

TEEN Joint Project

Case Studies on Environmental Education in China, Japan and Korea
for Mutual Learning and Networking (2020-2024)

2022

**Comparative Research Report on
Nature-based Environmental Education Cases in
China, Japan, and Korea**



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Preface

The governmental cooperation among China, Japan and Korea on Environmental Education can date back to 2000, when Tripartite Environmental Education Network (TEEN) was proposed by ministers of the 3 countries at the ministerial-level meeting. Since then, with the support of Ministries of Environment and joint efforts of Focal Points of the 3 countries, TEEN has developed and become one of the priorities under the mechanism of TEMM.

At TEEN20 held in Hangzhou, China in 2019, the 3 focal point organizations of China, Japan and Korea agreed to start a new 5-year joint action plan named “Case studies on EE in China, Japan and Korea for mutual learning and networking”, specifying that the host country of TEEN meeting leads the joint project annually in rotation. Periodical progress has been made with “Environmental Education at the Local Level” initiated by Korea and “Comparative Research Report on Environmental Education and ESD Training for teachers in China, Japan, and Korea” initiated by Japan as main achievement.

This report is the outcome of 2022 TEEN Joint Project led by China. In the report we collected 5 typical cases of nature-based EE activities in each of China, Japan and Korea, which contains the activity introduction, goal, process, main features, etc., with which we expect environmental educators of China, Japan and Korea to focus on new methods and approaches related to nature-based EE against the backdrop of COVID-19, and then to discuss the feasibility of integrating topics such as biodiversity, climate change into nature-based EE, while sharing theme-related practices. We hope this initiative could inspire educators to have more innovative ideas on their EE practice, and help to form a new pattern of harmonious coexistence between man and nature.

At last, we would like to express our appreciations to the case providers who participated in the joint project, and to focal points of Japan and Korea as well as TEEN experts who provided us with valuable suggestions during the case collecting and exchanging. Our special thanks also goes to Shenzhen OCT Foundation for their support on our case translation works.

Center for Environmental Education and Communications (CEEC)
Of Ministry of Ecology and Environment (MEE) of China

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China Report 1

Schima Superba, the Guard on the Biological Fire Protection Forest Belt of the Dinghushan Biosphere Reserve

□ Abstract

In the 1970s, the concept of biological fire protection forest belt emerged. Scientists planted 66 kinds of plants in the nursery of Dinghushan Biosphere Reserve, which were used to screen the tree species suitable for the fire protection belt of Dinghushan. Finally, schima superba was selected for planting on the fire protection belt of Dinghushan. Schima superba is resistant to drought and barren, with dense canopy, thick leathery leaves, high water content (up to 42%), and tall and dense canopy, which can form a high firewall. Even if it is burned, it will come back to life the next year. Moreover, Schima superba is the dominant species in Dinghushan Biosphere Reserve, which has environmental conditions suitable for Schima superba's growth. Based on this, schima superba has become the dominant tree species in Dinghushan fire-proof isolation forest belt.

This training activity is to guide students to complete the creation of fire-proof plants. What kind of trees can grow to prevent fire? From the questioning orientation, students' innovative thinking, and abilities for teamwork, thinking, summary, and expression are stimulated, so that they are aware that human beings are members of the ecological circle, and they can solve environmental problems in a natural way instead of destroying the environment. It is the best case of harmonious coexistence between man and nature.

1. Time:

The activity can be carried out all year round, with a duration of 90 minutes.

2. Participants:

All students above grade one can participate the activity

□ Keywords

pyrophyte, schima superba, biological fire protection forest belt

□ Learning Goals

1. Learn and understand the basic structure of a tree, and think about the functions of trees;
2. Know the fire-proof function of schima superba, observe the appearance of schima

superba in the field, and learn to think about the scientific principle of schima superba's fire-proof ability;

3. Understand environmental problems and learn to solve them in a natural way.

□ **Activity Process**

1. Warm-up and group games ("Peach in Full Blossom" - when the instructor shouts out "Peach in Full Blossoms", students and parents will quickly gather together, and those who leave alone will be punished accordingly. Finally, they will be randomly grouped according to the group members)



2. Know the functions of trees: team competition, brainstorming (what functions do trees have? Each group will write all the functions of trees that they know within 2 minutes, and the team with the most correct answers will win. Then, the activity teacher puts forward the fire prevention function of trees.



3. Natural scenario: There are ways to fight forest fires. Dinghushan Mountain is threatened by forest fires. To protect the forest, the managers of the reserve are shaving the forest to form an isolation belt. Now the birds have no homes, the animals can't find food, and it also causes soil erosion of the forest. What should we do? Shall we think of a way for them? What can we do? Can we plant the fireproof plants mentioned earlier on this isolation belt? And if possible, what should this plant look like?



4. Draw pictures of plants that can be used in the forest to prevent fire, and share them in groups. What about the basic structure of trees? Roots, trunks, branches, crowns,

leaves, flowers and fruits.





5. Observe the wild schima superba and compare which part of the painting matches the real schima superba;
6. Summarize and solve environmental problems in a natural way, instead of blind destruction.

□ **Main Characteristics**

1. Content: Scientists in Dinghushan Biosphere Reserve use the concept of plant fire prevention to solve the problem of forest fire escape and solve environmental problems in a natural way. The content is novel. This activity can highlight the local characteristics of Dinghushan Biosphere Reserve. It is also the best model of harmonious coexistence between man and nature.
2. Link: The plants have the function of fire prevention is introduced by brainstorming, which could attract students' interest and stimulate their spirit of exploration. Inquiry learning is advocated in every link.
3. Thinking: Students will be guided to fully understand the basic structure of a tree by the way of reverse thinking, so that they can design their own fire-proof plants, which can stimulate their innovative thinking, creativity, imagination, teamwork spirit and expression ability.
4. The whole activity develops students' core literacy from the aspects of life concepts, scientific thinking, scientific inquiry and social responsibility.

□ **References**

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Guangdong Science and Technology Press, 2019;

2. Ye Wanhui. The Golden Melody Created by Working Unceasingly Regardless of the Weather-Collection of Commemorative Works of the 55th Anniversary of Dinghushan Biosphere Reserve [M]. Guangdong: Guangdong Science and Technology Press, 2012;

3. Huang Zhongliang. Comprehensive Scientific Investigation Report of Dinghushan Biosphere Reserve in Guangdong [M]. Guangdong: Guangdong Science and Technology Press, 2015;

□ **Institution Introduction**

Dinghushan Biosphere Reserve, founded in 1956 by the famous botanist and academician Chen Huanyong, is the first nature reserve in China; In 1979, it became the first international biosphere reserve to join UNESCO's Man and the Biosphere Programme, located in Zhaoqing City, Guangdong Province.

At the beginning of the construction of the Dinghushan Biosphere Reserve, nature education was planned as one of the four functions of the development and construction of the reserve. Over the past 64 years, Dinghushan Biosphere Reserve has given full play to the function of nature education in development planning, platform construction, staffing, standardized management and resource utilization. At the beginning of its establishment, popular science activities were carried out through visits to spread the significance of building nature reserves. In the 1980s, by actively cooperating with other institutions, the Reserve attracted thousands of primary and secondary school students came to carry out nature education activities. In the 21st century, Dinghushan Biosphere Reserve has set up a special public education department to recruit and train specialists and lecturers, and train doctoral students who are engaged in scientific research in Dinghushan. It combines popular science with eco-tourism, and has an average of 1.1 million tourists a year as the audience, so that they can naturally acquire knowledge, enrich their tourism and enjoy relaxation in body and mind during their visit.

At present, nature education in Dinghushan Biosphere Reserve is carried out and managed by the Science and Education Section, which consists of 4 full-time staff, 18 part-time doctors and 90 volunteer teams. From young children to adults, the audience of nature education should adopt the method of “bringing in, going out, and surfing online”, allowing them to discover and enjoy the beauty of nature, observe natural phenomena, explore natural laws, and protect the natural environment. Besides,

educators should introduce to the public the global significance and connotation of Dinghushan Mountain, and the science and humanities associated with it and explore a new model of natural education in the new era.



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China Report 2

Bird Classroom at the OCT Wetland

□ Abstract

To provide visitors with zero-distance contact with nature and inspire their love for nature, the Bird Classroom officially opened to the public in September 2014, where the lecturer led the public to experience the wonderful bird-watching tour.

Participants of the activities are family teams over eight years old. The activities include the science popularization of bird-watching, how to use telescopes, and the science popularization of birds. The activity should take place in the OCT Wetland Teaching Area. The activity, lasting 120 minutes, should be appropriately carried out in the bird migrating season, from October to March of the following year.

Since its launch, the activity has won a good reputation and gradually became a regular popular activity of the OCT Wetland Nature School. The Little Bird Classroom is characterized by “small class teaching, in-depth experience” and introduces the world of birds to the public.

□ Keywords

Outdoor bird-watching, bird knowledge, and bird-watching skills

□ Learning Goals

1. Understand bird-watching, common bird species in wetlands, bird migration, etc.
2. Understand the relationship between birds and wetlands through bird-watching, the hardships for birds to migrate, and the importance of wetland conservation for birds
3. Learn to use a telescope and identify 4 to 6 common wetland bird species

□ Activity Process

I. Activity Introduction

Activity 1: Assembly / Check-in

[Purpose] Assemble at the beginning of the activity, get to know the activity instructor and learn about precautions.

[Duration] 10 minutes

[Materials]

Sign-in form and pen, 1 mosquito repellent, 1 Little Bee loudspeaker (please charge it in advance), 1 camera (please charge it in advance), 1 green vest, and 1 hat

[Process]

Assembly at the west gate to check in;

The lecturer and teaching assistant should start with opening remarks, introducing themselves and the activity process and time.

Introduce the precautions for visiting the wetland

- A. Please wear long-sleeved clothing that matches the hue of the surrounding wetland
- B. Please make anti-mosquito preparations
- C. Please speak softly
- D. Please avoid littering in the wetland park



Activity 2: Games about bird-watching rules

[Purpose] Introduce precautions and friendly manners for bird-watching activities to students via games about bird-watching rules.

[Duration] 10 minutes

[Materials] A slip of paper with rules on it

[Process]

1. Each group of families draws a slip of paper with rules on it;
2. Each family takes turns miming the selected bird-watching scene as if in a sitcom. Other family members judge whether this is the right way to do it and make “V” and “X” gestures to show their approval and disapproval, respectively.

A slip of paper:

Walking slowly in the woods. (approval)

Express your excitement to see the birds by shouting to your companions, “Come and see, there are birds here!” (disapproval).

Watch birds through binoculars (approval)

Catch birds and dig birds' nests (disapproval)

Feed wild birds with your bread. (disapproval)



II. Bird-watching Activities

Activity 3: Distribute binoculars and bird folds and teach how to use them

[Duration] 20 minutes

[Materials] Binoculars, bird folds, pen, and paper

[Process]

Distribute binoculars and teach how to use them and use precautions;

Distribute the bird folds of Wetland Birds, remind everyone to fill in the bird-watching records in the booklet, and hand out a blank sheet of paper to each person to encourage everyone to share their bird-watching-themed creations with words, pictures, or natural notes.



Activity 4: Bird-watching in the field

[Duration] 50-60 minutes

[Materials] Number plates and regular bird atlas;

[Process]

1. Give each kid a card with a number beginning with 1.
2. According to the child's serial number, let them observe the birds and make a simple record in turn.
3. During the bird-watching process, the teacher should provide a brief explanation, focusing on guiding the children to observe the characteristics and behaviors of birds to prioritize piquing their interests in birds over bird identification.
4. If there is a special situation where the bird-watching condition is undesirable, use the regular bird atlas to explain the birds' common roosting spots to the children and



provoke their thoughts about where they can easily see birds in their daily life.

