks, chairs, lockers, etc.) that is no longer needed is stored in a common storeroom on campus and saved for future use.
- The university is effectively promoting the reuse of older items by advertising used electrical items (computers, printers, etc.) through bulletin boards and the campus groupware system.
- Reusable equipment from previous renovation projects is stored and reused for other renovation projects.
- A “help yourself” corner has been set up in the library to provide visitors with materials that are no longer necessary to the library. These materials include duplicate titles that are held by the library, books that are due to be disposed of because of outdated content, journals that have exceeded their retention periods, books donated by publishers or authors that cannot be displayed in the library and so on.

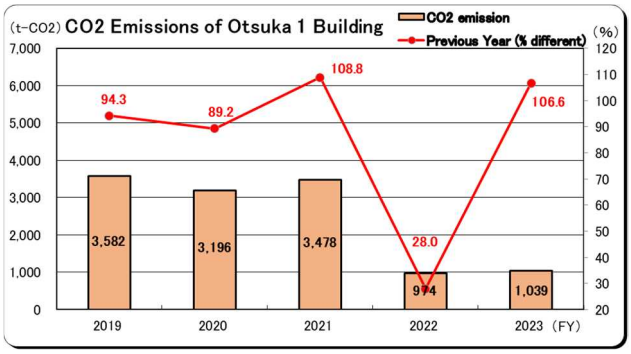
Reusable equipment storage

Help yourself corner

(6) Greenhouse Gases

Reduction of CO2 Emissions

As the fourth mid-term goal and mid-term plan, our university has set the goal of "actively promoting CO2 reduction with the aim of achieving carbon neutrality based on the Campus Master Plan 2021." The CO2 emissions of the Otsuka 1 complex in FY2023 increased by approximately 7% from the previous fiscal year (FY2022). In FY2022, we switched our electricity supply contract to a supplier that has lower CO2 emissions; as a result, our emissions have decreased significantly compared to before.



*The calculation standard for CO2 emissions is based on reference [10].

【CO2 Emissions Reduction Efforts (2023)】

Fluorescent lighting fixtures were replaced with LED lighting fixtures.

Aged air conditioners were replaced efficient air conditioners. Moreover, timers were installed in ventilation equipment with high volume discharge to allow intermittent operation.

Old water boilers were replaced with efficient water boilers.

The buildings’ thermal insulation was improved by implementing the changes listed below. Improved thermal insulation in buildings increases air conditioner efficiency in summer and winter, thus leading to energy conservation and reduction in CO2 emissions.

- Insulation was installed on the exterior walls, during the renovation of the Faculty of Literature and Education Building 1 (Phase I).
- Double-glazing was adopted as a window glass specification, during the renovation of the Faculty of Literature and Education Building 1 (Phase I)

Fluorocarbons Leakage Prevention

Refrigerants used in air conditioners are a major cause of the greenhouse effect, and the leakage of refrigerants has a significant impact on global warming. In accordance with “The Laws Concerning the Effective Use and Proper Management of Fluorocarbons (Regulation Laws Regarding Fluorocarbons Discharge)”, we strive to prevent fluorocarbons leakage by properly managing equipment that is equipped with fluorocarbons. The calculated leakage of chlorofluorocarbons in FY2023 was 12 t-CO2.

(7) Drainage

The main drainage systems at the Otsuka Campus are divided into the East Gate System, the West Gate System, and the South Gate System, according to the discharge destination into the public sewer system, and the quality of the drainage is regularly tested at the distal end of each system. In FY2023, no materials exceeded the sewage discharge standard value for the 23 wards of Tokyo in any system.

Results of Drainage Water Quality Analysis (October 11, 2023)

Parameter	Standard Value	Result (East Gate)	Result (West Gate)	Result (South Gate)
Cadmium	≤ 0.03 mg/L	< 0.003	< 0.003	< 0.003
Cyan	≤ 1 mg/L	< 0.1	< 0.1	< 0.1
Organic Phosphorus	≤ 1 mg/L	< 0.1	< 0.1	< 0.1
Lead	≤ 0.1 mg/L	< 0.01	< 0.01	< 0.01
Hexavalent Chromium	≤ 0.5 mg/L	0.06	< 0.05	0.07
Arsenic	≤ 0.1 mg/L	< 0.01	< 0.01	< 0.01
Total Mercury	≤ 0.0005 mg/L	< 0.0005	< 0.0005	< 0.0005
Alkyl Mercury	Not detected	Not detected	Not detected	Not detected
Trichloroethylene	≤ 0.1 mg/L	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	≤ 0.1 mg/L	< 0.01	< 0.01	< 0.01
Dichloromethane	≤ 0.2 mg/L	< 0.02	< 0.02	< 0.02
Carbon Tetrachloride	≤ 0.02 mg/L	< 0.002	< 0.002	< 0.002
1,2-Dichloroethane	≤ 0.04 mg/L	< 0.004	< 0.004	< 0.004
1,1-Dichloroethylene	≤ 1 mg/L	< 0.02	< 0.02	< 0.02
Cis-1,2-Dichloroethylene	≤ 0.4 mg/L	< 0.04	< 0.04	< 0.04
1,1,1-Trichloroethane	≤ 3 mg/L	< 0.3	< 0.3	< 0.3
1,1,2-Trichloroethane	≤ 0.06 mg/L	< 0.006	< 0.006	< 0.006
1,3-Dichloropropene	≤ 0.02 mg/L	< 0.002	< 0.002	< 0.002
Benzene	≤ 0.1 mg/L	< 0.01	< 0.01	< 0.01
Selenium	≤ 0.1 mg/L	< 0.01	< 0.01	< 0.01
Boron	≤ 10 mg/L	< 0.1	< 0.1	< 0.1
Fluorine	≤ 8 mg/L	< 0.5	< 0.5	< 0.5
1,4-Dioxane	≤ 0.5 mg/L	< 0.05	< 0.05	< 0.05
Total Chromium	≤ 2 mg/L	< 0.2	< 0.2	< 0.2
Copper	≤ 3 mg/L	0.01	0.02	0.02
Zinc	≤ 2 mg/L	< 0.2	< 0.2	< 0.2
Phenols	≤ 5 mg/L	< 0.5	< 0.5	< 0.5
Soluble Iron	≤ 10 mg/L	< 0.05	< 0.05	0.06
Soluble Manganese	≤ 10 mg/L	< 0.05	< 0.05	< 0.05
Biochemical Oxygen Demand	< 600 mg/L	200	180	71
Suspended Solids	< 600 mg/L	85	110	84
N-Hexane Extractants	≤ 30 mg/L	6	37	5
Nitrogen	< 120 mg/L	22	97	36
Phosphorus	< 16 mg/L	7.6	6.8	2.4
Hydrogen Ion Concentration (pH)	5 .0< <9.0	7.3	7.5	7.3

(8) Chemicals

In accordance with the “Chemical Management Manual from National University Corporation Ochanomizu University”, all chemical agents are properly managed from purchase to disposal, based on the chemical management support system IASO R6, which was created by Kanto Chemical Co., Inc. and Tohoku Ryokka Kankyohozen Co., Inc.

At the IASO lecture, which is held once a year, the following is addressed: how to use the system; each relevant regulation and law, such as the Fire Service Law, the Industrial Safety and Health Law, the Chemical Management Law (PRTR, MSDS etc.); and the attachment of barcode labels and their actual practical uses such as in the disposal of chemicals.

(9) Hazardous Substances

Asbestos

Our university investigates whether building materials containing asbestos are present during building renovation and demolition work, and if they are present, they are properly removed and disposed of in accordance with relevant laws and regulations. In FY2023, a total of 4.1 m3 of building materials containing asbestos were removed and disposed of, as shown in the table on the right.

