

# For Our Common Future





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Environmental Education Book for Children in China, Japan and Korea



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# Table of Contents

About ESD. ....	P1
To Create Our Better Future. ....	P2~P4
Let's Think from Various Angles. ....	P5~P8
Let's Think from Many Angles. ....	P9~P12
Let's Act for the Future. ....	P13~P16
Let's Be Conscious of Connections. ....	P17~P20
Let's Cooperate with a Variety of People. ....	P21~P24
Let's Discuss and Think. ....	P25~P28
Let's Start from What We Can Do. ....	P29~P32
Designing Our Future. ....	P33~P36
About Tripartite Environment Ministers Meeting among China, Japan and Korea. ....	P37

# About ESD

ESD stands for “Education for Sustainable Development” and its purpose is “to ensure that anyone can benefit from quality education, and that the principles, values, and actions necessary for promoting sustainable development are incorporated in all forms of education and learning environments, thus bringing about a revolution of action for realizing a sustainable future with respect to the environment, economy, and society.”(Interministerial Meeting on the “United Nations Decade of Education for Sustainable Development,”2006)

To put it more simply, it aims “to enable all people to get a better education in every place to learn what promises, ways of feeling and thinking, behaviors are required so that human beings, other creatures and the global environment can sustain in the future. Also, as a result of learning, it aims to change actions in practice to achieve a sustainable future in terms of environment, economy and society.”

The report compiled by Jpan’s National Institute for Educational Policy Research in 2012 puts it, “to find problems in building sustainable society and to gain skills and attitudes necessary to solve them.”

To that end, toward sustainable society, namely, diversity, reciprocity, finiteness, fairness, cooperation, responsibility should be focused. In the report, seven skills and attitudes to be emphasized in teaching by approaches of ESD are clarified- critical thinking skills, skills to create plans while envisioning the future, multifaceted and integrative thinking skills, communication skills, cooperative attitude, attitude of respect for connections, and attitude of active participation.

The Earth is the only one and can’t be replaced. If this situation goes on, however, human beings and creatures at itself might be ruined someday. Everything influences and relates to each other, and is finite. It is necessary to have a strong will to build a society where people utilize waste as resources effectively (sound material-cycle society) or equal and fair society, by tackling the problems explained in these readers. And you need to live in that society with social responsibility by cooperating with others.

# To Create Our Better Future

The Earth is the only one and can't be replaced. There are a wide environmental range and various living creatures. In nature, the Earth can heal itself. However, human activities exceeding its recovery capability have caused many environmental problems. What should be done to solve these problems, make the Earth a better place and create the better future?

We need to gain an in-depth understanding of the Earth and the skills and attitudes to solve the environmental problems. Then, what skills and attitudes are required in particular? Below you will find seven examples.

## 1. Critical thinking ability

It is essential to think things thoroughly to distinguish what is important. Be careful not to be misled by the surface, and try to focus on what is really important. When you think of the environment, you need to look at the things while keeping in mind the creatures – in other words, life.

Let's examine if there lies any problem in what we have been considered as normal. The causes of environmental issues come from our way of life and social structure. Therefore, it is very important to review our way of life and social structure to see if there lies any problem.

Furthermore, it is required to question what we have heard, read and researched to see if the information is truly correct. Even when it's correct, check if it doesn't lack anything. We can't make a right judgement based on any incorrect information.



## 2. Ability to think in multifaceted and comprehensive ways

If you look at things from different angles, you can find a new vision and discovery. For example, cabbage butterflies gathering in the cabbage field look very cute and lovely. However, they are troublesome pests to the farmers. So, it is very important to research and think from various angles and standpoints.

Let's take the forest as an example. You can not get its whole picture however hard you may examine a sole tree. More precisely, it is difficult to grasp the relation and connections of the creatures living in the forest unless you consider the forest as a whole, not just focusing on the trees. If you want to research about the forest, you need to start looking at the forest as a whole, comprehensively.