□ Main Characteristics

1. Pilot demonstration: In 2015, while the general public was still unfamiliar with bird-watching activities, a curriculum R&D team was formed using a study of wetlands as a foundation to create the first Bird Class.
2. The cultivation method of a virtuous circle: The team of tutors of the course is attracting more volunteer teachers of environmental protection via training every year.
3. Public welfare: Although most bird-watching courses are fee-paying, the wetlands are freely accessible to the public, making bird-watching, formerly a niche activity, increasingly mainstream and introducing it to more parent-child families.

□ References

[1] Yin Lian, Fei Jialun, Lin Chaoying. Birds of Hong Kong and South China [M]. Changsha: Hunan Education Press, 2017.

[2] John MacKinnon, Karen Phillipps. A Field Guide to the Birds of China [M]. Changsha: Hunan Education Press, 2000.



[3] Liu Yang, Chen Shuihua. The CNG Field Guide to the Birds of China [M]. Changsha: Hunan Science & Technology Press, 2021.

□ **Institution Introduction**

The OCT Wetland, located in the central area of Shenzhen, is a crucial stopover for migrating birds and one of the original coastlines of Shenzhen Bay. It is home to native mangrove flora and a wide variety of animals and plants. As the only coastal mangrove wetland in China's hinterland of a modern metropolis, it provides visitors with a wetland experience, ecological conservation, and popular science education.



On January 12, 2014, China's first nature school was established in the OCT Wetland, adhering to the operation model of "one classroom, one team of environmental protection volunteer teachers, and one set of teaching materials". The OCT Wetland is managed daily by the Wetland Management Department of OCT Urban Entertainment Investment Company of Shenzhen, which consists of a management team of 15 persons, including the Habitat Maintenance and Operation Office, the Ecological Education Office, and the General Affairs Office. Nearly 600 people have been recruited as volunteers, and 162 learning programs have been created with their help thus far. Primarily aimed at families in Shenzhen, it has carried out nearly 6,000 educational activities, directly drawing in over 100,000 participants and affecting over 10 million audiences. Based on ecological protection and focusing on natural education, OCT Wetland is home to native mangrove flora and various animals and plants. As the first national wetland park in Shenzhen, it provides visitors with a wetland experience, ecological conservation, and popular science education. And by the end of 2021, it had become the first provincial wetland in Shenzhen.

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China Report 3

Looking for the Home of the Jiangxi Giant Salamander

□ Abstract

The Chinese giant salamander is the largest extant amphibian species in the world. Wild giant salamanders are very rare in China and are endangered. It is a rare species known as “underwater giant pandas”. In May 2022, a new giant salamander species was discovered in Jiangxi Jiulingshan National Nature Reserve and officially named “Jiangxi giant salamander”. We plan to organize and carry out the first stage of “Looking for the Home of Jiangxi Giant Salamander” to learn more about this salamander and to encourage people’s awareness to biodiversity conservation.

This activity takes the Jiangxi giant salamander, a new species, as the object, adopts the project-based learning method, and displays its characteristics, habits, and habitats, allowing the audience to find a suitable living place for it on the map by querying information. Then, we will organize an on-the-spot inspection to verify whether the selected site is ideal for it. In the process, we will reap the benefits and achievements of the activity by teaching people how to use scientific research methods to monitor the Jiangxi giant salamander.

The daylong activity is best experienced from May to October. Its ideal audiences are families and junior high school students of both genders. The limit number of participants is about 25 per time.

□ Keywords

Jiangxi giant salamander, autonomy, field verification, and participation in conservation actions

□ Learning Goals

1. Understand the main morphological characteristics and living habits of the Jiangxi giant salamander, and be able to analyze the water environment conditions suitable for its survival based on its biological information, and find the most suitable habitat for the giant salamander.
2. Explore and investigate the living conditions of the Jiangxi giant salamander in the field, and learn how to use scientific research methods to monitor it.
3. Lead by example and influence relatives and friends to join efforts to protect the Jiangxi giant salamander.

□Activity Process

I. Motivate Students

- (1) The teacher should start with an opening introduction, explaining the precautions, introducing the Jiangxi giant salamander, and displaying its pictures or specimens.
- (2) Teachers should divide the students into groups to observe pictures or specimens of Jiangxi giant salamanders. Each group should send a representative to share the findings of their observation.
- (3) Summarize the sharing and the morphological characteristics of the Jiangxi giant salamander.



Observing Jiangxi Giant Salamander Specimens

II. Draw Attention

- (1) The teacher should further introduce the characteristics, habits, diet, and other knowledge of Jiangxi giant salamander. The teacher should introduce the relationship between the Jiangxi giant salamander and Jing'an.
- (2) Teachers should show the Jiangxi giant salamander's habitat map and discuss the characteristics of its suitable habitat.

III. Direct Experience

- (1) Students should practice "Looking for the Home of the Jiangxi Giant Salamander" in groups. Each group should be given material packages to choose a suitable habitat for the Jiangxi Giant Salamander on the map of Jing'an County. They should consider the living conditions ideal for the Jiangxi giant salamander, such as altitude, water quality and food.



Looking for a suitable living environment for the Jiangxi giant salamander

(2) After completing Looking for the Home of the Jiangxi Giant Salamander, the groups should sort out and discuss the results for the discussion premises.

(3) Students should enter the experimental area of Jiangxi Jiulingshan National Nature Reserve in the field, observe the living conditions of the Jiangxi giant salamander, and explore suitable habitats for Jiangxi giant salamander.



The wild Jiangxi giant salamander in Jiulingshan National Nature Reserve, Jiangxi

(4) Each group is provided with a Jiangxi giant salamander monitoring instrument. Teachers introduce this instrument and explain how to use it to monitor and investigate the Jiangxi giant salamanders.



Monitoring the Jiangxi giant salamanders

IV. Share and Inspiration

(1) Divide students into small groups to report their assumptions before and after entering the nature reserve, practice results and basis, compare them and provide their group conclusions. Other groups ask questions about the practice results and basis of one group, while teachers are responsible for summary and comment.



A group representative was sharing his group's results and conclusions

(2) Compare the practice results of various groups and guide students to think deeply about how to protect the Jiangxi giant salamander.

(3) Share the influences of our daily life on the Jiangxi giant salamander.

V. Appraisal

(1) In-class appraisal: Ask students questions to see if students master the knowledge of this activity. If not, review the knowledge briefly.

(2) In-class appraisal: See if students are able to correctly find homes for Jiangxi giant salamanders. If there is any error, correct it in time. After completing the field trip, see if students are able to gain a clearer understanding of the necessary habitat for Jiangxi giant salamanders.

(3) After-class appraisal: Ask parents or issue electronic questionnaires to see if this study achieves the study objectives and if students have changed their behaviors to protect the natural environment around them after this activity.

□ **Main Characteristics**

1. This activity is composed of two parts: indoor activity and outdoor activity. Students learn the basic knowledge in the classroom and do practice outside the classroom to verify their assumptions.

2. This activity is conducted in the experimental zone of the nature reserve, allowing students to observe the habitat of Jiangxi giant salamanders in the field and easily get first-hand experience and attracting more attention from the public.

3. The course design is truly indigenous. At present, this new species, Jiangxi giant salamander, is only discovered in Jiangxi, representing the local characteristics of ecology.

4. The knowledge acquired is applied to actions, so that students can know about Jiangxi giant salamanders and participate in the protection of this new species.

□ **References**

The King of Amphibian - Chinese Giant Salamander. Authors: Zhou Li and Ye Xiaoqing

My Wildlife Friends. Editor-in-chief: Yong Yi

□ **Institution Introduction**

Jiangxi Jiulingshan National Nature Reserve is located south of the middle and lower reaches of the Yangtze River, which is situated in Jing'an County, Yichun City, Jiangxi Province. Jiulingshan National Nature Reserve is a forest ecosystem nature reserve, covering a total area of 11,541 hectares, with the forest coverage of up to 97.8%. The main objects of protection include typical native evergreen broadleaf forests in the low-elevation area of the mid-subtropical zone, wetland ecosystems in hills and rivers and rare wild animals and plants.

Since 2017, Jiulingshan National Nature Reserve has adopted “Enjoy Your Time in Jiuling” as the science popularization and education brand, and there have been 12 employees engaged in science popularization and education. For “Enjoy Your Time in

Jiuling”, 4 categories of activities have been carried out, i.e. Nature-Themed Classroom, Exploring the Nature, Nature Crafts, and A Tour to the Nature. “Enjoy Your Time in Jiuling” - The Nature-Themed Classroom is characterized by localism, public welfare and tendency. The nature education activities have been carried out in primary schools at the township and village level; besides, left-behind children and children in mountainous areas have also been organized to participate in such education activities during festivals and holidays, including summer vacation, winter vacation, etc.



Nature Education Logo of “Enjoy Your Time in Jiuling”



Ecological Specimen Hall of Jiulingshan National Nature Reserve



Photo of “Enjoy Your Time in Jiuling” - The Nature-Themed Classroom

□ **Case Providers and Contacts**

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China Report 4

Touch and Enjoy the Nature - The parent-child activity “follow the 24 solar terms to learn about the nature”

□Abstract

This activity takes the 24 solar terms of a year as the timeline and targets at families with children aged 5 to 12 years. It focuses on research-based learning integrating nature-based education, biodiversity, protection of ecological environment, and traditional culture. This activity follows the law of children’s development and is led by teachers, and is designed for children and families. Adopt the forms, such as nature observation, nature records and nature games, and try to take 90 minutes to interpret solar terms and nature every time. Through this activity, participants will learn about biodiversity, understand the fields of climate, phenology, farming and folklore, learn the knowledge of natural science, ecology, humanity history, and artistic aesthetics, promote the physical and psychological health and aesthetic development of children, improve the environmental literacy, and re-establish the connection with nature.

□Keywords

24 solar terms, nature-based education, parent-child activity

□Learning Goals

1. Knowledge goals: Study the knowledge of the 24 solar terms, understand the phenology of the 24 solar terms and the diversified ecological resources of Qingdao, and expand the knowledge of the fields such as farming, folklore and humanity history.
2. Ability goals: Increase an interest in learning natural science, stimulate the spirit of exploration and team spirit, enrich the experience in natural environment, and improve harmony with nature and the ability to analyze and solve ecological problems.
3. Attitude and value goals: Driven by immersive tasks, deepen the understanding of traditional Chinese culture, enhance the national confidence and sense of pride, stimulate the love of clear waters and green mountains and the sense of responsibility, and establish the belief in the joint protection of nature.

□Activity Process

Take “Grain in Ear” - The parent-child activity “follow the 24 solar terms to learn

about the nature” as an example:

Time: the afternoon of June 5, 2021 (90 minutes)

Place: Qingdao Zhongshan Park

I. Preparation

1. Teacher: Design courses and safety plans, determine the time, place and route, recruit personnel, prepare loudspeakers, etc.
2. Family: Understand the information about “Grain in Ear” and prepare notebooks, pens, specimen collection bags, and clothes, shoes and socks suitable for outdoor activities.

II. Introduction (10 minutes)

1. Assembly and check-in
2. Opening

Introduce the general information about this activity and the purpose, significance and



precautions of this activity.

3. Introduce the solar term - “Grain in Ear”

Students were studying the knowledge of Grain in Ear.

Teachers introduce the origin, traditional customs, climatic features and phenological features of Grain in Ear, the definition of “Grain in Ear” (which means the grains are mature) and the significance of “Grain in Ear” to farming.

II. Implementation (80 minutes)

[Activity 1] Experience



Students were touching awns of wheat and observing wheat.

1. Guide the children to touch awns of wheat and feel and experience the meaning of “awn” in “Grain in Ear”.
2. Observe the traits of wheat and understand the farming sequence contained in “Grain in Ear”, i.e. “awned wheat should be harvested quickly, and awned rice can be planted”.