The Removal and Disposal of Asbestos in FY2023

Building	Type of Construction	Area of Construction	Asbestos Level	Amount of Asbestos Removed
Faculty of Letters, Arts and Education Building No.1	Renovation	Floor	Level 3 (floor tiles)	2.1 ㎡
Affiliated Elementary School Building No.1	Renovation	Sink stand (Wall mounting section)	Level 3 (Thermal insulation material)	2.0 ㎡

High-Pressure Gases

The Committee of High-Pressure Gas Hazard Prevention plans and holds a lecture to teach faculty and students who will be in charge how to handle high-pressure gases safely and the relevant regulations to prevent hazards. Inert gases such as nitrogen and argon are managed in each laboratory, including registering them with IASO. Combustible gases such as hydrogen and oxygen are managed throughout the entire building.

Cylinder Storage for Hydrogen and Oxygen

Hazardous Materials

The University notifies the fire department about chemicals which are classified as “hazardous materials” or “small quantity hazardous materials” under the Fire Service Law and stores them in the designated “storage and handling area”. The type and characteristics of the chemicals (e.g., fire prohibited, water prohibited) are clearly indicated on the building where the chemicals are stored, and the laboratory doors are clearly marked with a contact number in case of an emergency.

Users are certified hazardous material handlers (Class A) and renew their certification as prescribed.

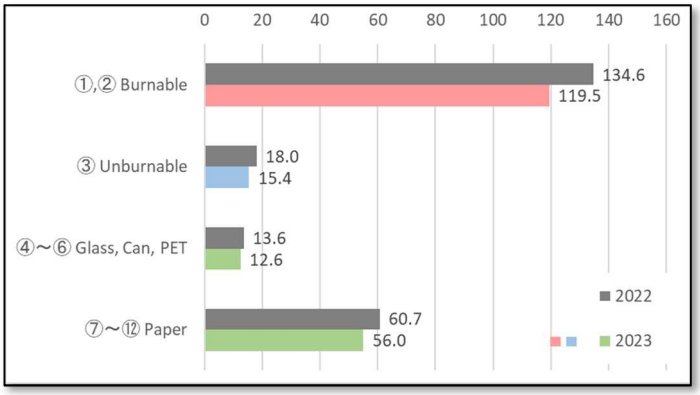
Notices at an Entrance

(10) Disposal

This university thoroughly enforces separate collection of waste in order to promote reduction and recycling of waste and makes students aware of this through the Campus Guide (student handbook). In addition, in accordance with the “Bunkyo-ku Waste Disposal and Reuse Ordinance”, the university has prepared a “Reuse Plan for Large-Scale Buildings for Business Use” and has set a target of 1% reduction in waste emissions compared to the previous fiscal year.

In FY2023, the total waste discharged at the Otsuka 1 complex decreased by approximately 3% from the previous fiscal year. Previously, iron pellets and electric wires removed during major renovation work (see photo to the right) were collected on the university campus as scrap metal and sold to recycling companies, producing income for the university. However, since FY2022, the scrap metal has been sold by the construction contractor to cover shortfalls in construction costs.

Waste Generation Comparison with Previous Year

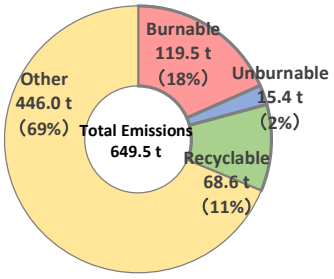


Recycling of Metals

Recycling of Electric Cables and Copper Wires

List of Amounts of Waste Generated in FY2023

No.	Type of waste	Subject	Type of Disposal	Amount of Emissions(t)
1	Compost Waste	Food waste, used tea leaves, etc.	Burnable	10.4
2	Paper	Fallen leaves, disposable chopsticks, etc.	Burnable	109.1
3	Plastic	Food packages, noodle cups, cling film, etc.	Unburnable	15.4
4	Glass	Glass drink bottles	Recyclable	2.3
5	Can	Drink cans (aluminum, steel), canning	Recyclable	4.0
6	PET	Plastic drink bottles	Recyclable	6.3
7	Used Paper (OA paper)	Copy paper, OA paper, etc.	Recyclable	1.6
8	Used Paper (confidential documents)	Confidential documents	Recyclable	9.2
9	Used Paper (magazines)	Magazines, pamphlets, colored paper	Recyclable	30.1
10	Used Paper (newspaper)	Newspapers, flyers	Recyclable	1.1
11	Used Paper (cardboard)	Cardboard	Recyclable	9.7
12	Used paper (mixed paper)	Shredder scrap	Recyclable	3.3
13	Electrical appliance	Recyclable electrical appliances	Recyclable	1.0
14	Scrap metal	Scrap metal, metal products	Other	79.1
15	Wood	Wood chips, wooden products	Other	0.1
16	Other mixed waste	Waste plastic, metal, etc.	Other	366.8



(11) Other

Environmentally Conscious Contract

Based on the "Law Concerning the Promotion of Procurement of Eco-Friendly Goods by Nations", every year our university formulates, announces, and promotes the Ochanomizu University "Policy for the Promotion of Procurement of Eco-Friendly Goods". The table below shows the status of specified procurement items for FY2023. The policy goals were achieved for all items.

Status of Specified Procurement Items for FY2023

Type	Item	Total Amount Procured	Amount Specified for Items	Rate of Procurement
Paper	Copy paper	17,785 kg	17,785 kg	100%
Stationery	Office supplies, OA supplies	59,689 items	59,689 items	100%
Office Furniture	Chairs, desks, fixtures	574 items	574 items	100%
Imaging Equipment	Copy machines, ink cartridges	988 items	988 items	100%
Computers	Computers	756 items	756 items	100%
Office Equipment	Shredders, cell batteries	7,885 items	7,885 items	100%
Mobile Phones	Mobile phones	4 items	4 items	100%
Electrical Appliances	Refrigerators, microwaves	21 items	21 items	100%
Air Conditioners	Air conditioners	3 items	3 items	100%
Lights	Fluorescent lights	129 items	129 items	100%
Interior and Bedding Equipment	Curtains, duvets	121 items	121 items	100%
Work Gloves	Work gloves	0 items	0 items	-
Other Textile Goods	Pipe tents, mops	118 items	118 items	100%
Systems	Online meeting systems	6 cases	6 cases	100%
Disaster Reserves	Drinking water for disaster reserves	7,152 items	7,152 items	100%
Procurement-Related Labor	Printing, cleaning, delivering	592 cases	592 cases	100%
Garbage Bags	Garbage bags	0 bags	0 bags	-

Tree Management

In order to prevent dead branches from falling and to keep the campus environment safe, trees on campus are pruned regularly. In particular, trees along the perimeter of the campus are scheduled for pruning in relatively short cycles as there is a possibility of causing problems for neighboring residents. In addition, after stormy weather such as typhoons and heavy rain, there is a high risk of fallen trees and broken branches. The campus is patrolled by staff who prune and remove such hazards as soon as possible.

7 Environmental Conservation Activities

(1) Campus Activities

Environment Beautification

Ochanomizu University has a nice green environment with gingko trees, cherry blossoms, hydrangeas, and azaleas, which remind us of the four seasons. When typhoons or natural disasters occur, many branches and leaves fall to the ground. Afterward, staff and contractors clean up our green spaces. Also, there are some harmful insects, so staff and contractors deal with them to keep the campus clean and safe.

Hydrangeas

Bicycle parking area

There are bicycle parking areas on campus. Only those who have a permit can park there. Staff check the parking area and if they find a bicycle without a permit, they inform the owner about the rule. If the owner ignores the caution, their bicycle is sold for reuse.

At the garbage station, garbage generated on campus is separated into cardboard, plastic, used paper, burnable trash, cans, PET bottles, batteries, and fluorescent lights and picked up by contractors. Large items that are no longer needed but can still be used, such as computers and other electronic equipment, are consolidated in one warehouse and picked up by a contractor to generate revenue for the university. Regardless of size or content, usable items are given to those who wish to use them through the university's "recycling bulletin board".