Environmental issues arise as a result of combination of many complex issues. Therefore, it is important to consider them from not only one but various angles, while looking at the whole picture.



### 3. Ability to create plans while envisioning the future

Are these various problems occurring today going to be improved or worsened? It is vital to consider how they influence the future, to plan countermeasures and to create ideas for an improvement. In order to do that, try to do things in a systematic manner with the future plan in everyday life to nurture forecasting and planning skills.

In addition to thinking how we can improve the current status, it is important to envision the ideal environment in the future and take measures to achieve it. The future is in your hand – not adults but children will create it.



### 4. Attitude to respect connections

Our life is connected to and supported by many people and the nature. Our food is a blessing which creatures provide us. Thanks to their life, we can stay alive. Clean air and water which support every creature's life and health is also a blessing from the Earth. Energy and various products that we use in everyday life reach us by the hands of many people. So, it is important to take an interest

in what kind of things are connected to our life. Then, it will lead to a solution for various issues to cherish the connections.



It is not enough to cherish the connection to the creatures or the natural environment. It is also important to respect the connection among us, human beings. If we can cherish the current connections, we will be able to cooperate with the people we will encounter in the near future.

### 5. Attitude to cooperate with other people

However hard you may try, it is impossible to solve the very complex issues by yourself. There is often a saying, "If one hundred people take one step, it is better than one person take one hundred steps." As it goes, it is important that many people make environmentally-friendly efforts in their life, even though they can do it just a little. It means many people need to cooperate and make efforts toward the same goal. Not just on the environmental issues but also in everyday life, let's try to cooperate with others.

In addition, China, Japan and Korea, located in the same East Asia, need to cooperate to solve the environmental issues in order to pursue the benefits of the three countries and the happiness of the people and creatures living in the area.



## 6. Ability to communicate

It is necessary to understand the cause of the problem to understand the thoughts and hopes of those who are involved in it. It requires communication skills. It is essential to convey what we think and hope each other for mutual understanding to cooperate with others. For this purpose, communication skills are vital.

Let's go beyond sharing thoughts and hopes each other and try your best to find some new ideas through communication or create new ideas with those who you communicate with. By acquiring such communication skills, you would be able to come up with new measures to solve the issues which look perpetual at the moment.



## 7. Attitude to participate willingly



Even if there are some ideas and desires you want to create a better future and you come up with the ideas to solve the issues, you can't really solve them unless you do something to conserve the environment. It is important to think what would be your role in solving these issues and act positively. Your action is the first step. Then invite your friends to participate in the action and cooperate with them.

**This book aims to help nurture these seven skills introduced so far. It is not just for reading. Rather, please utilize it for your study, thinking and discussion.**

# Let's Think from Various Angles

## - Let's Think About Biodiversity -

Critical Thinking Skills

Biodiversity



Since creatures were born on earth till now, creatures have been evolved in adopting to various lands and climates. As a result, the environment where various creatures live has been created. A such state in which various creatures live balancing each other is called "biodiversity."

### What's Biodiversity?

There are various types of natural environments.



Beech forest (Photo : Toshitaka Morita)



Shimanto River (Photo : Kaoruko Kusano)



Kushiro Shitsugen Wetland (Photo : Toshitaka Morita)



Coral reef (Photo : Yasuaki Kagi)

In these natural environments, exists of species.



Relative of bleeding fairy helmet (Photo : Toshitaka Morita)



Pollination by honey bees (Photo : Yoshiharu Nishiguchi)



Green turtle and bigeye kingfish (Photo : Yasuaki Kagi)



Ezo brown bear (Photo : Yukihiko Fukuda)

Even they belong to the same species, each one is unique in shape, pattern and so on.



Clams (Photo by Shin Fuwa)



Asian ladybird beetles (Photo : Noboru Miki)



Find out as many species of creatures as possible around you and write them down in the box below.

Human life is deeply related to the factors in many of causing the extinction of other creatures. Let's learn five major causes.