[Activity 2] Observation

1. Teachers lead participants to know about the local plant species in Qingdao: Cedar (city tree of Qingdao), camellia and Chinese rose (city flowers of Qingdao), cherry blossom tree, persimmon tree, Zelkova serrata, bay laurel, Chinese wingnut, Japanese maple, Chinese mahogany, knotweed, etc., and introduce related popular science and the knowledge of humanity history.



Students were observing catalpa bungei leaves and a teacher was explaining the law of distribution of prickly castor oil tree leaves and the reason for their irregular size.

2. Guide students to observe the phenological manifestations of various plants during “Grain in Ear”, such as trunk, leaf, flower and fruit and deepen their understanding of the solar term - “Grain in Ear”.

[Activity 3] Game

1. 1. Soft and elastic barks. Guide children to press the bark of cork oak, feel the

elasticity, observe its characteristics. Then the teacher reveals the secret of its use for making wine corks.



Press and feel the elasticity of bark of cork oak

2. Sound of nature. Guide children to listen to the sound of water in the metasequoia tree trunk and feel the vitality of nature.



Listen to the mysterious sound in the metasequoia tree trunk

[Activity 4] Storytelling

1. Observe the fruit of prune trees - plum. The teacher explains characteristics of plums and the conventions of “boiling plums” during Grain in Ear.
2. The teacher narrates literary quotations of idioms “feeding on fancies” and “defining a hero while warming the wine”.

[Activity 5] Reading poems

The teacher guides children to know *Hemerocallis fulva*, and introduces the verses of Meng Jiao - a poet in Tang Dynasty “The son went out and the mother leans on the door to wait for her son” to help children know the reason why *Hemerocallis fulva* is called the Chinese mother flower.

III. Summary

Share harvests and feelings. The teacher gives an evaluative summary, motivates children to feel the ancient wisdom of Chinese nation, pay attention to nature around

them, feel in experience and improve in practice.

IV. Extension

Guide participants to continuously take nature notes and do handwork after the activity.

V. Appraisal

The activity feedback is collected with electronic forms for effect evaluation.

☐Main Characteristics

1. The activity is dominated by the teacher, in which children participate and parents accompany them. It aims to build a platform of nature-based education activities for children and families.
2. The activity is developed based on nature, in which the 24 solar terms of Chinese traditional culture are integrated to achieve the integration of multiple elements including scientific knowledge popularization, natural practice experience and traditional Chinese culture communication.
3. The activity design effectively utilizes diverse biological resources in Qingdao and drives extensive families to get close to nature, recognize nature, pay attention to nature and protect nature.
4. The rich activity connotations and the free activity form for public welfare are quite attractive for families and make the activity attract more families and schools.

☐References

None

☐Institution Introduction



Qingdao Activity Center for Women and Children is a public institution affiliated to Qingdao Women's Federation and was completed and opened on June 1, 1997. Located at the coast of the Yellow Sea and the shore of Fushan Bay, it covers an area of 30 mu, and is an activity place for women and children integrating humanities, art,

popular science, safety education and family education.



As a model organization for ecological civilization education of “environmentally friendly and children friendly”, the Center, based on the local natural resource advantage, has united social and professional forces to create a “double good” nature education practice base in Qingdao. Besides, the Center has built expert teams, set up child and parent volunteer service associations, developed nature education courses, carried out nature experience activities, set up nature practice platforms, creating a space friendly to nature and exploration, and promoting ecological civilization construction. There are 5 nature-based education teachers. Since 2021, over 200 activities have been implemented, and nearly 10,000 persons have participated in activities. The Center has achieved the full coverage of families, schools and communities. In 2021, the Center was rated as “a pilot organization in the sixth batch of “National Nature School Capacity Building Project”.

□ Case Providers and Contacts

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China Report 5

The Great Underground Workers - Earthworms

□Abstract

The earthworm, as a consumer, decomposer and regulator in the ecosystem, plays an important role in the changes of soil fertility and soil texture. Leading the public to observe such unimpressive creatures in a close range can help them establish a concrete cognition of material circulation and energy flow and provide a feasible green lifestyle: recycling of kitchen waste compost.

In the warm South China, this course is available in the four seasons. During the 3-hour class, the course difficulty may be adjusted according to children's age. Lead children to work with earthworms and we will find the great energy in the little body.

□Keywords

Soil vitality, experiential learning, farming activity, kitchen waste compost, drama application

□Learning Goals

- Knowledge goals

To know the body structure, feeding habits and living environment of earthworms

- Ability goals

To master the methods for kitchen waste composting and kitchen waste treatment

- Emotional and value goals

To realize that no matter how small a creature is, it has an ecological value

□Activity Process

Activity 1: Picture book reading Diary of a Worm

Goals: Warm up, motivate the enthusiasm, liven up the atmosphere and introduce the theme

Recommended duration: 15-20min

Location: A flat place

Number of participants: Less than 30

Activity process:

This is a picture book very suitable for adding body rhythm and knowledge explanation. Besides, it is humorous and is a very excellent nature picture book. You may interact with you child when reading. For example, when reading the father

earthworm likes to eat newspaper, you may ask your child about what earthworms like to eat.

In picture book reading, export 3 questions for subsequent field observation: What does an earthworm have (what doesn't an earthworm have)? What do earthworms like (dislike)? What kind of environment do earthworms like?

Activity 2: Earthworms, let's work together

Goals: Direct experience, first-hand observation

Recommended duration: 40-60min

Preparation before class: Ask all children to take food that they think earthworms would like with a small box from home.

Location: A field with unhardened ground, land beside a ditch or garden/vegetable plot

Number of participants: Less than 30

Activity process:

Precautions agreed with participants: Don't leave; don't destroy; don't damage. Ask participants to search for earthworms in a safe and relaxed environment.

Look for earthworms in the wild. "Dig here and there" together with your children and compare the distribution and quantity of earthworms in different environments.

After seeking out an earthworm, it may be put in an observation box. The teacher uses the question cards and observes the earthworm together with children. In addition, the earthworm is placed in different environments to observe its preferences for the environment through its motion trail. For example, if the earthworm is placed under the sun, will it crawl into the shadow? If it is placed in a damp environment, would it like it better?

If the activity is held in a garden/vegetable farm, some earthworm composting towers can be built in advance (the production method is attached at the end of the teaching plan). The food for earthworms the kids bring can be straight put into the composting tower. If kids observe earthworms outdoors, the food of earthworms can be buried in the earth (in fact, earthworms need not be fed manually. We just invite them to decompose our kitchen waste. Children should know this). So, such landfilling is not necessary, but children will enjoy it.

Observe which other creatures live in the same environment as earthworms. Let children record what they observe and think on the record card.

At the end of the activity, show participants the earthworm soil in the earthworm



tower/or prepared in advance.

Feel the earthworm on your hand



Observe what soil type that earthworms prefer

Activity 3: Paper theater

Goals: To summarize and share observations

Recommended duration: 30-40min

Location: Ditto

Number of participants: Less than 30

Activity process:

Give participants the opportunity to observe earthworms directly, and then ask each group to choose some creatures impressed to them and draw them on the card paper.

Cut the creature character with scissors.

Find out a suitable small environment around, rehearse in group with the paper characters, and act out these stories.

Give kids enough time for preparation (15-20min).

The leader should give audiences the opportunities to ask actors questions, encourage kids for their performances and give supplementary explanations when appropriate.



Leading actors of the story designed by the children in the paper theater



Earthworm composting box in the nature school

□ Main Characteristics

- 1) Summarize the theater activity: For children, a self-written play is a great way to summarize/share. During creating the story, children will reflect their attitude, natural process they have observed and emotions in the story. The teacher may assess the course on this basis.
- 2) Promote participants' behavior change: Parents (regardless of parents or grandparents) will be very interested in it. This is a very good opportunity for sharing kitchen waste treatment, fertilizer transformation and sustainable living advocacy.
- 3) Help children get out of the comfort zone: Prior to the activity, let children know they should not hurt those little bugs on purpose. Ask if any child is afraid of earthworms (let them hand up). It is very important to know their boundaries. "What would you do if you saw an earthworm?" "Are you willing to try putting an earthworm in your hand and feel it?" Some children may say they are afraid of earthworms and make exaggerated noises on purpose. Distinguish such children from those who are really afraid and encourage them, but don't force them.

□ References

Diary of a Worm, Tomorrow Publishing House (China), Doreen Cronin (text), Harry Bliss (photography)

□ Institution Introduction

Zaidi Nature-based Education Center was established in Kunming City, Yunnan Province in 2012. Over the ten years, it has adhered to exploration, investigation and innovation in the field of nature-based education. There are 3 nature-based education

practice bases: Shicheng Nature School (established in 2015), Gulu Forest Kindergarten (established in 2018) and Chunhu Nature Center (established in 2019). Zaidi Nature-based Education Center is run as a private enterprise, and has 15 employees, one part-time advisor and a volunteer pool. We strive to establish a multi-age interactive platform for walking into, getting close to, respecting and protecting nature through multiple nature activities and courses, help contemporary children, adolescents and young parents directly contact nature to discover the complex relationship and problems among human, nature and society, encourage and help young people develop and train the ability to analyze and solve problems and the sense of responsibility, and build a multi-dimensional relation for sustainable development.



Shicheng Nature School in the forest



Zaidi Gulu Forest Kindergarten

□ Case Providers and Contacts

Case providers:

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Japan Report 1

Tokyo Nature Academy (formerly Tokyo Senior Nature College)

□Abstract

The Tokyo Nature Academy is an introductory course where adults can learn anew about nature and the environment. Although it started as the Tokyo Senior Nature College in 2013, it was temporally closed for the past two years due to the COVID-19 pandemic but is now set to start anew in 2022. We aim to continue providing course participants with the opportunity to meet other people who are interested in nature and the environment with whom they can safely enjoy and learn from nature together while staying in good health and contributing to conserving natural environments. Although the main target is seniors, our course is designed for people in their 20s to 70s. (The average age of past participants is 66.) So far, about 200 people have completed our course. We have 46 sessions in the course, and when a participant has attended 35 sessions or more, they will be appointed as a Tokyo Nature Guide (provisional name). Some participants continue activities after completing the course, such as volunteering to run the Tokyo Senior Nature College NEXT.

□Keywords

Nature experiences in urban cities, a year-round course with intergenerational exchanges and social challenges

□Learning Goals

1. Learn about various aspects of nature and deepen your understanding of living things and biodiversity.
2. Acquire the basic knowledge and skills needed to safely carry out outdoor activities and help participants continue their individual projects after completing the course.
3. Network with people to work to promote greater understanding of environmental issues and social challenges. Share the same values of cherishing nature and work together to help conserve natural environments.

□Activity Process

Our year-round course consists of the following six modules (a total of 46 sessions). Participants complete all the sessions in nine months. Every year, we recruit around 20 to 30 people to participate in our course.

1. Introduction (4 sessions): an entrance ceremony, getting to know the other participants (ice-breaking), and team building sessions
2. Learn about the relationship between humans and nature (9 sessions): mainly classroom lectures
3. Contact with and learn from nature (17 sessions): classroom lectures and outdoor activities
4. Tour the nature of Tokyo (9 sessions): outdoor activities
5. Think about the environment and SDGs (4 sessions): online sessions and workshops
6. Wrap-up (3 sessions): workshops and a graduation ceremony

We will introduce the “An Introduction to Mountain Hiking” session as a typical example.

Session name: An Introduction to Mountain Hiking

Purpose:

1. The program consists of two parts, lectures, and field work. In the lectures, the participants learn basic knowledge of outdoor activities so that even beginners can safely engage in such activities. Participants learn about what shoes and clothing they should wear and how to walk to prevent hiking injuries. Through field work, they learn how to get along with nature and share with other participants the joy of these experiences



2. The participants learn about the importance of the activities of rangers in Tokyo who manage and conserve climbing trails and nature trails, in this case Mt. Takao Trail 1.



3. The participants study geological layers to learn the origin and history of the mountain. By examining flowers, trees, and birds, they can share their feelings of cherishing nature and understand the importance of protecting Tokyo's rich natural environment and the significance of the immediate natural environment.