Garbage station

Industrial waste storage

We are running a project called the Ochanomizu secondhand book fund. Students, faculty, and staff can bring books, DVDs, and other items that they have finished with to the affiliated library. The library then sells them to a secondhand bookstore, and the full amount from the sale is donated to the Ochanomizu University Future Development Fund. This initiative helps enrich the students' book collections. In FY2023, 148 books were sold through this fund.

(2) Attached Schools

Affiliated Kindergarten: Activities to Protect the Environment

① We sometimes ask parents to clean around the school facilities and roofs as volunteer work. If the areas are clean, children can feel comfortable and be absorbed in play. We also hope that children will be inspired to care for the environment through the actions of people who are familiar to them.

② The playground and hill of the affiliated kindergarten are rich in nature, allowing the enjoyment of the changing seasons. However, this abundance of nature causes problems with mosquitos. Every morning, we hang mosquito coils in about 20 locations and ask parents to put insect repellent on their children before coming to school.

Just before the end of summer vacation, overgrown weeds are removed by a professional service as one means to address the mosquito problem. However, we request that the central part of the hill remain untouched as a "weed garden". This allows children to see the changes in nature and encounter small creatures.

Once the second term begins, interested children venture into the grassy areas and become absorbed in catching insects for long periods of time (some enjoy the sensation of walking through the tall weeds!). We would like to continue preserving this rich environment by considering the relationship between nature and children's daily lives.

③ Just before the start of the second term, with the cooperation of the kindergarten alumni association, “Chigusa-kai”, the wooden playground equipment on the hill, as well as the children's chairs and desks in the classrooms, are sanded down to remove the old varnish and coated with a varnish that is safe for both people and the environment. This activity is carried out with the hope that children can play safely and freely, and also to foster a sense of appreciation for taking care of their belongings.

Affiliated Elementary School: Project Initiative to Change the Farming Environment

At the affiliated elementary school, we have established a new domain called "Philosophical Creative Activities" and have been engaged in practical research. The goal is to foster civic-mindedness by encouraging students to think and act with others through students designing their own learning path and engaging in inquiry (curiosity) while interacting with diverse people, objects, and experiences.

The key feature of this initiative is that children, in small groups, determine the content of activities based on their own choices. Since diverse interests are explored simultaneously, new ways of learning emerge in spaces where these interests intersect.

The 6th-grade project, "Change the Farm Environment", involved digging a hole to create a pond in a field that had not been used for a while. As the digging progressed, the challenge arose: how could they retain water in the pond?

Together with the children, we compared three methods that we had researched on the internet and decided to use a pool sheet. However, the allocated budget was not sufficient to cover the cost. Therefore, we

submitted a project proposal and discussed it in our Japanese language class. During the discussion, we came up with the idea of collecting donations from everyone to cover the shortfall.

A pond was created in the field, and with the cooperation of the children who gathered there, the overgrown field regained its ability to support cultivation. The photo on the lower left shows the harvest of crops grown in the field as part of the plant-growing project. The children who gathered in the field began collecting scrap materials to create paving stones and benches, trying to turn the area into a place of relaxation. Thus, creating a comfortable environment became the next challenge: How about adding a roof for when it rains? Could we attach panels to create a small room on the pond since the temperature is dropping?

This practice demonstrates how engaging with people, objects, and experiences to change the environment also led to a shift in the children's awareness of the issues involved.

Field before cultivation

Using a pool sheet

Collaboration with the plant-growing project

Installation of benches and panels

(3) Students' Environmental Activities

School Festival

Every year, we hold a school festival in November called “Kiin-sai”. The Festival Executive Committee, which is mainly composed of university students, asks festival-goers to separate garbage thoroughly, to use "eco-friendly containers", and to use "disposable chopsticks made from thinned wood", in order to make the festival eco-friendly.

Separation of garbage

Renewable bento container

Student Projects

■Sign project

This project aims to promote correct separation of garbage. It is planned and put into action by volunteer students. They design new labels to prompt the correct separation of garbage and they introduce recycling boxes to encourage the reuse of used paper

.

Garbage sorting display

Paper collection box

■Taking part in the Bunkyo Eco Recycle Fair

The Environmental Science Club, a student club at the university, has participated in the Bunkyo Eco Recycle Fair since 2006. The Bunkyo Eco Recycle Fair is held by Bunkyo Ward, Tokyo. At this event, people introduce ideas for reducing waste at home, as well as environmental and 3R-related topics. The club introduces “science experiments which can be done with household materials” every year. In 2021, the club exhibited a "Molecular Model with Beads", a "Bean Pistol with Straw and Tissue", and "Paper Cups that Draw Near When You Blow on Them”.

■Reusing second-hand textbooks

STUDY FOR TWO (Ochanomizu University branch) started its activities in 2012. The group collects donations of textbooks and books no longer used after graduation and resells them for about half the normal price. Of the profits 80% are used for educational support for children in Laos and Bangladesh. Textbooks that are no longer needed are collected in 7 boxes on campus and a school dormitory, and sold in early April and October every year as second-hand textbooks.

Donation of unnecessary textbooks

Sale of used textbooks

8 Education for Environmental Conservation

(1) University Commission

Endowed courses by The Mitsubishi UFJ Environment Foundation

Endowed courses by The Mitsubishi UFJ Environment Foundation started in 1994. The aim of these courses is to cultivate a basic understanding of environmental issues for future generations, taking into consideration that environmental education and study in Japan is far behind that of western countries. These courses were held in many national, public, and private universities. In 2021, The Mitsubishi UFJ Environment Foundation started to provide environmental courses at Ochanomizu University, which were scheduled to be offered until 2023.

We have a special educational course called, “Liberal Arts of the 21st Century” for B1-2 students. It provides a cross-disciplinary perspective, teaching problem-solving skills and logical thinking. The course is affiliated with integrated themes from both the arts and sciences, consisting of a combination of subjects presented via lectures, discussions, presentations, experiments, and exercises.

One of these themes is “Life and the Environment”. Students living in the 21st century need to comprehend their relationship to nature and develop new lifestyle habits in order to coexist with nature. To use environmental education to empower students to achieve SDGs, The Mitsubishi UFJ Environment Foundation established a new course based on the theme: “The Environment from the Perspective of ‘*Seikatsu-Sha*’”.

These are the courses endowed by The Mitsubishi UFJ Environment Foundation in 2023:

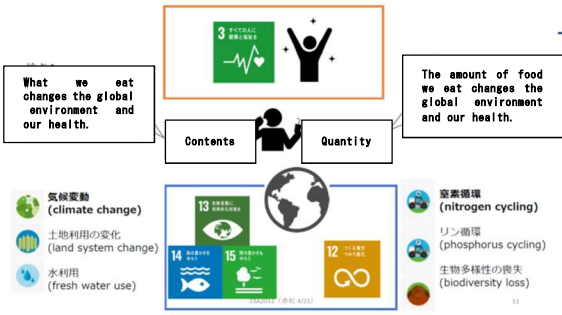
Liberal Arts Integration of Sciences and Humanities
Life and Environment 7 “Life and Environment”
Prof. Toshie Akamatsu (Department of Food and Nutrition, Faculty of Life Sciences)
Assoc. Prof. Toyohiko Nakakubo (Graduate School of Engineering, Osaka University; formerly of Ochanomizu University)

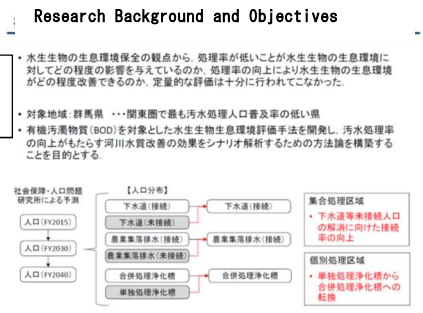
Environmental problems cannot be discussed as simple issues that can be solved solely through the development and implementation of innovative technologies. Solutions must be sought from various perspectives, including technology implementation, institutional frameworks, and the formation of systems comprising both technology and society. Therefore, addressing environmental issues requires both quantitative evaluation efforts that outline and assess scenarios for solutions and social implementation efforts that put these scenarios into practice in society. These two approaches must function as the two wheels of a vehicle.