### Development

The places which used to be the habitats for creatures have been destroyed. Development is necessary for our life. However, the habitats for many animals and plants have been lost due to the development without enough plan or consideration.



Himesayuri (*Lilium rubellum*) can be found in a limited area.  
(Photo : Toshitaka Morita)

### Lack of management / Damage by animal

Some woodlands like coppices are poorly managed, which leads to the decrease in the number of creatures living there. Also, which has increased eating up trees and grasses, which may result in natural destruction or habitat loss of other creatures.



Deer eating the bark off of the trees.  
(Photo : Yukihiro Fukuda)

### Chemicals

Although not well understood, use of chemicals could have impacts on the nature and creatures while we are not aware of it.



Chemicals flowing down the land.  
(Photo : Akiko Okayama)

### Foreign species

The creatures brought from other countries or areas (foreign species) eat or deprive the habitat of the creatures that have been originally lived in the area (indigenous species).



The number of raccoons is increasing.  
(Photo : Masaki Yamashita)

### Global environmental change

Some creatures cannot live only in cold climates like before due to the phenomena caused by human activities such as global warming.



The habitat for grouse which lives in a high mountain may become consumption.  
(Photo : Toshitaka Morita)

## Examples of the species at risk of extinction: Crested ibis and White-bellied woodpecker

### Crested ibis

They live in Japan and China. Once they were considered to be extinct, but later 7 ibises were found in China. The project to reintroduction them to the wild has been proceeded since then.



Crested ibis  
(Photo : Ministry of the Environment)

### White-bellied woodpecker

The birds used to live in Tsushima, Japan. They became extinct in 1920 in Japan. Today, only a small number live in the northern part of the Korean Peninsula.



White-bellied woodpecker  
(Photo: Korea Open Government License) 

## Examples of the animals and plants threatening other species: Largemouth bass, Water lettuce

### Largemouth bass

Carnivore fish native to North America, which was introduced for sport-fishing. They eat or drive away the fish which has been originally lived there.



Largemouth bass  
(Photo : Ministry of the Environment)

### Water lettuce

They cover up the water surface, which deprives habitat for other creatures.



Water lettuce (Photo : Ministry of the Environment)



Are there any animals or plants that cause problems like the above examples in the area you live in? Let's find out.



Work: Find out bad effects of the following behaviors and think what we should do.

I felt pity for my pet gold fish as the tank was so small. So I released it to the park pond.

Bad effects

Countermeasures



My important clothes got dirty, so I washed them with lots of detergent.

Bad effects

Countermeasures



Now I know that some creatures cannot live in certain areas regardless of their cuteness.

Let's work on something we can actually do for other creatures.



# Let's Think from Many Angles

## - About Air Pollution -

Ability to think in multifaceted and comprehensive ways

Air



Air is very important for our life. Air above ground, technically called atmosphere, is essential for creatures to live. However, there have been various problems relating to air, which is called 'air pollution.'



Bronze statue is becoming melted  
(Photo : Japan Environmental Education Forum)



Air Contamination  
(Photo : Ministry of the Environment)



Clear and sunny weather  
(Photo : Ministry of the Environment)

Some plants in the forest are dead and some buildings are melted affected by acid rain. Dust and Sandstorms in Eastern Asia is flung up into the air by a strong wind and falls over a wide area. Tiny particles in the air may harm the condition of lung and may cause cancer and asthma.

There are many troubles...It looks terrible.



Why do these problems happen?