Time Table:

Event Schedule:

Time schedule	Activities
8:50	Meet, check-in, check temperature, and introduce the instructor
9:00~9:15	Perform warm-up exercises, make sure shoelaces are properly tied and everyone has drinking water in their backpacks, distribute earphone guides and bandanas (to be tied to participants' backpacks to distinguish them from other hikers), divide into groups of around five and select a group leader.
9:15~11:15	<p>With the instructor in the lead, the hike starts in the order of groups 1, 2, 3, and 4.</p> <p>A group leader and a support staff member walk behind each group. On the way, the lead group is switched so the instructor can see how everyone is doing.</p> <p>Take a commemorative photo on a suspension bridge.</p> <p>[Learning Point]</p> <p>Look at geological layers and listen to the instructor through the earphone guide.</p>
11:15	<p>Stop for a hydration and bathroom break:</p> <p>Each group leader will perform a roll call of their group members.</p>
11:30 ~ 12:15	<p>Reach the top of the mountain:</p> <p>Check everyone's physical condition</p> <p>Have lunch</p> <p>Take a group photo</p>
12:15 ~ 13:15	<p>View the exhibition at the Takao Visitor Center</p> <p>[Learning Point]</p> <p>Listen to lectures by a ranger and a guide about "The Animals and Plants of Mt. Takao" and "The Origin of Mt. Takao"</p>
13:15 ~ 13:20	Question and answer session:

	The guide gives participants the assignment: “What we wish you to find out on the way down the mountain”
13:20 ~ 13:35	<p>Prepare to climb down the mountain:</p> <p>Make sure no trash is left behind (leave with everything, including plastic bottles).</p> <p>Encourage participants to go to the bathroom.</p> <p>Each group leader will perform a roll call of their group members.</p>
13:35 ~ 14:50	<p>Start climbing down the mountain in the order of groups 1 to 4 while switching the lead group on the way.</p> <p>Participants will discuss the assignment with their group members.</p> <p>A support staff member will walk behind each group to keep an eye on everyone to see if anyone is unwell.</p> <p>[Learning Point]</p> <p>The instructor will give a lecture on the forest of Mt. Takao to encourage the participants to think about why there are laurel forests on the south slope and deciduous forests on the north slope.</p>
14:50 ~ 15:00	<p>Reach the bottom of the mountain and assemble:</p> <p>The instructor will give closing remarks and a review sheet will be given to each participant.</p> <p>Before ending the session, the participants will be asked to fill in the sheet and submit it at the next session.</p>
15:00	The session ends and participants are free to leave.

Preparations: A review sheet, an earphone guide, and a bandana (for each participant)

Important notes: Ask the participants about their experiences with outdoor activities beforehand and share the information with the instructor. When the instructor gives a lecture, remind participants to keep their distance from each other and encourage them to wear the earphone guides.

After the break, make sure everyone is present by performing a roll call of the participants and take a headcount.

□Main Characteristics

1. Many of the sessions are made up of a classroom lecture and field work to

combine knowledge and experience.

2. The instructors, who are specialists in their respective fields, take the participants to various places in Tokyo where they can come into contact with nature and enjoy hands-on learning about it.
3. Participants can network with people from a wide range of generations to think about social issues and take action.
4. Through group work, participants can share with their group members what they learn and how they feel to further learn from one another and deepen their understanding of each other.
5. Aiming to stay in good health and spirits and to remain active, the participants learn how to move their bodies to prevent injuries and enjoy body maintenance exercises.

☐ **References**

<https://www.jeef.or.jp/english/>

☐ **Institution Introduction**

The Japan Environmental Education Forum (JEEF) is an NGO that, through “environmental education that focuses on experiences and dialogues,” fosters human resources who will help create a sustainable society.

In 1987, the first Kiyosato Environmental Education Forum (now the Kiyosato Meeting) was held, which provided practitioners of “environmental education through nature experiences” an opportunity to interact with one another. The secretariat of the forum became the parent organization of the JEEF, which was established in 1992.

We are committed to environmental education, promoting, and enlightening people, developing instructors, and supporting people in developing countries in partnership with various like-minded organizations and individuals.



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Japan Report 2

Forest Retreat Program

□Abstract

In a retreat, you can get away from your hectic life, cure everyday fatigue, and consequently rebalance your mental and physical health.

Our forest retreat program started in 2005 as one of those hosted by the Kiyosato Educational Experiment Project, Inc. (KEEP) that mainly targets adults.

We hold a forest retreat program several times a year in the form of an overnight course (one night and two days) or a day trip course (around half a day). We pick a theme each time, such as “Five Senses,” “Herbs,” or “Hiking.”

For the overnight course, we invite an expert, who gives a lecture on health, healing, and more. It offers several nature experience sessions, from which participants can choose the one that matches their mood or physical condition.

□Keywords

Retreat, refresh and relax, heal, health, forest bathing, five senses, preventive healthcare, self-care, “workation” , welfare benefits, human resource development

□Learning Goals

1. Participants feel the healing effects of nature firsthand and can take another look at their mental and physical condition.
2. KEEP communicates its forest retreats to the public.

□Activity Process

[Example of an overnight course]

<Day 1>

1:00 p.m. Check-in

1:30 p.m. Opening

2:00 p.m. [Guided Forest Tour]



Focus on the five senses and experience nature firsthand.

Nature experiences have been proven to lower blood pressure, so sometimes we measure blood pressure before and after a tour to confirm this.

4:00 p.m. [Guest Lecture by an Expert]

Medicinal effects of forests, how to refresh and relax in daily life, individual health consultations, etc.

6:00 p.m. Dinner

7:30 p.m. [Guided Night Tour]

Lie in grassland; look up at the stars in the sky; take a deep breath, etc.



<Day 2>

6:30 a.m. [Morning Walk]

Do some stretching or light exercises in a forest.

7:30 a.m. Breakfast

9:00 a.m. [Advice on How to Stay Healthy]

Listen to a lecture on health management methods that you can easily practice in everyday life, including breathing and stretching.

10:00 a.m. [Elective Programs]

Select the one that matches your mood.

Example 1) Moving Your Body

Hiking, forestry work experience, etc.

Example 2) Making Crafts or Cooking

Make objects, your own herbal tea, etc.



12:00 p.m. Lunch

1:00 p.m. [Alone Time]

Spend time alone with yourself in a forest.

2:00 p.m. Closing

2:30 p.m. End

□ Main Characteristics

1. Collaboration with experts

We pick a theme each time and invite an expert (a doctor, university professor, etc.) as a guest instructor to bring out the uniqueness and expertise of the program.

2. Pleasant natural environments

Participants can spend time at ease in the highlands, where the weather is cool even in

the summer. The forests and walking trails are well kept, and varied landscapes, such as grasslands and creeks, are viewed.

3. Applications from businesses

By communicating the attractiveness and effects of forest retreats to the public, applications from businesses and other organizations are on the rise.



□References

[1] Eisei Furuya, Forest Therapy Handbook (Tokyodo Shuppan Co. Ltd., 2005)

[2] Handbook for Forest Retreat (KEEP Inc., 2021)

https://www.seisenryo.jp/images_kankyo/retresat_dl.pdf

□Institution Introduction

KEEP, Inc. was founded in 1938 by an American, Dr. Paul Rusch. KEEP stands for Kiyosato Educational Experiment Project. Under the subjects of “belief,” “food,” “health,” and “Hope for the Youth,” KEEP built and operated a church, a lodging and training facility (currently known as Seisen-Ryo), a farm, a clinic, and a day-care center, and many others with the aim of creating a new model for the farming community in postwar Japan.

Now, building upon the ideals and spirit of Dr. Paul Rusch and in pursuit of a



sustainable society, KEEP engages in various projects, such as environmental education, agriculture in cold uplands, international exchanges, and childcare.

Of those, KEEP was first involved in environmental education in 1984. Since then, it has collaborated and worked together for nearly 40 years with a wide array of individuals and institutions, including citizens, schools, governments, and businesses. KEEP has been striving to promote environmental education both at home and abroad by doing the following:

- Providing nature experience-based environmental education
- Researching and developing environmental education programs
- Supporting national and international environmental education networks
- Increasing the recognition of environmental education instructors and helping them develop

Currently, about 30 dedicated staff members manage and operate the following environmental education facilities:

- Seisen-Ryo Nature School
- Seisen-Ryo Yamane (dormouse) Museum
- Yamanashi Prefectural Yatsugatake Nature Center
- Nikko National Park Nasu Heisei-no-Mori Field Center (the Ministry of the Environment)

They also carry out environmental education programs as a sponsor or on commission throughout the year, including the following:

- Training environmental education instructors
- Forest retreat programs
- Mori no Youchien (forest kindergarten)
- School field trips
- Employee training and nature experience events for businesses

Situated at the foot of Mt. Yatsugatake and the highlands of Kiyosato with an abundance of natural resources (forests, grasslands, and valleys), KEEP is able to take a special comprehensive approach toward environmental education with its staff, programs, facilities, and food.

□Case Providers and Contacts

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Japan Report 3

The Green Trail (in Japanese, Midori no Komichi) Environmental Diary is an environmental education project

□Abstract

The Green Trail (in Japanese, Midori no Komichi)

Environmental Diary is an environmental education project that was initiated in 1999 by Green Cross Japan (GCJ). In this project, elementary school students, who will shoulder the future of the next generation, write diaries on the theme of the environment for eight weeks. The aim is to create an opportunity for children to think about global environmental issues, notice the connection with their surrounding living environment, talk about it with others around them, and take action. The Environment Activity Network (in Japanese, Kankyo Katudou Net) agrees with the concept of the Green Trail Environmental Diary and started this project in Shinjuku in 2006 with the help of GCJ.

In this project, we distribute an original guidebook (supplementary reading material) that contains information about the local environment in Shinjuku, offer on-demand lectures at elementary schools, and upload content onto YouTube. We also created a corporate award with the collaboration of companies so that we can support children's activities and hold annual contests, where the award is given out.

In FY2022, we distributed about 7,000 diaries to children (4th to 6th graders) in 29 schools in the city in June. In September, applications were made for 1,204 diaries by 24 schools. During the 17 years since the start of this project in 2006, 15,490 students have taken part in the project.

□Keywords

Familiar environmental issues, regional partnership, diverse sectors, change in action, urban environmental education

□Learning Goals

1. Understand that there are familiar matters that are linked to the environment by having interest in environmental issues on a regular basis and getting to know about the issues (knowledge)
2. Develop an attitude of continuously thinking about the issues, talking about them with others, and taking action (attitude)
3. Have an own opinion about environmental issues (value)

□Activity Process

1. Background (characteristics of Shinjuku City)

1.1 Shinjuku: Tokyo's largest subcenter with diverse aspects

Shinjuku is located in Tokyo, Japan's capital, and is one of the three major subcenters of Tokyo, along with Shibuya and Ikebukuro. Shinjuku has a population of about 330 thousand people, but its daytime population is about 740 thousand (2015 national census), which is twice as many. This is because many people come for work, school, tourism, and its many other aspects. It is one of the main business districts and has many skyscrapers. It is also a student town, and young people from across the country come to its many universities and vocational schools. It is a city of international tourism, and the Guinness World Records certified Shinjuku Station as the busiest station in the world. It is also a multicultural city, where 11 percent of the residents are from other countries (as of October 2022 according to Shinjuku City's website).

In this project, we will make use of the characteristics of Shinjuku, a place where people, things, and information come and go, and offer an urban environmental education with the collaboration of various sectors.



1.2 Rich nature scattered across the city

Generally, there tends to be less greenery as urbanization progresses. But despite being a big city, Shinjuku is rich in nature, such as Shinjuku Gyoen National Garden and Shinjuku Chuo Park. According to the 2020 field survey on greenery in Shinjuku Ward, the green coverage rate, which indicates the ratio of green space in a location, was 17.98 percent. Shinjuku ranks in the middle range in Tokyo.