The Fifth Basic Environment Plan of the Ministry of the Environment (April 2018 onwards) strongly advocates policy goals to realize and create regional circular and symbiotic spheres. The related lecture will address themes related to "food environment and organic material cycling" and "creation of sound water environments" aimed at establishing regional circular and ecological spheres. By studying both quantitative evaluations and social implementation efforts, the aim is to help students acquire the wisdom to think and act independently.

Additionally, since the Great East Japan Earthquake, creating resilient communities capable of responding to frequent natural disasters as well as to predicted large-scale natural disasters, such as the Tokyo Metropolitan Earthquake and Nankai Trough Earthquake, has been made a high priority in the field of living environmental studies.

This lecture will address themes related to "natural disasters and living environments", providing a forum to discuss and consider future approaches. In addition to acquiring knowledge that forms a foundation for problem-solving concepts, this lecture has been structured to include presentations from the local government (Kamaishi City), private enterprise (Seven & i Holdings), national research institutes (National Institute of Advanced Industrial Science and Technology, National Institute for Environmental Studies), and university research centers (SDGs Promotion Research Institute, Science and Technology Fusion AI/Data Science Center). Taking advantage of these opportunities, we will actively engage in discussions that address challenges arising in social implementation contexts.





Liberal Arts Life and the Environment 10 “Environmental Problems and Society”

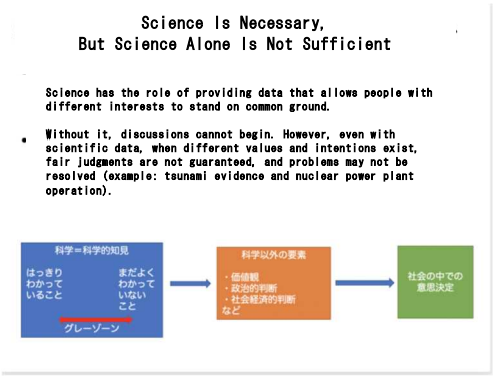
Prof. Naoko Hasegawa (Department of Letters and Education, Liberal Arts and Humanities, Geography)
Prof. Masao Kotani (Department of Human Life and Environmental Science, Human Life Studies, Human Life and Society)
Prof. Yoshihito Mori (Department of Science, Chemistry)

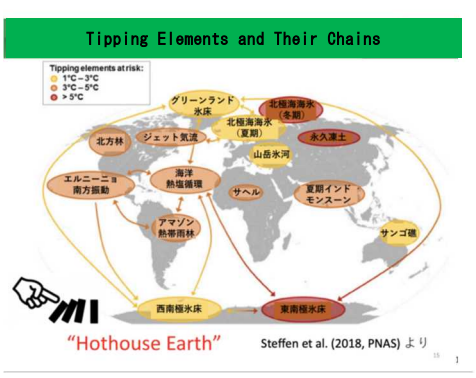
Our society relies on various areas of scientific knowledge. In other words, we live in a highly scientific society in which we benefit from scientific and technological achievements, making them, to a certain extent, common assets. Therefore, some science-related problems are not specific to experts, but are, in fact, relevant to every citizen. In particularly, the problem of our changing environment presents a great need for scientific knowledge. Nevertheless, we must organize ourselves as a society, despite our currently insufficient scientific knowledge, and direct our collective efforts towards the environment.

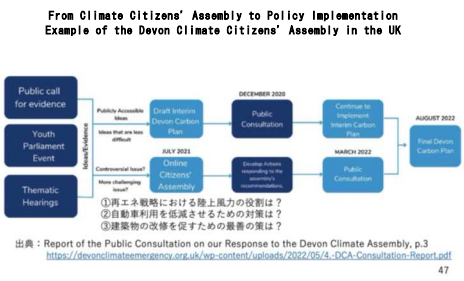
Thus, the aim of this course is not to learn about the fragmented knowledge of current environmental issues. Each problem is merely a single case out of many. The true aim is to provide students the opportunity to learn about the uncertainty of science with regard to environmental problems, relations between science and society, the structure of conflicts of interest that arise from environment-related issues, and social decision-making concerning science and technology. Learning from this perspective will help students to understand the social framework of environmental problems and will provide every student with the opportunity to consider how to create one voice for environmental issues, which are not yet scientifically understood.

This course has three parts: An overview of the discussion above (both at the beginning and end of the course), studying about global warming and climate change focusing on specific environmental problems, and learning about and practicing assembly, which is one way of discussing complex problems.

This course is a lecture format, but there will be time for students to develop their own ideas and discuss the course contents with each other, so that they can build a foundation upon which to think and act on their own when they enter society.





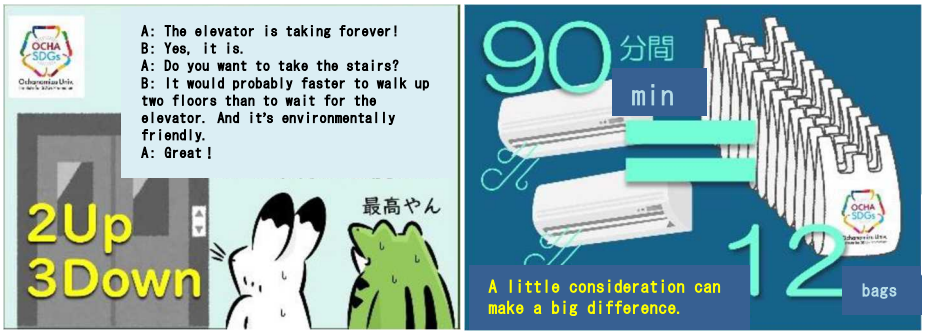


"Ochanomizu University Version of Climate Citizens' Assembly" (In-Class Version)

In February 2023, we conducted a one-day event which was Ochanomizu University's version of a citizens' assembly, structured somewhat independently from the regular course. Based on the proposal document from that time and records of subsequent discussions with the university, this year's students developed further recommendations as a continuation. The proposal document represents discussions from a student perspective on "How should we implement climate change countermeasures on the Ochanomizu University campus?" Students set themes according to their interests—such as electricity, food, water, and plants—and divided into groups for discussion.

Creation of Stickers
by OCHA-SDGs Student Committee and Ochanomizu University Climate Citizens' Assembly

The OCHA-SDGs Student Committee and the Ochanomizu University Climate Citizens' Assembly (held in FY2022) collaborated to create energy-saving stickers. After the final proposal, content developed during the course was reported to the university president and others during a student discussion meeting, one of the recommendations—energy-saving stickers—was approved for production and display throughout the campus.



Stickers created (2 types)

Liberal Arts Integration of Sciences and Humanities
Life and Environment 23 "Marine Environment and Biodiversity"
Professor Masato Kiyomoto (Department of Biology, Faculty of Science & Marine Biological Research and Education Center)
Professor Satoshi Shimada (Department of Biology, Faculty of Science)

Since ancient times, everything on land has flowed into and accumulated in the ocean through the great water cycle. The marine environment has been highly stable, and life, which originated within it, remains abundant with numerous species. However, this previously stable marine environment is now being significantly impacted by human activities.

In this practical training, students have the opportunity to experience the marine environment and interact with marine creatures through fieldwork on shores during low tide and aboard ships in offshore areas. They will come to understand the processes that maintain marine biology communities through their dynamic life histories that effectively utilize the marine environment. Additionally, by comparing marine organisms students will discover and explore their evolutionary lineages and contemplate the processes that have led to the current state of the oceans from the perspective of Earth's long history.