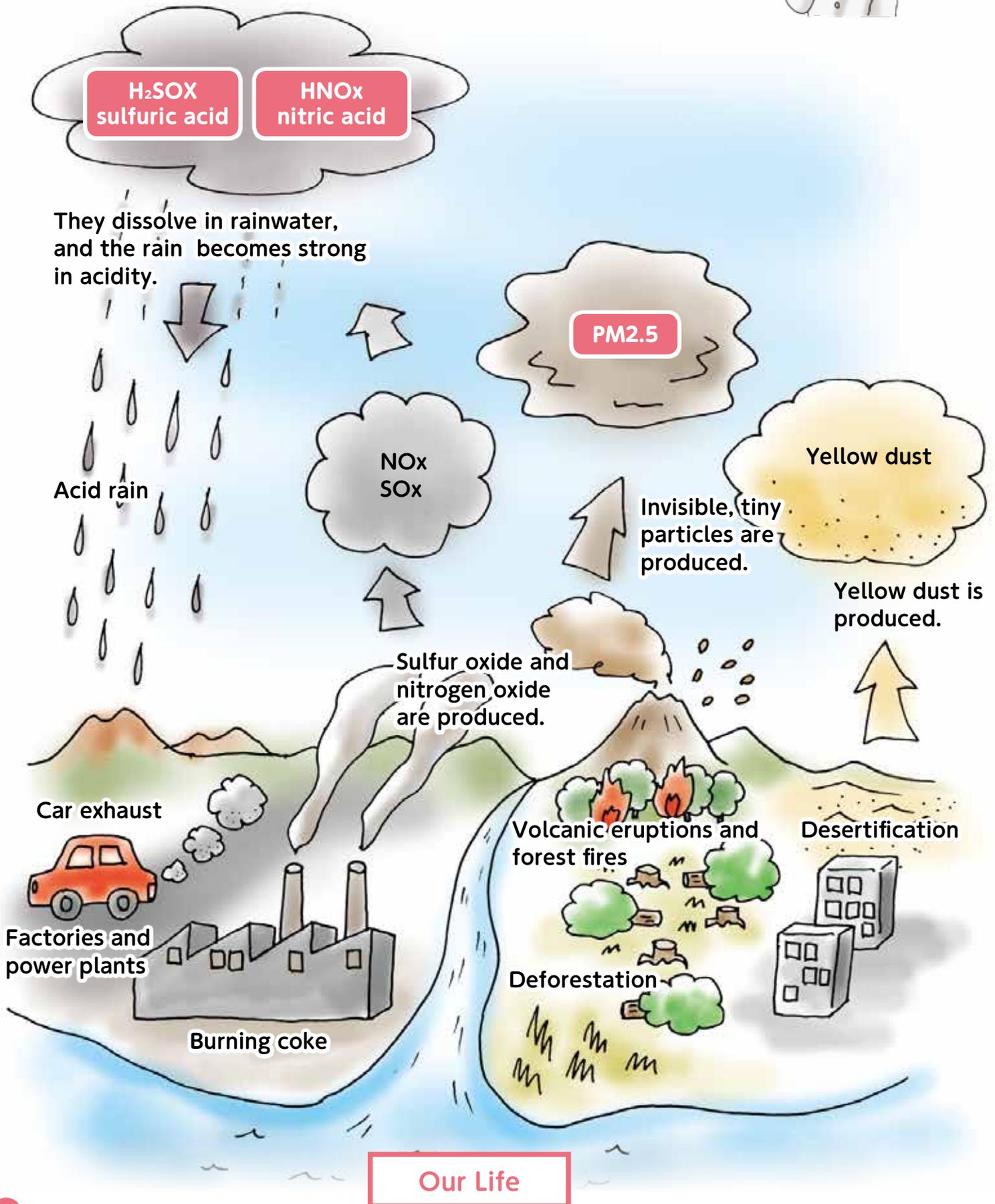


What could be the cause of these problems? Let's check them out considering a relationship with our life.