2. Shinjuku City Green Trail Environmental Diary Project

The Shinjuku City edition of the Green Trail Environmental Diary Project started in 2006, and 2022 marks the 17th year of this environmental education project. By having elementary school students continually keep diaries, it aims to create an opportunity for children to take another look at school classes and daily lives in their community and at home from an environmental perspective and promote change in their awareness and actions toward creating a sustainable society.



3. Schedule

April to May	<p>April to early May, create the green trail environmental diary and supplementary reading materials</p> <p>Late May, distribute the green trail environmental diary and supplementary reading materials</p>
June to August	<p>June to July, give on-demand lectures on the environmental diary</p> <p>June to August, upload content online that supports the environmental diary</p>
September to October	<p>Early September, collect the environmental diaries</p> <p>September to October, hold review meetings</p> <p>Late October, contact award winners</p>
December	Hold the award ceremony

4. Implementation details

We provide various forms of support for elementary school students' activities that make use of the city's characteristics so that students can engage in environmental activities through environmental diaries in a manner unique to Shinjuku.

4.1 Creation and distribution of supplementary reading materials (Shinjuku Edition

Guidebook)

We create original supplementary reading materials, distributed together with the diary, that serve as a reference for keeping the environmental diary. We put effort into making a guidebook that can get the message across to children, such as adding a comic strip about the environment and uploading content onto YouTube that supports the guidebook.

Example: FY2022 supplementary reading material Shinjuku Edition Guidebook

Pages 2 and 3	<p>Feature: Four Conditions to Pay Attention to When Coming into Contact with Urban Nature</p> <p>Key points (light, humidity, landscape, and the indoors) to note when coming into contact with nature unique to urban areas are explained in an easy-to-understand manner using an original comic strip.</p>
Pages 4 and 5	<p>Shinjuku Eco-Activity Map</p> <p>The map shows various environmental activities that are conducted in parks, environment-related facilities, and schools in Shinjuku City.</p>
Pages 6 and 7	<p>Eco-Friendly Efforts Made by Companies and Organizations</p> <p>This section introduces examples of efforts related to SDGs and the environment (e.g., environmentally friendly products, technologies, and activities) made by companies supporting this project.</p>

The booklet itself is environmentally friendly. It uses bamboo paper, vegetable-based ink, and carbon offsets to compensate for CO2 emissions produced during its creation, from raw material procurement to production.



4.2 On-demand lectures in collaboration with guest teachers

In order to encourage more elementary school students to engage in environmental activities, we welcome guest teachers from companies that have connections with Shinjuku or local organizations, and we collaborate with them to offer on-demand lectures. In the classes, we provide guidance on how to keep the diaries, and guest teachers offer topics on environmental issues.

In the lectures, staff members from our organization explain the purpose and general description of the environmental diary and teach the children how to make entries in their diaries by showing them diaries that won awards before they start their own diaries. We also invite guest teachers from local companies and organizations to talk about their environmental-awareness activities, businesses, and products, as well as the background to such efforts.

Examples of the themes of on-demand lectures held in FY2022 (excerpts)

Contributing to society through paper making	Chuetsu Pulp & Paper Co., Ltd.
SANYO's lecture on clothing: From cotton to clothes	Sanyo Shokai Ltd.
Rice making experiential learning	Numata City, Gunma Prefecture
Get to know about Shinjuku's water facilities and greenery!	Green Park Division, Shinjuku City
Nature tour: Get to know about familiar nature in the city	Shinjuku Chuo Park Biotope Group



4.3 Online content

In addition to on-demand lectures, we also offer content online. Since 2020, we have been creating videos on the theme of the natural environment (birds, plants, insects, etc.) in urban areas. The content of the videos is included in the guidebook from the following year onward. Through the videos and guidebooks, children learn the key points of observing nature in nearby parks, which allows them to observe nature in their daily lives and write about it in their diaries. By offering content online, we are able to create a place of learning even when it is difficult to hold face-to-face events, such as nature tours, due to the coronavirus pandemic.

4.4 Cooperation with companies (establishment of a sponsorship award)

In FY2018, we called on companies and organizations that are headquartered in Shinjuku and worked together to create special sponsor corporation and organization awards. This creates more opportunities to award children working on environmental diaries. In addition, we also hope that the employees who review the children's environmental diaries are inspired by them. We hope to promote realizations beyond just one generation and create a place of learning.

SANYO Fukufuku Award (Sanyo Shokai Ltd.)	Sanyo Shokai is a comprehensive fashion and apparel company headquartered in Shinjuku. Employees review the diaries, and the award goes to environmentally friendly realizations and remarkable activities related to clothing.
Wakuwaku Eco-no-wa Award (Sompo Environment Foundation)	Sompo Environment Foundation is an environmental group headquartered in Shinjuku. Employees review the diaries, and the award goes to activities that address environmental issues, such as climate change, and that are conducted with the mutual support and enjoyment of others.

□Main Characteristics

1. Ripple effects

This environmental education project targets elementary school students. But for children to continue participating in the project, support from schools, families, and local companies is absolutely essential. Such relationships produce ripple effects that change the awareness and actions of classmates, teachers, family members, and employees.

2. Continuity

Children write in their environmental diaries for eight weeks, but some continue to write in them for several years.

So the quality of their diaries improves every year and environmental activities become a habit. The project has been conducted for 17 years, and past award winners have grown to become university students and working adults who are active in various fields.

Some participate in this project in many different forms, such as being judges.

□References

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<https://www.city.shinjuku.lg.jp/content/000230280.pdf>
- Population of Shinjuku City
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□Institution Introduction

The Environmental Learning Support Group, established in Shinjuku in 2002, is a network of guest teachers that promotes environmental education and ESD (Education for Sustainable Development). About 70 organizations, including community-based organizations, non-profit organizations (NPOs), corporations, and administrative bodies that are engaged in environmental activities for creating a sustainable society are registered with the network. The group coordinates on-demand lectures, community lectures, experience-based workshops, events, etc. that utilize the characteristics of urban areas, mainly in Shinjuku. The group became an incorporated NPO in 2003 and changed its name to Shinjuku Environment Activities Network.

Since 2004, the group has been planning and conducting various environmental education programs, mainly within Shinjuku city, for children and adults as the designated administrator of Eco Gallery Shinjuku (Shinjuku Environmental Learning Information Center). By making use of the experience and expertise the group has accumulated over the past 20 years in Shinjuku, it is expanding its field of activities into cities such as Musashino City, Hachioji City, and Setagaya City in Tokyo and Kawasaki City in Kanagawa. We engage in creating a place of learning and in activities that make use of the characteristics and strengths of the areas concerned.



□ Case Providers and Contacts

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Japan Report 4

Making a unique secret base for the family

□Abstract

Parents and children spend three days and two nights at an eco-institute to make a secret base. The families choose the concept of their secret base, such as for playing or sleeping in, and then they make the base they want in a large forest. They can make a swing or a roof that keeps out the rain and wind.

When a person is making something, they gradually get the feeling of wanting to make improvements. At that point, a forest will no longer seem to be just trees but will look like a mountain of treasures that can be used for different things.

Through this activity, participants can learn and experience that creativity offers infinite entertainment.

Activity period

1. Friday, April 29, 2022, to Sunday, May 1, 2022
2. Tuesday, May 3, 2022, to Thursday, May 5, 2022
3. Saturday, October 8, 2022, to Monday, October 10, 2022

This activity was for parents and children, so it was held during the holidays and on a three-day weekend. The forest is cool and easier to see ahead in spring and autumn, so it is easier to engage in activities.

□Keywords

Make a secret base, nurture creativity, use the forest

□Learning Goals

1. Make use of the resources of the forest and nurture creativity that allows people to give shape to their ideas and thoughts.
2. Acquire skills that come in handy outdoors, such as ropework.
3. Enhance communication between parents and children

□Activity Process

Day One

Participants prepare to make a secret base the next day.

First, they walk around the forest and fields to find a good spot to make their secret base.

Next, participants learn about ropework to help them build their secret bases. They

learn how to make a clove hitch, which is useful in many instances, and a hako knot, which is used in gassho-zukuri houses. Learning these things allows them to bring their ideas into shape.

After dinner, the families draw their plans on large pieces of paper to organize their ideas, visualize their goals, and choose their themes. If their theme is to stay the night, they need to build sturdy roofs and walls to protect them from rain and wind. If their theme is to play, their secret base will have various types of play equipment, like a theme park.



Day Two

Families work together to create what they have in mind and can use saws and pruning shears to cut the trees whichever way they like, which is a unique experience that our school provides. Clearing a space on their own gives families a great sense of accomplishment.



The secret bases that the families make are all very different. Swings are very popular. Trying to get a rope to hang from a high branch is hard work. You can hear the families' voices of excitement in the woods when they manage to get a rope suspended.



Some families decorate their secret base with natural objects, such as stones and leaves. Putting effort into even small things helps form a feeling of attachment to a secret base.



Once a family is happy with the secret base they have made, they play as they wish and relax. Family members appreciate each other's efforts and have a fun time.



Participants go to their secret bases at nighttime as well. The base has a completely different atmosphere at night compared with the day, and they can have an exciting time. Also, by looking back at all the work they have done, families can celebrate their accomplishments.

(In principle, participants sleep in their guest room at night, but they can choose to stay in their secret base on day two.)

Day Three

On the last day, families show the other families what kind of secret base they made. By sharing what they worked hard on and what they thought was difficult, they can look back on what they made and find new possibilities.

Lastly, they dismantle their secret bases. This creates a feeling of appreciation of the forest for allowing them to use its resources.

□Main Characteristics

1. We make use of the seasons when it is easy to manage and maintain the forest (spring and autumn).
2. The activity is conducted in a large 172-hectare forest that Toyota owns.
3. Participants can create what they want, not what they are told to create.
4. Experienced staff members provide technical support.
5. Spending quality time with family members allows parents and children to get to know new things about each other that they did not notice in their daily lives and allows them to strengthen their bonds.

□References

The school's website

<https://toyota.eco-inst.jp/wp/activities/my-secret-base-22/>

□Institution Introduction

Name of facility: TOYOTA Shirakawa-Go Eco-Institute

Operating organization: Forum for Environmental Symbiosis in Shirakawa-go

Established: 2005

Address: 223 Magari, Shirakawa, Ono District, Gifu

Number of staff members: 31

Introduction:



TOYOTA Shirakawa-Go Eco-Institute is located in the mountains near the Hakusan National Park and overlooks the world heritage site, Gassho-zukuri housing settlement. It is surrounded by a large and rich forest, and we are proud of the rich natural environment, where the water and air are fresh.

The catchphrase is “Wild and Smile: Let’s Go Outside on a Sunny Day.”



The school has welcomed many guests every year ever since it opened in 2005. Visitors play, learn, and grow in the forests, mountains, and rivers and sometimes enjoy comforting experiences. For example, children get to experience camping with other children of the same age from various parts of the country. Adults enjoy activities, such as hiking, trekking, walks in the forest, ageless nature guides, and leadership training through hiking. We offer activities that involve our natural environment.

□Case Providers and Contacts

Case Provider: MAMEMURA Shinya

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Japan Report 5

Become an Expert on Animals with Your Parent !

□Abstract

This series offers a program called “Become an Expert on Animals with Your Parent,” where participants can search for, observe, and understand animals in their neighborhood and then continue their interest in nature after the program. By “expert,” we do not mean a researcher or scientist but rather someone who realizes the beauty of animals and pays attention to nature in their everyday life. The program is aimed at children aged around six to ten and their parents. It has specific themed events, some of which are very popular and are fully booked on the first day of registration.

●Examples of events:

- * Giant flying squirrel watching(July)
- * Firefly watching (July)
- * Freshwater crab fishing on a river (June)
- * Insect net making and insect hunting in a field (August)
- * Snake watching and learning firsthand their survival powers (July)
- * Bird’s nest and bird call making, bird watching (December)
- * Water bird watching (February)
- * Red swamp crawfish fishing (year round)

Participation fees are between 3,000 and 4,000 yen in total for a parent and child.