Furthermore, based on an experiential understanding of the marine environment, students will consider the impacts of human activities on the oceans. They will investigate the chemically stable characteristics of seawater and ocean acidification due to increased carbon dioxide, and examine the effects of marine pollution on organisms

using sea urchin embryos and larvae. The aim is to develop deeper and more accurate insights into environmental issues, taking into account biological aspects—including the dynamic processes that maintain current ecosystems and the historical processes that led to such processes.

Night Collection of Sea Fireflies

Observation of Sea Urchin Fertilization and Development

Experiment Using Sea Urchin Embryos

Collection and Observation Using Boats

Microplastic Survey on the Shoreline

Observation and Collection of Organisms at the Shoreline (Intertidal Zone) During Low Tide

SDGs Promotion Research Institute

This section introduces the environmental initiatives involving the OCHA-SDGs Student Committee, which was part of the implementation projects in the second year of the SDGs Promotion Research Institute established in April 2022. The OCHA-SDGs Student Committee is an organization in which students are active in various groups including the Education for Sustainable Development (ESD) team, Food team, Environment team, and Public Relations department, as well as the Taste Evaluation department and Inter-university collaboration team.

OCHA-SDGs Study Session "Where Does Our Waste Go? — Current Status of Cleaning and Recycling in Bunkyo Ward"

On July 13, 2023, the first OCHA-SDGs study session of the 2023 academic year, entitled, "Where Does Our Waste Go? — Current Status of Cleaning and Recycling in Bunkyo Ward", was held.

After hearing about the current state of cleaning and recycling in Bunkyo Ward from the lecturer from the Recycling Promotion Section of the Recycling and Cleaning Division, Resource Environment Department of Bunkyo Ward, participants considered how we should approach the waste we generate through group discussions.

Participation in Bunkyo City Cool Earth Fair

On Friday, August 4, 2023, the OCHA-SDGs Student Committee had an exhibit at the "Cool Earth Fair" held at Bunkyo City Hall.

The Cool Earth Fair is an annual event organized by Bunkyo City, focusing on global warming countermeasures. Each participating organization typically has an exhibition showcasing environmentally conscious business practices and awareness-raising displays for the general public. In 2023, in addition to 14 companies and organizations, four universities from the district (Ochanomizu University, The University of Tokyo, Toyo University, and Bunkyo Gakuin University) participated for the first time. From our university, the OCHA-SDGs Student Committee participated, collaborating with The University of Tokyo and Toyo University—our partners in student activities—to discuss exhibition content and themes while each university presented its own unique display. The OCHA-SDGs Student Committee compiled information on CO2 (greenhouse gas) emissions that can be reduced through everyday consumer awareness and presented this information on cards arranged on poster boards. Additionally, the committee displayed an interactive exhibit called "Cool Earth Clock," which invited visitors to contribute their own examples of environmentally friendly practices. This interactive display ultimately produced a posterboard full of notes contributed by visitors to the fair. The initiative, which encouraged energy-saving behaviors that could be incorporated into citizens' daily lives without judgment, demonstrated the student committee's commitment to pursuing environmental justice in unity with the local community.

Exhibits created by student committee members

Pamphlet on CO2 (greenhouse gas) reduction distributed at the event

Creation of Drinking Water Map

The OCHA-SDGs Student Committee and academic assistants from our research institute office have created a drinking water map showing the locations of safe drinking water facilities, which was published on the institute's website on August 29, 2023. After inspecting all water fountains on campus, we selected 29 indoor water supply locations with relatively good hygiene conditions. Among these, 10 locations offering comfortable environments were highlighted as recommended spots.

By promoting hydration through tap water, which is sourced from natural resources, we are encouraging the use of personal water bottles in place of relying on beverages in single-use plastic containers. Additionally, from the perspective of protecting overall health from intensifying heat waves caused by climate change, this initiative aims to raise awareness about frequent hydration to prevent heat stroke and dehydration.

This project was collaboratively planned by volunteer student committee members who wanted to secure hydration points—representing the voices of students physically burdened by carrying textbooks, laptops, and drinks in the extreme heat—together with the environmental team with whom the plastic reduction movement resonates.

Water supply map

Affiliated Kindergarten: Introduction of Environmental Experiences

Thinking about the Environment through Garden Harvests

In previous environmental reports, we introduced children's interactions with bamboo shoots, plum fruits, Castanopsis (shii) nuts, summer oranges, and loquats that grow naturally on the kindergarten grounds. Here, we would like to introduce their experiences with the flower beds located in the center of the garden.

1. Central Flower Bed on Kindergarten Grounds

Our kindergarten is blessed with a rich natural environment, featuring a "garden" that children can directly access from the school building and a "hill" situated on elevated ground. In this kindergarten playground with its varying elevations, children engage in diverse play activities daily. This introduction repeats the opening of the previous report's section on "the hill."

The garden includes cherry trees, plane trees, trees for climbing, wisteria trellises, jungle gyms, arched bridges, slides, an animal hutch (currently housing guinea pigs), a sandbox along the school building, and a flower bed in the center. This layout reflects the philosophy of Sozo Kurahashi, who was the kindergarten director when it was relocated from Ochanomizu to this location in 1933. His educational approach emphasized "allowing young children to have ample contact with nature" and "letting children fully experience and enjoy the four seasons" (from "Kindergarten Weeds" in The Complete Works of Sozo Kurahashi).

In early winter, the five-year-olds plant tulip bulbs that swell with buds in spring as they bid farewell to graduating students. Around enrollment time, these tulips bloom with lovely colors to welcome the new children. Having beautiful flowers in close proximity to children is very important, so we also plant seasonal flowers after the tulips finish blooming. The flower petals become decorations for sand cakes, colored water for play, or floating elements that provide a sense of coolness when placed in water. Children also experience the full cycle of nature by sowing morning glory and sunflower seeds, watching them sprout and grow, bloom, and then harvesting the seeds.

In 2008, we converted the central flower bed into a vegetable plot to allow children to engage more actively with the natural environment of the garden, with five-year-olds leading a series of related activities.

2. Enjoying the Harvest from the Garden

For over 15 years, the gardening activity described above has continued. Although five-year-olds are the main participants, the experiences of seeing and tasting that children have at ages three and four contribute to their activities as five-year-olds.

First, around the end of April, we dig out the tulip bulbs and mix in fertilizer. The cleared flower bed becomes very popular with children searching for larvae. In their quest to find them, they dig quite deeply. The fertilizer gets thoroughly mixed in, creating soft, fluffy soil—a process beneficial for both the children and the soil.

Together with the children, we consider what to plant, and this year we planted cucumber, eggplant, tomato, and green pepper seedlings. Every day, some children observe the growth progress and water the plants, while others simply watch.

It would be a problem if children from the younger groups touched newly formed fruits causing them to fall, or picked them while they are still small. In previous years, when this happened repeatedly, we created "scarecrows."

When the vegetables reach just the right size and ripeness, we harvest them and enjoy them pickled (in salt) or stir-fried. When only small quantities are available, we cut them into tiny pieces to share among everyone or supplement them with potatoes harvested from the university's suburban garden.

Vegetables grown in the garden at the center of the kindergarten garden seem to hold special status, and we receive various comments from parents: "My child said, 'The eggplant was delicious at kindergarten, so let's buy some on our way home,' but when I cooked it at home, they said 'It's different' and wouldn't eat it" or "My child told me 'I liked the green peppers at kindergarten, but the ones at home don't taste good.'" The summer vegetables serve as an important connection between home and kindergarten.

The practice of harvesting and eating from the garden leads to experiences where children use all five senses to feel how daily care contributes to growth and how plants undergo definite changes. Furthermore, eating is a way of incorporating something into oneself. We believe that accumulating experiences such as nurturing and eating helps cultivate not only the five senses but also various other sensibilities including seasonal awareness and practical life skills.

(2) Initiatives at Affiliated Schools

Affiliated Elementary School: Introduction of Environmental Experiences

Home economics classes in elementary school encourage students not only to reflect on their own home lives but also to consider the connections between their homes and the surrounding community and social environment. As members of society, students are encouraged to think about how they can live better lives. This section introduces initiatives that address local, societal, and global issues.