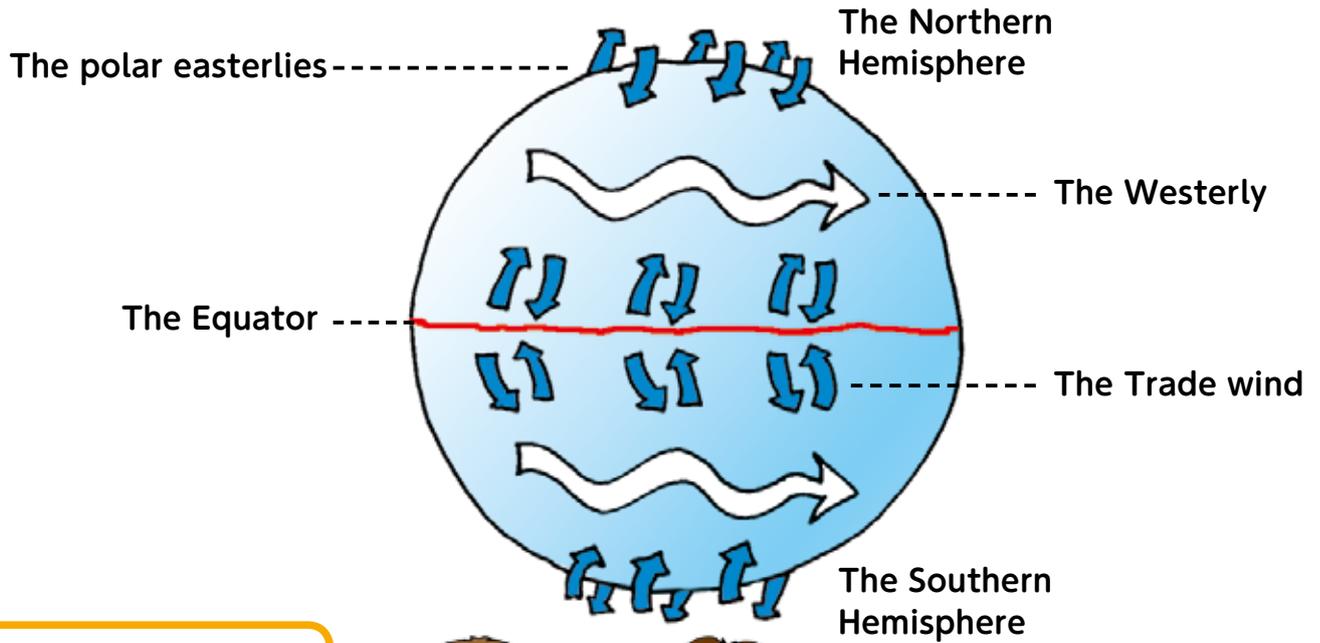
# Relation between Air Pollution and Our Life



Some of the causes of air pollution are natural such as volcanic eruption, but most of them result from human activities. We need to make efforts to reduce air pollution.



# atmospheric circulation



As there are many type of winds in the earth, if the air is polluted, the wind can blow it away.



But that doesn't mean the polluted air is purified, right?



Who has to do what in order to solve air pollution?  
Write down your ideas in the box below.



## Let's come up with lots of ideas to solve air pollution.



Let's discuss what you wrote down on the preceding page with your neighbor, group and family. Let's take notes if they have new, different ideas. Let's think what kinds of methods are useful to improve air pollution.

Actors	What can be done (solutions)
You (your family members)	
Schoolmates	
Car drivers	
Your town	
Factories, power plants et al.	
Country (government)	
Neighboring countries	

Countries participating in EANET (13 countries)



It is important that various countries cooperate to reduce air pollution. In East Asia, there is "Acid Deposition Monitoring Network in East Asia (EANET)" which monitors the condition of air pollution.



Source: EANET

# Let's Act for the Future

## - Let's solve the waste problem -

Ability to create Plans while  
Envisioning the Future

Waste, 3Rs and Material-cycle Society



Let's imagine our future. What will your town be like? What will your country be like? And how about the earth? Let's think it over through the waste problem.

Let's think about the garbage which we are currently producing.

How to  
research



Let's research the characteristics of garbage.

- ① Collect various kinds of garbage (e.g. the rind of a fruit or vegetable, leftover food, paper, fallen leaves, bags of candies and snacks, glass bottles, cans etc.).
- ② Divide a farm into sections 30-40 cm wide per each kind of garbage by using ropes.
- ③ Dig a hole in each section to bury each kind of garbage, cover it with soil and put up signs.
- ④ Dig the soil and observe what happened one week later and two weeks later. Research how they have changed –what has disappeared and what's left as it was?