□Keywords

Observe animals living around us, deepen the understanding of their biology and behavior, create and provide observation equipment

□Learning Goals

1. Teach participants how to find animals in their neighborhoods and motivate them to observe nature in everyday life.
2. Provide participants with a deeper understanding of the biology and behavior of animals so as to increase their interest.
3. Provide participants with an opportunity to think about what they can do to preserve the rich environment where animals live.

□Activity Process

Below are details about flying squirrel watching, one of our very popular events.

- Event title: Flying Squirrel Watching
- Brief description: The forest in Lake Tanuki Nature School (Tanuki-ko Fureai Shizenjuku) is home to flying squirrels. We have set up nests in the trees and have been observing them use the nests. This event is for participants who would like to observe flying squirrels. It provides participants with a deeper understanding of flying squirrels and an opportunity to think about what they can do to preserve the living environment for this animal.

- Date and time: Beginning of June, 5:30 p.m.–7:30 p.m.

- Event details:

* Opening (Participants meet at Lake Tanuki Nature School.)

Opening remarks, schedule check, self-introductions, etc.

* Review of the characteristics of flying squirrels

Many participants are very interested in flying squirrels. We conduct activities to check how much they know about flying squirrels.

1. Each pair of participants is given a pen and paper and asked to complete an unfinished drawing on the paper, which has only the head and feet of a flying squirrel. Each parent and child pair work together to complete the picture.
2. Participants then show their pictures to other participants.
3. The participants are provided with the answers to questions asked earlier, with an actual size model of a flying squirrel used to describe their physical characteristics.

* A quiz is held on the biology and behavior of flying squirrels.

The quiz is used to explain the biology and behavior of flying squirrels to deepen participants' knowledge before they observe them.

1. Cards are handed out to participants, each containing numbers one to three, and the rules are explained. Each question has three possible answers, and participants raise the card they think has the correct answer.
2. The MC asks questions, and a staff member who dresses as an "Animal Expert" explains the answers.
3. We ask a total of seven questions about flying squirrels, including about their food, home, and feces.

* Flying squirrel watching

1. Binoculars are provided to participants for watching the flying squirrels, and we explain how to use them.

2. Participants are informed about things to avoid when watching flying squirrels, such as do not raise your voice or shine light on them.

—————To the forest where flying squirrels live!—————

3. Participants wait for the flying squirrels to come out of their nests.

Most flying squirrels become active 30 minutes after sunset. Together with participants, we wait for them to come out of their nests. Sometimes, you can see them poke their heads out of the nests after sunset. After they have come out of their nest, participants can observe their activities, such as eating leaves and gliding through the air.

4. After the flying squirrels have gone, participants go back to Lake Tanuki Nature Experience School.

* Picture story on flying squirrels

1. Participants are asked if they saw any flying squirrels.
2. Observation records by a zoologist based in Tokyo are shown using pictures to tell a story. It is about the impact of human activities on flying squirrels.

It provides participants with an opportunity to think about how to live with wild animals, including flying squirrels.

* Review and summary

Observation details and quizzes are reviewed.

Participants take a questionnaire to find out their reactions.



□Main Characteristics

1. The event provides participants with an opportunity to experience and observe living animals.
2. It focuses on how these animals live rather than memorizing their names: “What kind of environment do they live in?” “Why do they behave in that way?” etc.
3. It motivates participants to look for animals in their everyday lives. At these events, we provide participants with our own guidebook on how to find animals.
4. Preservation

Red swamp crawfish used in our event are an alien species living in Lake Tanuki. We catch them and use them for our event to raise awareness.

By setting up nests for flying squirrel watching, we provide them with a place to live.

□References

None

□Institution Introduction

Lake Tanuki Nature School opened in 2000 as the first Nature School of the Ministry of the Environment. NPO Whole Earth Institute serves as the trustee. It houses Nature Experience House, which is operated by Whole Earth Institute, and a cottage for accommodation. Three members of staff are on duty at all times. (The Whole Earth

Institute has about 40 staff members.) The facility is open to the public for free. It offers many ingenious services, including descriptions of exhibits that enable visitors to get hands-on experience of nature and places for them to socialize with other. It is a nature experience park that fascinates everyone, from children to adults.

Lake Tanuki Nature School is located in Fuji-Hakone-Izu National Park. Visitors have a clear view of majestic Mt. Fuji when the weather is nice. The neighboring areas are blessed with great nature, including rivers containing subterranean water from Mt. Fuji and volcanic caves. Visitors can also enjoy familiar plants and animals, including beech, maple, cedar, and cypress trees, and insects, such as locusts and butterflies, as well as ducks that have flown to the lake. One can say that the school is in an ideal location, which allows visitors to experience both the dynamic nature of Mt. Fuji and nature more familiar to us. Moreover, the park environment provides a safe environment for visitors with different interests in nature. Many visitors are especially interested in deepening their understanding of nature and experiencing the value it offers.



As it takes about 30 minutes to reach from the city, it is difficult for children to visit on their own. Therefore, we offer nature experience programs for parent and child pairs. While putting an emphasis on “nature to human and human to human interactions,” we make use of the outdoor environment to conduct environmental education, which offers the first step to realizing the value of nature.

□Case Providers and Contacts

Case provider: SAGAE Daisuke

Lake Tanuki Nature School

Contact person: SAGAE Daisuke Whole Earth Nature School

Phone:0544-54-5410)

Korea Report 1

Korean Fir's Story of Climate Change

□Abstract

Today, the increase in greenhouse gases due to human activities has a huge impact on climate change.

The increase in greenhouse gases has caused global warming by raising the average temperature of the earth and reducing biodiversity by driving many living things to extinction. It has furthermore emerged as a serious problem for human survival.

This educational program was thus developed to raise awareness on the significance of global warming and to encourage a eco-centered life rather than a human-centered life.

In order to increase the learning effect, the activities are mainly held for 120 minutes in 11~13 year old class units according to the life cycle.

The program utilizes the Korean Fir tree to familiarize global interests such as climate change and carbon neutrality. Through ecological observation and hands-on exercises, the students are encouraged to voluntarily practice carbon-neutrality.

□Keywords

Korean Fir, Climate Change, Korean Fir observation, Play

□Learning Goals

1. Acquire theoretical knowledge related to the etymology and ecological characteristics of the Korean Fir and materialize it through observation activities.
2. Realize the risk of climate change by understanding the causes of climate change and its consequences, and how these changes affect Korean Firs.
3. Develop the capacity to find and act on small efforts to prevent climate change.

□Activity Process

I. Activity Introduction

Activity 1 : Korean Fir Comparative Observation

Purpose : Learn about the etymology and characteristics of a Korean Fir and the damages that climate change has incurred on it.

Duration : 30 minutes

Learning Materials :

Korean Fir (fruits, leaves, seeds) Fir tree (fruits, leaves, seeds), Pine tree (fruits,

leaves, seeds), magnifying glass, Pinceaceae plant classification board

Preparation :

1. Explain etymology and ecological characteristics of a Korean Fir with a powerpoint presentation
2. Set the learning materials for each group and instruct to observe them

* Caution

Make sure the young trees are not damaged while observing.



Activity 2 : Find the Korean Fir on a Flipping Memory Board

Purpose: Differentiate between Korean Firs and other pine trees with a game

Duration : 20 minutes

Learning Material : Flipping Memory Board

Preparation :

1. Set 24 memory boards on their flipped sides
2. Divide into two teams and flip 2 boards at a time
3. The team that finds more matching pairs wins

(Korean Fir matches are 2 points, the rest of the trees and plants are 1 point)

4. Continue until all the matches are found

* Caution

Make sure the order is well-kept

Make sure students can identify the Korean Fir's characteristics, rather than playing a simple game.



Activity 3 : Nature Play Activity

Purpose : Learn to appreciate nature (Korean Firs) and foster cooperation.

Duration : 40 minutes

Learning Material : Pineaceae plant classification board, natural products

Preparation :

1. Observe Korean fir habitats while moving
2. Understand the significance of nature (Korean Firs) and play a cooperation game to learn that nature can be protected only with human cooperation

* Caution

Look out for accidents while moving



Activity 4 : Making Pencil Pouch

Purpose : Encourage will to practice climate change-reducing activities

Duration : 30 minutes

Learning Materials : Pouch, Dyeing pen

Preparation :

1. Distribute 1 pencil pouch per person
2. Using the dyeing pens, draw a Korean Fir on the pouch to remember what it looks like
3. Present the finished product and a personal goal.



□ Main Characteristics

1. Objectified communication: Curriculum developed based on scientific and objective research findings by the National Institute of Ecology's Eco Adaptation Team.
2. Experiential Education : Use various learning methods that encourage easy and effective knowledge transmission such as observation, playing, or crafts to ensure the students do not perceive the materials as boring. This enables independent problem identification and resolution by the student.
3. Popularizing Ecological Education: As our life needs to be changed from human-centered to eco-centered now, we can instill a sense of moral ecology in people's minds.

□References

- [1] Sang Hoon Lee. Change in Stand Structure of Korean Firs in Hanla Mountain Youngshil Region over 6 years (2011-2017)
Press: 2019. Korean Forest Science Association Journal
- [2] Jin Hee Kim. Hierarchical Environmental Factors affecting the Distribution of *Abies koreana* on the Korean Peninsula
Press: 2018. Forests.
- [3] Hyung Chul Park. Transcriptome analysis of Korean fir (*Abies koreana*) in response to elevated carbon dioxide and high temperature
Press: 2019. Plant Biotechnology Reporters.

□Institution Introduction



The National Institute of Ecology, launched on October 28, 2013 as an affiliate of the Ministry of Environment, is an ecology research institute with the largest ecology research manpower in Korea.

We preserve the national natural ecosystem by conducting systematic ecosystem research and restoration based on our in-depth professional capabilities, and provide easy access to information on ecological research that might be complex at first glance through various ecological education and ecological exhibitions. We

furthermore intend to contribute to the cultivation of moral ecological consciousness. Today, the world is facing an unprecedented climate change crisis, and with the COVID-19 pandemic, the world's attention and cooperation are being focused on the protection and sustainable management of the natural environment.

In the midst of such changes, the National Institute of Ecology is an institution that faithfully supports the country's natural environment conservation policy and enables Korea as well as the global community to continue to enjoy the gift of nature through leading ecological research.

□ Case Providers and Contacts

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Korea Report 2

Swallow Ecological Exploration Project (Our Village Swallows Research)

□ Abstract

The Swallow Ecology Exploration Project by the Gyeongsangnam Province Ministry of Education investigates swallow birds breeding around schools and villages. The project started in March, 2010 and has recruited about 70 school-based swallow survey clubs each year in which students and teachers participate. Its main activities are swallow joint surveys conducted for two weeks in the 2nd and 3rd week of May, studies of swallow migration routes via ring attachments and geolocators, and campaign activities for the protection of swallows. Since 2021, schools from Jeju island and Jeonlanam Province have organized it as a joint project.

□ Keywords

Swallow observation, Swallow Ecology, Swallow population change, Climate Change

□ Learning Goals

1. Observe and understand swallow ecology and gain knowledge about the significance of local wetlands and environments as swallows' habitats.
2. Train research skills on the connection between the environment/climate change and the change in swallow population.
3. Grow solidarity and a proactive and interpersonal competencies to solve the climate change issues we are confronted with.

□ Activity Process

I. Activity Introduction

Activity 1 : Pre-participation Seminar

Purpose

- Explain the purpose of the project and motivations of the teachers and students as well as share the significance of swallow research
- Explain swallow's ecological characteristics, relevant research methodology, and cautions for research (characteristics, and setting regional scopes)
- Explain sharing research data through "Naturing" App



Activity Dates : March to April

Method:

- Set a date for pre-participation seminar with the club sponsoring instructor
- The business operation manager of Upo Ecology Institute visits the school to hold the pre-participation seminar.
- The location is set by the club, centrally to the researching region.