Fifth Grade - "Ocha Elementary ONG (Onigiri Action)"

In the fifth-grade home economics class, students learned about rice cooking and connected it to studying environmental issues, particularly those related to the SDGs. As part of their engagement with a sustainable society, they participated in the Onigiri Action campaign. Initially, they researched and learned about global issues related to the SDGs, fostering a sense of awareness that motivated them to join the campaign.

Under the theme 'Ocha Elementary ONG', we aimed to expand the initiative beyond the elementary school. Students invited the affiliated kindergarten, middle school, and high school to participate. They created posters, flyers, and explanatory videos to spread awareness, distributed materials to affiliated schools, and shared photos of their onigiri, fostering a sense of connection and expansion of the activity. Through the collective participation of all affiliated schools, the campaign grew into a large-scale initiative.

Interaction with Kindergarten Students

Fifth and Sixth Grade - "Food Drive Initiative"

Led primarily by sixth-grade students, the affiliated schools participated in the Food Drive initiative. Building on their experience from the previous year, sixth graders organized interactive lessons for first-year high school students, explaining the purpose of the food drive, the destination of collected food items, and the rules and considerations for donation.

As part of the project, interactions were facilitated with university students from the SDGs Promotion Research Institute. Fifth graders supported the initiative by contributing food items from their homes in response to the activities of the sixth-grade executive committee. The elementary school successfully collected eight boxes of food for donation.

Interactive Lesson with High School Students

Affiliated Junior High School: Introduction of Environmental Classes

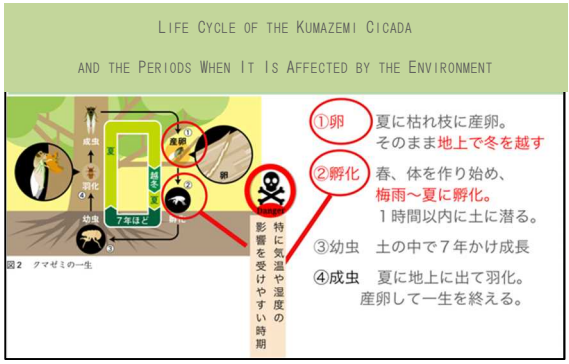
Second-Year Language Arts (May)
- Investigating the Causes of the Increase in Cicada Population

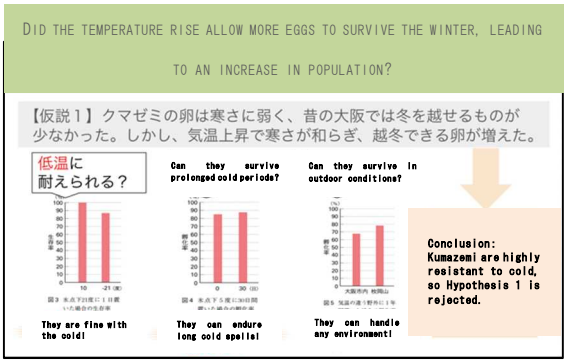
In the language arts curriculum, explanatory texts often address topics related to nature and environmental issues. The text "Investigating the Causes of the Increase in Cicada Population" is one such example. Entomologist and biologist Eiji Numata, a designated professor at the Kyoto University Academic Research and Development Center, has revealed that the increase in cicadas (Kumazemi) in major cities like Osaka is likely related to the heat island effect. However, he also points out that proving a causal relationship between environmental changes and shifts in species numbers and distribution is not easy, emphasizing the importance of accumulating scientific evidence.

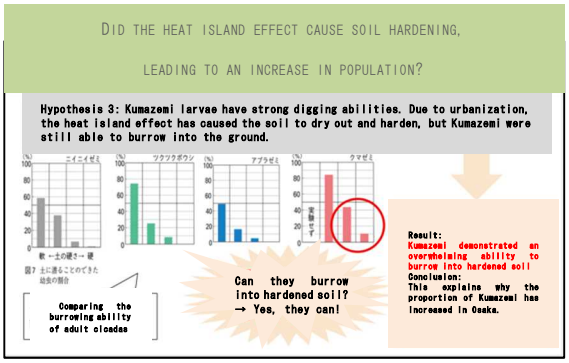
Reflecting this perspective, the text follows a scientific approach—observing the current situation, forming hypotheses, conducting investigations and experiments, analyzing data, and drawing conclusions. This makes it an excellent resource for helping students develop scientific thinking and reasoning skills.

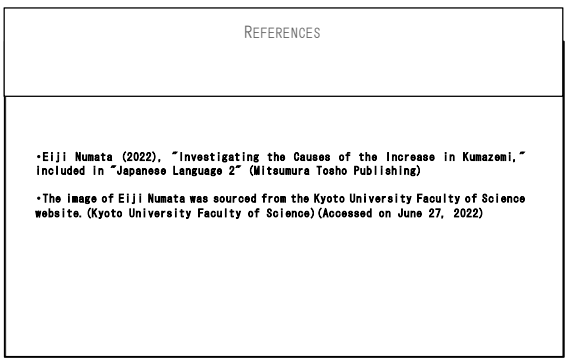
In this lesson, students leveraged these characteristics of the text by restructuring the logical arguments presented by the author into presentation slides, incorporating supporting data. Through this language activity, they experienced and learned scientific perspectives, reasoning methods, and logical argumentation.

Through this study, students recognized the connection between the urban increase in cicada populations and the environmental issue of the heat island effect. Although this text is designed for second-year middle school students, it coincides with the period when students participate in a field trip to a forest school, which enhances their awareness of environmental issues. This interconnection further deepened students' interest and engagement with environmental concerns.









Second-Year Integrated Curriculum (February – September)
Environmental Learning with a Trade-off Perspective Linked to a Residential Program

At our school, the second-year residential program is a forest school trip to Shiga Kogen, a designated UNESCO Eco Park. The grade-wide theme for second-years is "Connecting – Linking Oneself, Others, and Society to the Future". Through encountering various people and experiences, students expand their connections, deepen their interests, and ultimately cultivate the ability to create new relationships and perspectives on their own.

In the second year, a trade-off perspective (balancing conflicting factors) is used to examine the background and interconnectedness of various issues, explore possible solutions, and identify values that students personally consider important. The core initiative supporting this approach is "Environmental Learning with a Trade-off Perspective." Students begin their learning process by exploring the question, "What is essential for coexisting with nature?" They start by identifying their daily connections with nature and then categorize these relationships based on two perspectives:

1. Are humans and nature coexisting or not?
2. Is the relationship driven by humans or by nature?

By analyzing these factors, students develop an understanding of coexistence from their everyday interactions with nature. They then expand their learning by studying the natural environment of Shiga Kogen and conservation efforts at the UNESCO Eco Park. During the field trip, students engage with real-world nature, interact with guides, and participate in discussions to deepen their understanding. The main discussion theme is "Key Factors for Coexisting with Nature – Building a Better Relationship Between Humans and Nature." To explore this theme, students reflect on the following topics:

- Their impressions from experiencing Shiga Kogen's natural environment
- Differences between urban nature and Shiga Kogen's ecosystem
- Barriers to coexistence with nature
- Possible actions they can take

Through this process, students develop a deeper awareness of environmental issues and learn to critically examine the complex relationships between humans and nature.