What kind of garbage disappeared and what kind of garbage is left as it was? Let's think how long the left garbage will last as it is? How do you see change after burying various kinds of garbage?



What kind of actions do you and your family take to reduce wastes?  
(Please check the left box corresponding to your selection)

- Do you eat up all your meals?
- Do you care about best before dates and cook the food before it goes bad?
- Do you buy only what you need without buying unnecessary things?
- Do you use your bags when you buy anything?
- Do you try to buy things that can be used over a long time rather than disposable things?
- Do you properly dispose plastic bottles, cans and paper as recyclables?
- Do you give things that can still be used to anyone who need them or sell them at the bazaar?
- Do you repair broken things so you can continue using?
- Do you make what you want out of what you have already? -e.g. Making crafts using empty boxes, making something out of the clothes that became too small for you to wear, or cooking wisely by utilizing leftover vegetables etc.
- What other actions do you take? \_\_\_\_\_



## If the amount of waste continues to increase,



Outer central breakwater landfill site in Tokyo  
(Photo : Masahiro Takahashi)

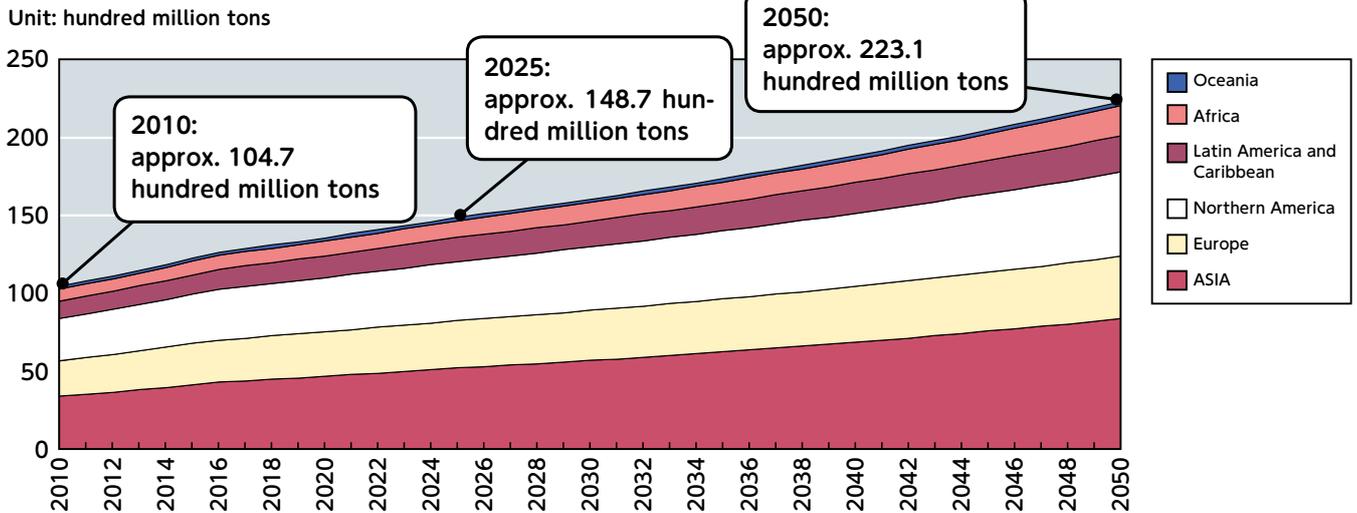


Final disposal site in Jakarta, Indonesia (Photo : Japan Environmental Education Forum)

Final disposal site where the collected wastes are disposed at last. The amount of waste is also predicted to increase more in future. Especially developing countries have serious problems: the amount of waste increases along with rising populations and economic growth, while the capacity of dumping sites is limited.

### The amount of waste in the world (forecast until 2050)

Source: Research Institute of Solid Waste Management Engineering  
"Estimation of the worldwide disposed waste volume and future prediction2011(Revised edition)"



The amount of waste in the world is expected to become 223.1 hundred million tons by 2050.