Activity 2 : Our Village Swallow Research

Method : The club sponsoring instructor and students visit the swallows breeding ground and research the number of breeding swallows. The collected datas are recorded on the Naturing.net App (2022 naturing.net)

Share the project on social media platforms to encourage participation from Jeju island and Jeonlanam Province.

Activity Date : 2nd-3rd Weeks of May, for about 2 weeks

Activity Location : Swallow researching region as planned prior

Learning Material : Writing utensils, recording paper, binoculars, camera, phone, etc

Preparation :

1. Introduce research methods and cautions
2. Research swallows around village
3. Record and share research results (on the app)



Activity 3 : Swallow Protection Activity

Purpose : Install supporting beams for swallow nests and put awareness stickers to raise awareness to local villagers about decreasing numbers of swallows.

Activity Content

1. Install Supporting Beams for Swallow Nests



2. Make awareness stickers



II. Advanced Activities

Activity 4 : Swallow Migration Route Research

Purpose

1. Provide professional research experience in Korean swallow migration routes and expand knowledge on avians.
2. Establish cooperative relations with other countries that are included in the migration route in order to protect swallows.

Time : June-July

Method : Claw Ring Attachment Research, Geolocator Attachment Research

1. Capture swallows using nets towards the end of the breeding period.
2. Attach geolocators and claw rings and record information.
3. By students' active participation in observing swallows' characteristics, the activity brings more interest about avians and chances to experience the mystery of life.
4. After the geolocators and claw rings have been attached, the swallows are set free.



Activity 5 : Korea, Japan, and Taiwan international students participation in Swallow Camp

The camp started in 2013, in the order of Korea- Japan- Taiwan. It operated until 2013, but has stopped due to Covid. It is planned to be operate again from next year.

Purpose : Expand understandings of swallow breeding status and traditional agricultural cultures through exchange with other regions participating in the swallow research.

Time : August



□Main Characteristics

1. Biodiversity Education: The goal is to understand avian characteristics through researching swallow ecology, and to encourage activities that protect endangered species. This will be a proactive biodiversity protection activity fulfilled through public school education.
2. Civil Science : Research and share information about animals around the school and village through annual club activities with students and teachers.

□References

None

□Institution Introduction



The Upo Ecological Education Institute is an environmental education institution established in 2008 in Changnyeong county, Gyeongsangnam Province.

Upo Wetland, a Ramsar-registered wetland, is nearby. Upo Wetland is the largest inland wetland in Korea where various wetland creatures live.



The Upo Ecological Education Institute opened in 2008 with the 10th Ramsar Convention Conference of the Parties. Upo Ecological Education Institute has 11 programs including wetland experiential learning for elementary school students, swallow ecology research project, biodiversity research club, family experience program using weekends or vacation period, and training program for teachers. About 25,000 people are directly or indirectly participating in these programs every year.

□ Case Providers and Contacts

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Korea Report 3

A School that Grows with the Village

□ Abstract

Village environment improvement activity to build a sustainable city

□ Keywords

Sustainable Ecology, Village Improvement, Metaverse Environment, Ecological Service, Salamanders

□ Learning Goals

1. Learn the village history and its environment- including the walking paths and infrastructures.
2. Understand ecological services, biodiversity activism and climate change activism in relation to constructing and cooperating for a sustainable city.
3. Familiarize oneself with VR utilization and tlearn about diversity from using Metaverse.

□ Activity Process

I. Introduction of Learning Methods

		1	2	3	4	5	6	7	8	9	10	11	12
1	Wonjeok Mountain Salamanders and the Korean Large Brown Frog Conservation												
2	Blue Frog Conservation												
3	Urban Forestry Activity												
4	Village Conservation through village exploration and flogging for village environment												
5	Metaverse Video Production												
6	Urban city exploration and Scientific Forest Commentary Program operation (production)												

Mt. based on this pattern (Korean brown frogs cannot be calculated due to different egg shapes)

- Measure temperature, Ph levels, and water quality

5. Awareness campaign to surrounding hikers about the activity's purpose and conservation methods



Activity 3

Purpose: Implement SDGs 11,13,15 and exercise climate change response and carbon neutrality through urban forest building and village planning

Time: Every Fridays and holidays (only on voluntary basis)

Materials: gardening hoes, shovels, seeds

Method:

Same as Activities 1-2 but use empty lots in the same region

1. Planting Birch Trees (1 tree per person in 1 year's club membership)
2. Plants fine dust preventing flowers such as sunflowers and white crimson (Use plants budded inside the school)

* Partially connect with gardening initiatives from regional society's wellness centers



Activity 4

Purpose: Understand the village by protecting and cleaning the village with flogging

Duration: 120 min.

Materials: Cleaning utensils, 360 camera, gloves, campaigning flyers, solar-powered lamp

Preparation

1. Assemble at entrance of Sangok Village
2. Share schedule and routes on the map flogging with the village representative while learning about the village
3. Check village outskirts and install solar-powered lamps
4. Go through film production route (organize expert students into a film-specialization team)



Activities 5-7

Purpose: Using Facebook and spatial.io, record the history of the village before urban development with resident interviews on the Metaverse. Student utilization of scientific exploration tools such as the ozone measuring device, air quality measuring device, wind direction and speed meter, fine dust measuring device.

Time: 4 meetings and individual filming time for each season

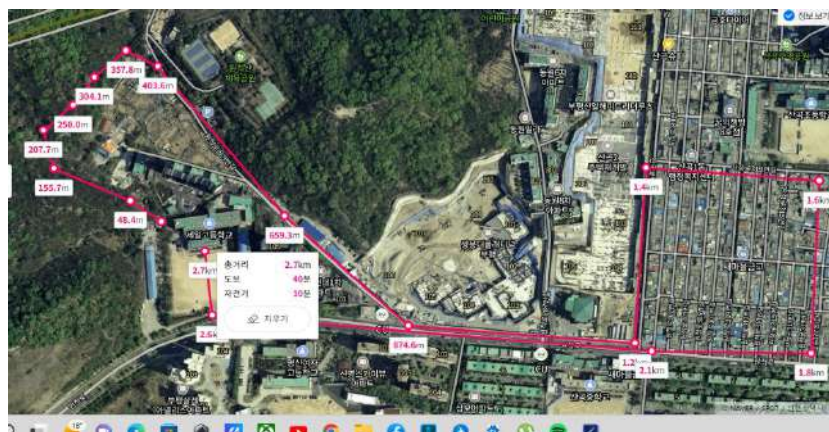
Material: VR360 camera, relevant devices, AI video production program (photo-drawing converters)



Activity: Produce video of walking paths and alleys using village's unique characteristics

Target audience is for the physically disabled students who are not able to participate in walking path activities

The 360 degree videos are personally edited and uploaded to the internet, the photographs are digitally converted into images (with the help of the art instructor specializing in watercolors and oil paintings) to be uploaded on Metaverse



Collected data is processed for presentation and proposals for the Ministry of Education and village events as student research results.

□ Main Characteristics

1. Self-organized activities

“We lead our own learning and activities.” The students experience a self-improvement process by organizing their own schedules and studies while not knowing what the right answer is. The students cooperate with each other to correct and support their learning processes, and to encourage more independent interests in the environment as well as a synergetic habit of independent initiatives.

2. Sustainable Planning through Collaboration

- As the village council and the students present their opinions or communicate with each other in the same space, their understanding of the village increases and they learn from each other the “technology of cooperation” for the local community and grow together.

3. Career development through Project-Based Learning

-Each person can find their own field of interest and explore on their own, learn from project planning, design, operation, and final result, as well as develop critical thinking, problem-solving, collaboration, and self-management skills. A liberated and diverse experience allows students to better understand what environmental conservation is and what they need to learn.

□References

Composition and application of evaluation indicators for quality of life. Geon-seop Song, Kun-seop, Kim, Young-Oh, and 2 others Local Government Research 12(4), Korean Society of Local Government

2009.2 225-247(23pages)

Study on the predatory tendencies of Korean salamander (*Hynobius leechii*) larvae and specific behaviors that occur during hatching processes.

Synergy and trade-off analysis of national Sustainable Development Goals (K-SDGs): Focusing on Goal 15 (conservation of terrestrial ecosystems)

South Korea developed Korean Sustainable Development Goals (K-SDGs) to achieve Sustainable Development Goals (SDGs). According to the Sustainable Development Report 2021, South

Hyeyoon Seo, Eunho Choi, Korean Society for Climate Change Journal of the Korean Society for Climate Change

13(2)2022.4 189-200(12pages)

□Institution Introduction



The Sangok 1-dong area was the center of Sangok-dong until the 1970s and 1980s, when there were many factories and military bases in Sangok-dong. It is now extremely neglected⁹ and many of the residents have left.

Although it was designated as an urban environment improvement zone 10 years ago, it did not proceed. However, the redevelopment is expected to accelerate with the opening of Sangok Station in 2021. As it is an area that has not been developed for a long time, there are many old stores that remain today, including historic buildings.



Wonjeok Mountain, 196.1 meters high, extends from north to south between Seo-gu and Bupyeong-gu in Incheon Metropolitan City. The mountain stands like a forest isolated due to urban construction, and is a place where living things cannot move and adapt to live.

Currently, there are many birds, amphibians, and reptiles, including woodpeckers, and since the 1970s, it has been transformed from a bare mountain into a green mountain due to a greening project.

☐ Case Providers and Contacts

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Korea Report 4

The Green Curtain and Marine Ecology Purification

□Abstract

Byeokbang Elementary School is implementing various activities for the conservation of terrestrial and marine ecosystems by operating public contests such as a carbon-neutral model school in 2021 and an eco-environmental future school in 2022.

At the center of the activity is the GCO environment club, which is in its third year, and has been leading land and sea-oriented activities every year.

First, education through the creation of green curtains can contribute to indoor temperature control through summer plants and save energy by planting plants that can grow in the form of vines, such as beans, peas, and sponge cucumber, so that they can grow up to the classroom window. The green curtains activity is open to anyone over the age of 8, and is taught in connection with the science department to learn about automatic watering and the growth of each type of plant.

Next, the marine ecosystem purification activity utilizes the characteristics of Tongyeong, which has Hallyeohaesang National Park, and has been continuously cleaning up Yeondaedo, Manjido, Saryangdo in 2020, Hansando in 2021, and Bijindo in 2022. Through analysis of the composition of marine debris, interest in microplastics can lead to activities that directly collect and observe microplastics.

□Keywords

Green Curtain, Marine Ecology, Terrestrial Ecology, Microplastic, Energy Reduction

□Learning Goals

1. Understand what green curtains are and learn about the types of plants used to make green curtains.
2. Observe the growth process of the green curtain and analyze the light-shielding effect and energy saving effect using the green curtain.
3. Feel the seriousness of the marine debris problem through marine ecosystem (island) purification activities.
4. Feel the seriousness of the microplastic problem through microplastic collection and observation activities.

□Activity Process

I. Activity Introduction

Activity 1 : Preparing the green curtain

Purpose : Decide where to install the green curtain, plant vines and plants, and start creating the green curtain.

Duration : 3 months (April-July/August) Summer time

Materials :

Plant seeds, wires, large pots, pollinators (automatic watering, etc.)

Preparation :

1. Planting plant seeds (beans, peas, sponge cucumbers, etc)



2. Install wires(to the roof or wanted height)



3. Watering and growing process observation



<Precautions>

- A. Effectively supply moisture necessary for the growth process of plants.
(Cultivation of crops by plant type, season and weather)
- B. Do not touch and damage the plant.
- C. Do not play around plants.

4. Green curtain shading effect and energy saving effect



Activity 2 : Marine Ecology (Island) Purification

Purpose: Recognize that marine debris is increasing and understand its urgency through storytelling fairy tales, purification activities, and microplastic collection activities on various islands in Hallyeohaesang National Park.