Students listening to a local guide on a school trip to Shiga Kogen

Session	Date	Subject	Lesson Title
1	Feb 22 (Wed)	Moral Education	The Sadness of Being Abandoned
2	Mar 15 (Wed)	Moral Education	Considering Coexistence with Diverse Nature 1: The Tragic End of a Sausage
3	Apr 14 (Fri) – 5th Period	Integrated Curriculum	Forest School Orientation: About the UNESCO Eco Park
4	May 10 (Wed) – 6th Period	Integrated Curriculum	Forest School Comprehensive 1: Thinking About Connections with Nearby Nature – Coexistence with Diverse Nature
5	May 31 (Wed) – 5th Period	Moral Education	Considering Coexistence with Diverse Nature 2: Wildlife Control – The Photographer Loved by Monkeys
6	May 31 (Wed) – 6th Period	Integrated Curriculum	Forest School Comprehensive 2: Considering the Forms of Coexistence with Nature
7	Jun 14 (Wed)	Residential Program – Forest School	Shiga Kogen Forest School, UNESCO Eco Park Environmental Learning Lecture, Nature Exploration Trekking Course, Lecture by Mr. Mizutani from Shinshu University
8	Jun 15 (Thu)	Forest School	Shiga Mountain and Pond Tour Hike
9	Jun 16 (Fri)	Forest School	Environmental Learning Discussion
10	Jun 21 (Wed) – 6th Period	Integrated Curriculum	Post-Study 1: Sharing Learnings and Slide Creation
11	Jul 5 (Wed) – 5th Period	Integrated Curriculum	Post-Study 2: Sharing Learnings and Slide Creation
12	Jul 8 (Sat) – 1st & 2nd Periods	Integrated Curriculum	Post-Study 3: Slide Creation & Class Presentations
13	Jul 12 (Wed) – 5th Period	Integrated Curriculum	Post-Study 4: Grade-wide Presentation
14	Sep 21 (Fri) – 5th Period	Integrated Curriculum	Forest School Visual Report Viewing Session – Sharing and Evaluating Memories with Peers

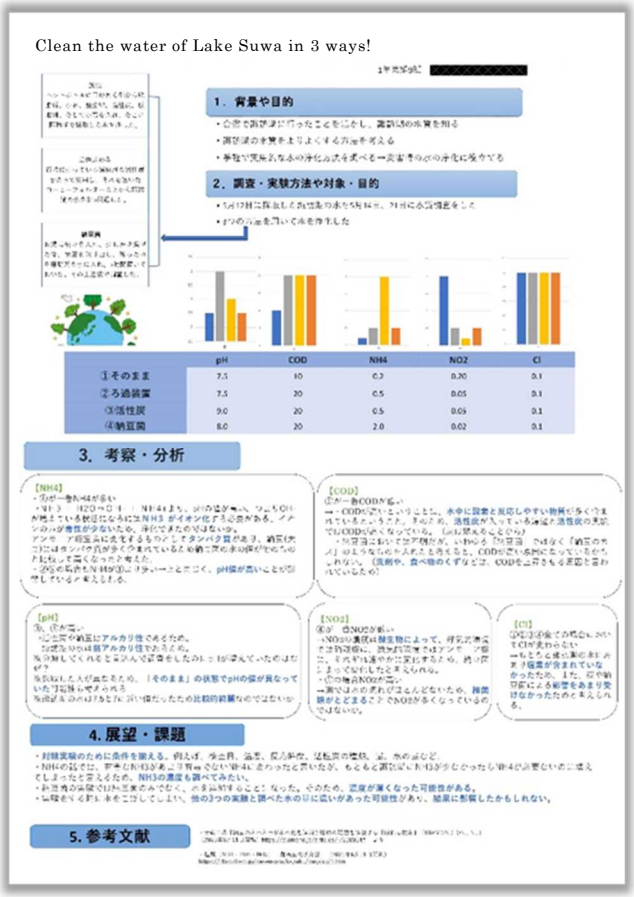
Affiliated High School: Introduction of Environmental Classes

First Year Mandatory Class: Basic Research Issues

Using the pack test provided by the Kyoritsu Science Research Center, each group of students researched the quality of water based on topics they had chosen and then made poster presentations. Students went to Suwa to pick up water samples and, through their investigations, they learned about how human and environmental factors, such as domestic wastewater and the geographical features of the surroundings, influence the quality of rivers and lakes.

Topic examples:

“Clean the water of Lake Suwa in 3 ways!



First Year Mandatory Class: Geography

Students learned about environmental issues as one part of global issues. They learned about air pollution, rain forest destruction, desertification, and global warming and thought about how to create a sustainable society. The course also covered population, food, habitat and urbanization, and resource and energy problems, and the students learned that these issues are intricately intertwined with environmental problems.

In the class, students used maps to think about solutions to pollution from an epidemiological perspective, for example using the *itai-itai* disease as a model. They also learned how maps and GISs (Geographic Information Systems) lead to solving social issues.

Students learned that climate change is caused by humans, for example, via the use of fossil fuels and deforestation, and thought about mitigation measures and adaptation strategies.

In the unit about daily life and culture in areas all over the world, as well as some issues in each area, students learned about air pollution in China, the destruction of rainforests in Southeast Asia and South America, and desertification in Africa and the Sahel.

Third Year Optional Class: Geography B

On a global level, students thought about environmental issues and the relationships among those issues with regard to natural resources and energy, population, and food.

Second Year Mandatory Class: Historical Research

When students studied the formation of the Japanese archipelago and the beginning of rice cultivation, they learned that changes in terrain and food resources due to climate change had a significant impact. They learned to think from the perspective of people’s lives in relation to the natural environment.

Students watched part of “*Isejingu Mori kara umareta inori*” (Kinokuniya Syoten), learned about the relationship between the cutting down of shrine forests and many floods in the early modern period, and considered the relationship between nature worship and religious norms and environmental conservation.

Third Year Optional Class: History B

Students learned about the Japanese assimilation policy for the Ainu people, and they considered what transformations of their own

lifestyles and culture influence the environment.

From the Ashio Copper Mine pollution incident, students learned what environmental issues occur during the process of modernization.

Students learned about four major lawsuits, which pertained to pollution-related diseases, that began during a period of great economic growth. They thought about why these lawsuits started at that time even though the illnesses all began at different times. Additionally, students thought about why it took so long for the Basic Act for the Environment to be enacted, learned about the history of development and the environment, and then considered how to address the issues that remain.

Students learned there were many famines due to damage from cold weather and extreme weather in the Middle Ages, a period known as the Little Ice Age, and they considered the effects that these had on society and political power.

Students learned that in the Edo era (the Middle Ages), city planning to reduce damage from large fires and lifestyles that reduce garbage were established by taking advantage of cities' relationships with nearby rural areas. The students considered the factors that support the establishment of sustainable lifestyles.

Second Year Required Subject: Research Ⅰ Global Environmental Science

With a global perspective, we conducted research on issues such as the impact of human activities on the environment.

First Year Mandatory Class: SSH School Subjects Science of Life

Students learned about science in the life around them based on sustainable and ethical considerations.

Students tie-dyed organic material bags using a new type of environmentally friendly natural dying process.

First Year Mandatory Class: Home Economics

In collaboration with an ethical brand, students took a product development class as part of a basic sewing class. The best pieces were mass-produced at a factory owned by an ethical brand in Ghana, Africa (employing poor women and disabled people) and sold in Tokyo. Each year, 10% of the proceeds are donated to support education in Africa. (For more information, see the "Ellipse" article in the school database.)

Students learned about and discussed various aspects of the environment such as circular economy, food loss, ocean plastics, and forest fires in the Amazon.

First-year students give a lecture about chocolate and child labor to the fifth-year students of Ochanomizu Elementary School every year.

Second Year Mandatory Class: Home Economics

Students learned, experienced, and shared about ethical consumption. Such class activities have been ongoing since 2011.

Second-year students visit the first-year students of Ochanomizu Junior High School and give a lecture on ethical consumption every year.

First to Third Year Mandatory Class: Home Economics

In cooking class, students used 100% biodegradable eco-friendly detergent, microplastic-free cellulose sponges, and composting for food waste disposal. They endeavored to use eco-friendly cooking methods that minimize wastewater contamination, minimize food loss as much as possible, and use energy-efficient cooking methods.

9 Other

(1) Compliance with Environmental Regulations

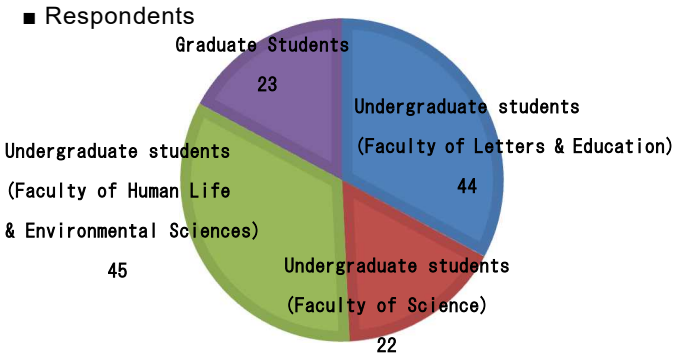
Laws and Regulations	Regulations of the University	University Division	Compliance with Laws, Regulations, etc.
[Environment] ■Basic Environmental Law ■Environmental Consideration Promotion Act ■Environmental Contract Act ■Green Purchasing Law ■Environmental Education Promotion Act		Finance Division Facilities Division	○
[Measures Against Global Warming and For Energy Saving] ■Law Concerning the Promotion of Measures to Cope with Global Warming ■Law Concerning the Rational Use of Energy ■Law Concerning the Control of Freon Emissions	Campus Master Plan Energy Management Standard	Energy Conservation Promotion System Facilities Division	○
[Water Quality and Soil] ■Water Pollution Control Law ■Sewerage Law ■Soil Contamination Countermeasures Law	Wastewater Management Regulations	Wastewater Management Committee Facilities Division	○
[Air] ■Air Pollution Control Law		Facilities Division	○
[Noise, Vibrations, and Offensive Odors] ■Noise Regulation Law ■Vibration Regulation Law ■Odor Control Law		Facilities Division	○
[Waste and Recycling] ■Waste Disposal and Public Cleansing Law ■PCB Special Measures Law ■Various recycling laws		Disaster Prevention and Security Management Finance Division Facilities Division	○
[Hazardous Materials and Chemical Substances] ■Fire Service Act ■Poisonous and Deleterious Substances Control Law ■Occupational Health and Safety Law ■PRTR Law	Poisonous and Deleterious Substances Control Regulations	Poisonous and Deleterious Substances Control Regulation Disaster Prevention and Security Management	○
[Radioactive Material] ■Law Concerning Prevention of Radiation Hazards Due to Radioactive Isotopes, etc.	Radiation Hazard Prevention Regulations Regulations on Measurement and Control of Nuclear Fuel Materials	Radiation Control Committee	○
[High Pressure Gas] ■High Pressure Gas Safety Law	High Pressure Gas Hazard Prevention Regulations	High Pressure Gas Hazard Prevention Committee Disaster Prevention and Security Management	○
[Safety and Health] ■Labor Standards Law ■Labor Safety and Health Law	Safety and Health Management Regulations Environmental Safety Management Regulations	Safety and Health Committee Environment Safety Management Committee Personnel and Labor Relations Division	○

(2) Status of Response to Stakeholders

Environmental Survey for Students

We conducted an environmental questionnaire survey of undergraduate and graduate students in FY2023.

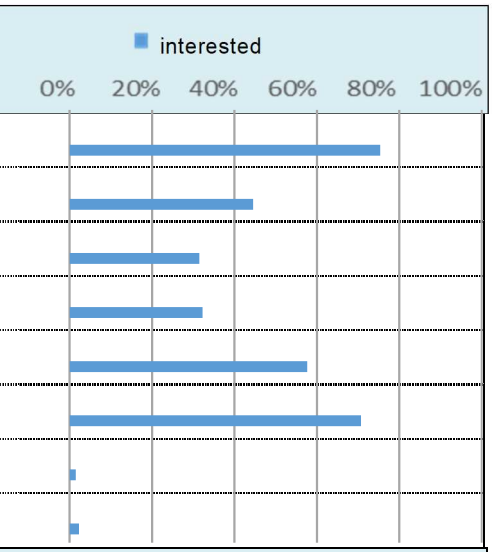
■ Respondents



■ Survey Results

Survey Questions	Response Rate ①②③④⑤⑥ 0% 20% 40% 60% 80% 100%
Do you think that environmental issues are urgent problems that we should tackle? 1. yes, very much 2. yes, a little 3. no, not really 4. no, not at all 5. don't know	
Do you think environmental problems can be improved through the awareness and actions of each and every one of us? 1. yes, very much 2. yes, a little 3. no, not really 4. no, not at all 5. don't know	
Do you think we should take environmentally friendly actions (energy saving, waste reduction, etc.) on a daily basis? 1. yes, very much 2. yes, a little 3. no, not really 4. no, not at all 5. don't know	
Are you concerned about environmental issues? 1. yes, very much 2. yes, a little 3. no, not very much 4. no, not at all 5. don't know	
Do you talk about environmental issues with your family and friends? 1. yes, often 2. yes, sometimes 3. no, not much 4. no, not at all	
Would you be interested in attending a lecture on environmental issues if it were offered? 1. yes, very much 2. yes, a little 3. no, not really 4. no, not at all 5. don't know	
Do you want to participate in environmental activities (volunteer work such as picking up trash, etc.) in the community or university where you have already taken a course on the environment? 1. yes very much 2. yes, a little 3. no, not really 4. no, not at all 5. don't know 6. I'm already involved in environmental activities or have been in the past	
Are you aware of the SDGs (Sustainable Development Goals) in which you are already or have been involved? 1. yes, very aware 2. yes, a little aware 3. no, not really aware 4. no, not at all aware 5. don't know 6. I'm already involved in SDG activities or have been in the past	
Do you think Ochanomizu University is making efforts to save energy? 1. yes, very much 2. yes, a little 3. no, not really 4. no, not at all 5. don't know	
Do you think Ochanomizu University is making efforts to save water? 1. yes, very much 2. yes, a little 3. no, not really 4. no, not at all 5. don't know	
Do you think Ochanomizu University is making efforts to reduce waste? 1. yes, very much 2. yes, a little 3. no, not really 4. no, not at all 5. don't know	
Do you think Ochanomizu University is lush and coexists with nature? 1. yes, very much 2. yes, a little 3. no, not really 4. no, not at all 5. don't know	
Do you think Ochanomizu University offers a good variety of lectures on the environment? 1. yes, very much 2. yes, a little 3. no, not really 4. no, not at all 5. don't know	

Do any of the following environmental issues interest you?
(Multiple answers allowed)



- Climate change / global warming
- Energy issues
- Water resources
- Forest conservation
- Garbage・Ocean plastic
- Food loss
- Other
- None in particular

Do you consider environmental issues on a daily basis and do you act on them?
Do you take any of the following environmental measures on campus?
(Multiple answers allowed)

- Turn off the lights when leaving a room for the last time
- Turn off the lights during lunch break
- Turn off the lights (on the window side) when daylight is sufficient
- Turn off the air conditioner when leaving the room for the last time
- Set the air conditioner to 28°C for cooling and 20°C for heating
- Refrain from using air conditioners during temperate times of the year (May, June, September, and October)
- Keep doors and windows closed while the air conditioner is in use (except for opening doors and windows for ventilation)
- Set rooms with total heat exchangers to the heat exchange setting when air conditioners are in use
- Use stairs instead of elevators when moving from one floor to another (1-3 stories)
- Take measures against the cold by covering your feet with a blanket, before using auxiliary heating equipment for the feet
- Unplug unused equipment from power outlets
- Refrain from using lecture rooms for self-study alone; use assigned study rooms instead
- Close the lid of the toilet seat (reducing power consumption by heated toilet seats)
- Set PCs to power-saving mode
- Turn off computer monitors when away from seats
- When using the toilet, use the digital audio privacy device
- When washing dishes, do not leave the water running
- Separate garbage properly
- Refuse plastic shopping bags when shopping at the Co-op

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