Duration : 2 weeks

Materials : Tongs, Marine garbage disposal bag, gloves, net, etc

Preparation :

Storytelling for Marine Ecology Problems' urgency

Establish a need to solve the marine ecology problem through fairy tale stories



2. Prepare marine ecosystem purification activities for each group.

3. Separate areas for each group and carry out cleaning activities.

2020(Salyangdo, Manjido, Yeondaedo)



2021 (Hansando)



2022 (Bijindo)



<Precaution>

A. At sea, do not go too close to the shore.

B. Always be careful with the glass in between the marine debris and use tongs to collect the garbage.

C. Do not engage in individual activities, but form a group to carry out activities together and pay attention to safety.

II. Advanced Activity

Activity 3 : Marine microplastic collection and observation

Duration : 20 mins.

Material : nets, observing loupe, etc

Preparation :

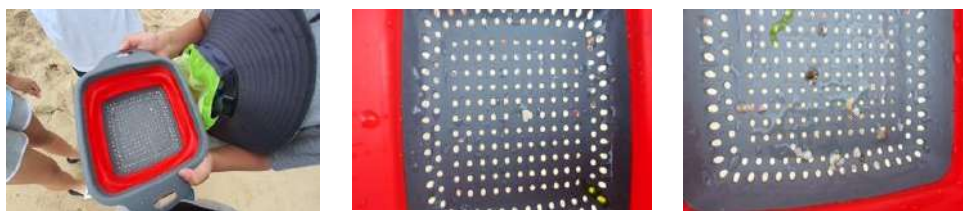
1. Distribute nets and prepare for microplastic observation in marine debris.



2. Microplastics are collected from marine debris and marine ecosystems.



3. Observe microplastics and realize the seriousness of marine ecosystem problems.



□Main Characteristics

1. Green curtain education: Not only can you observe the growth process of various plants vividly, but it can also be used as a pedagogical opportunity for play and eco-environment education using the green tunnel created by adjusting the angle of the green curtain.
2. Marine Ecosystem Purification Activities: Through various island purification activities in Hallyeohaesang National Park every year, sustainable ecosystem protection activities can be practiced and take the lead in ecosystem protection campaigns linked with local communities.
3. Education on the use of microplastics: If education on microplastics is carried out in connection with marine ecosystem purification activities, it is possible to directly collect, observe, feel and lead in solving the problems of microplastics, which account for a large proportion of marine debris.

□References

None

□Institution Introduction

Byeokbang Elementary School, located in Tongyeong city, Gyeongsangnam Province in the Republic of Korea, is a school with a deep history that celebrated its 100th anniversary this year. From 2020, it started operating the school with eco-environmental education as its main business. By operating projects such as Future School, it is equipped with infrastructure for ecological environment education such as creating an ecological pond, green curtains, and ecological playgrounds. Nearby, there are conditions to conduct ecological environment education such as Tongyeong RCE Ceztra Forest and Hallyeohaesang National Park. The GCO environmental club, which is leading the eco-environmental education of Byeokbang Elementary School, is celebrating its third year since its formation in 2020, and won the Vina Enige Blue Sky Environmental Speech Contest in 2020, the Minister of Environment designated excellent environmental club in 2021, and Gyeongnam in 2022. It is achieving achievements such as winning the Creative Talent Award at the Science Club Presentation Contest and advancing into the national competition.

☐ Case Providers and Contacts

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Korea Report 5

Memories of Bamseom, Stories of the Forest that Grows Trees

□Abstract

Ramsar wetlands are international wetlands of importance as waterfowl habitats. The only Ramsar wetland in Seoul is Mapo Bamseom Island, retaining its natural integrity in the city of Seoul.

At Soongmoon Middle School, students learn the history and environment of Bamseom Island and conducts species monitoring. In addition, they monitor species inside the school, attaches QR nametags to plants, and increases environmental sensitivity with the school's online forest game.

As a result of the observation of Bamseom Island, the performance of 'Memories of Bamseom' was artistically promoted to the residents of Mapo-gu by busking and playing the sound of nature. The proposal of Bamseom's environmental protection policy was delivered to the Mapo-gu Office through a survey for residents and youth. It is a program completed by participating in local policy proposals to understand, observe, and protect the environment in the area where we live.

□Keywords

Ramsar Wetlands, Seoul Bamseom, Species monitoring, Busking, Survey, Policy Proposal

□Learning Goals

1. Understand human activity's impact on wetlands
2. Analyze the social effects and changes of Ramsar Wetlands and Bamseom's environment
3. Advertise Bamseom protection methods to residents and present opinions to regional self-governing bodies.

□Activity Process

I. Understanding the Activity

Activity 1 : Understanding the Ramsar Wetlands and Bamseom

Purpose: Understanding Mapo Bamseom, which is a Ramsar Wetland

Duration: 30 min.

Materials: Laptop, beam projector, course slideshow

Proceedings

1. Learn the definition of a wetland
2. Understand the origins, backgrounds, and significance of the Ramsar Treaty.
3. Understand safety precautions when visiting wetlands
 - A. Wear long-sleeved, natural dirt-colored shirts
 - B. Be aware of mosquitos
 - C. Keep voices low
 - D. Do not dispose garbage in the wetland park

*서울 마포의 밤섬은 람사르습지(2012년) 입니다.



Activity 2 : Finding Records of Bamseom Wetland

Purpose: Understand the impacts of human activity on wetlands

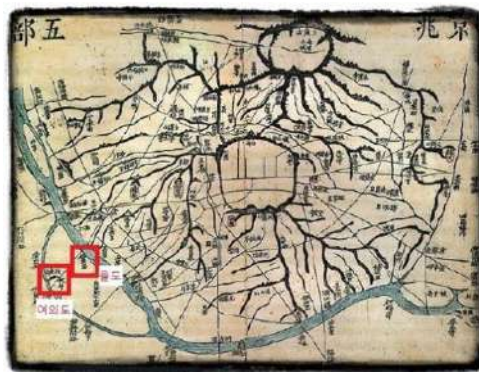
Duration: 60 mins

Materials: Phone, Laptop, Book, Internet connection

Proceedings

1. Find Bamseom's history and environmental data through books and the internet
2. Read Jeong Yak-yong's poem "Ode to Yongsan" to understand Bamseom's history
3. Understand the history of Bamseom explosion and forceful eviction of residents in 1962 for Yeoyeuido landfill.
4. Read Bamseom record books with Bamseom's current appearances and watch the movie "Kim's Drifting Diary"

*서울 밤섬의 유래



하일용산잡시(夏日龍山雜詩)
정약용

목동 첫대 한 가락이 서쪽에서 들리는데
밤섬이라 물안개가 버들가지에 이어져
보드라운 털 짐승 무리 지어 풀 뜯는데
어인 일로 조선땅에 양이 없다 일렀던고
고깃배 저물녘에 버들 가에 매였다가
한강 어귀 밀물 들자 행주로 건너가네
이 노인 그물 치는 그곳을 구경하려면
황혼 무렵 모를지기 읍청루에 올라야지

II. Advanced Activity

Activity 3 : Bamseom Exploration and Species Monitoring

Duration: 240 mins.

Materials: Botanical encyclopedia, writing utensils, paper, phone, tablet, Naturing (Recording App)

Proceedings

1. Understand safety precautions of wetland exploration
2. Record photographs and locations of observed species based on the wetland map
3. Be respectful of the descendants of Bamseom during exploration processes

*습지 탐사에는 많은 준비가 필요합니다. 특히 안전이요.



Activity 4 : Monitoring species in the school forest

Duration: 240 min

Material: Botanical encyclopedia, writing utensils, paper, phone, tablet, Naturing (recording app)

Proceedings

1. Follow forest etiquettes when entering the school forest
2. Distribute forest school map and record the location and photographs of observed species.
3. Design the observed species into characters, emphasizing their characteristics
4. Make the observed species' information into a QR code and attach them



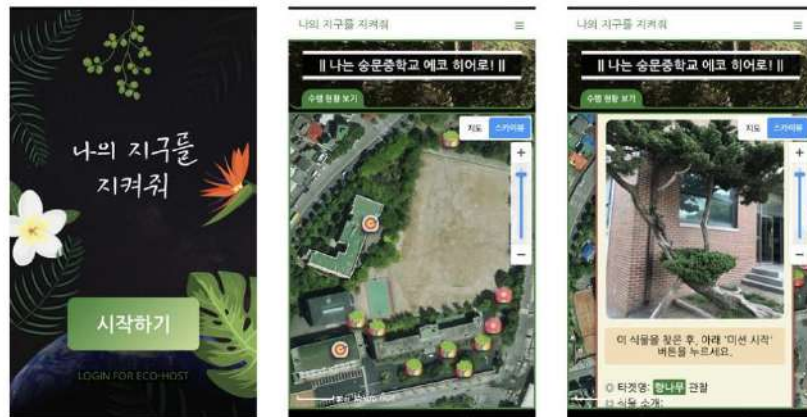
Activity 5 : Online Game Learning

Duration: 60 mins

Materials: Phone, tablet, Savemyearth.kr (recoding app)

Proceedings

1. Move to 10 mission locations by two-people teams
2. Thoroughly observe, record, and appreciate all missions
3. Record the individual reflections of changes in environmental sensitivity.



Activity 6 : Community Mapping

Time: 60 mins.

Material : Phone, tablet, Savemyearth.kr (recording app)

Proceedings

1. Divide into groups for each observing locations in the school forest
2. Record the species monitoring results on vworld.kr platform
3. Explore the data recorded by students nationwide

업로드방법



< 콘텐츠 위치등록 클릭 >

III. Expansion activity

Activity 7 : "Memories of Bamseom" Busking Performance

Duration: 60 mins

Materials: Instruments of nature

Preparation:

1. Practice with instruments, how to express the sounds one heard from observing species at Bamseom
2. Proceed with the "Memories of Bamseom" event in the Mapo Region to advertise the sounds of Bamseom to residents



Activity 8 : Bamseom Protection Survey

Duration: 60 mins

Materials: Binoculars, avians document files, writing utensils, paper

Preparation:

1. Explore ways for Bamseom to be closer with the youth and residents of Mapo
2. Create survey questions on methods to observe Bamseom or to protect wetlands
3. Share the survey through Google Sheets and on multiple social media platforms to encourage participation
4. Analyze the survey results by the youth and residents



Activity 9 : Policy Proposal on Bamseom Protection

Duration: 60 mins.

Material: Number board, Aviary encyclopedia

Preparation:

1. Make the survey results into an infographic
2. Hold a campaign at local events to raise awareness about Bamseom protection
3. Propose the Bamseom protection methods and survey results to the Mapo District Office.



□ Main Characteristics

1. Ramsar Wetlands: Understand the responsibilities and roles involved in Ramsar Wetlands conservation activities and participate in the process as local citizens.
2. Species Monitoring: Continue to participate in the basic research process to preserve the environment, society and economy in the region through the process of monitoring and recording the local environment.
3. Busking performance: Consider how to deliver environmental art that is created while thinking about the relationship with the surrounding environment.
4. Environmental protection policy proposal: To grow as a citizen who can record changes in the environment, discover problems, and suggest the role of the community and society to local governments for solutions.

□ References

None

□ Institution Introduction



Soongmoon Middle School(崇文中學校) located in Mapo, Seoul since 1906. now 540 students are attending. The 1st school goals are loyalty, intelligence, and kindness. The 2nd goals of environmental education is to be good people in earth. It educates students to prepare for a responsible and economic future by using clean resources and energy for the sustainability of the environment.

Supporting Institutions

Mapo Art Center : Cooperation with Busking Performance

Mapo Culture Center: Cooperation with the Bamseom Displaced citizens visitation

Mapo District Office) : Networking for communicating Bamseom protection survey results

□ Case Providers and Contacts

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