It's terrible that the amount of waste will be doubled in 40 years.



I think everyone in the world needs to make efforts to reduce wastes.



## Ingenuous way to reduce wastes

3 actions  
“3R”



- ① Reduce ..... Reduce wastes
- ② Reuse ..... Use things again
- ③ Recycle ..... Utilize things as materials again

It is called 3Rs as the capital letter of each of these three actions is R.

Recently, the idea of 5Rs is spreading, with two more actions added.

- ④ Refuse ..... Do not receive unnecessary things
- ⑤ Repair ..... Repair things to use them

Like this, reducing wastes and utilizing them as materials will help prevent the wastes to increase.

I think it's also important to make rules or systems not to generate wastes.



It's important to produce eco-friendly products and producing methods which won't generate waste as well.



Let's choose and buy eco-friendly products which don't generate waste so much.



### Efforts by cities, towns and villages

#### Zero Emission

Aiming zero waste is called “zero emission.” Some of the cities, towns and villages throughout the country aim to reduce the amount of final land-fill waste to zero by reducing the generation of waste or recycling.



Separate collection  
(Photo: Japan Environmental Education Forum)



Collection of kitchen garbage(Recycle)  
(Photo: Masahiro Takahashi)

What kind of actions does your city, town or village take to reduce wastes?

## Let's think about what we can do.

Let's imagine a society free from the waste problem. To create such a society, let's plan what kind of actions you can start by when.



What kind of actions can we take to reduce household waste? In what order and by when they should be done? Let's make a goal first and consider it backwards from the future.

Your goal: \_\_\_\_\_

[example] Goal : I will start reducing the kitchen garbage by the beginning of the next quarter.

	What action? (example)	By when? (example)	What action?	By when?
Review	If there's any problem, ask someone or research for its solution and get the knack.	By the beginning of the next quarter		
Start	Start recycling of kitchen waste (composting).	By the beginning of the next month		
Preparation	Decide the place and prepare tools if necessary.	By the end of the week after the next		
Cooperator(s)	Explain to your family and ask for their cooperation.	By the end of next week		
Methods	Ask advice on or research recycling of kitchen waste methods (composting).	By the end of this week		
Current situation survey	Segregate kitchen waste and check its amount.	Just now		

It is important to make a plan, act and review the plan occasionally. Even if the goal looks a bit difficult, you can definitely achieve it by making a plan backwards from the future.

The same thing can be said about your future. If you can create a plan to work backwards from the future, you can act for your dream.



# Let's Be Conscious of Connections

- Let's Think About Connections Related to Our Life -

Attitude of  
Respect for  
Connections

Lifestyle

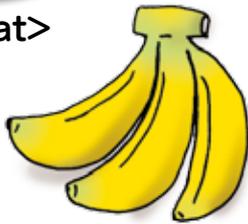


Our life relies on the various connections. Let's think about "common" things in our daily life well again - "where they come from and where they will go."

## Food

Let's think where the food you eat come from.

<To eat>

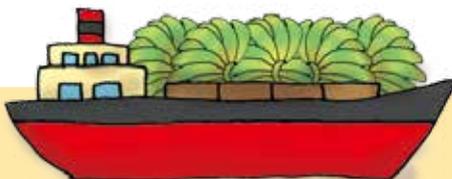


Where are they produced? How are they transported?



Production areas :

How to transport :



Production areas :

How to transport :



Bananas travel quite a long way till they reach us.

Aren't there any problems? In order to transport them, ships, cars and planes are used, so energy such as gasoline is necessary. The distance that the food is transported is called "food miles" and less food miles are better for the environment.

# Housing

Let's imagine where the materials used in your daily life come from.

<To reside>



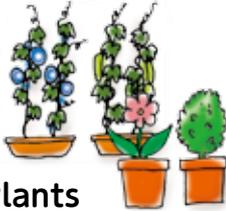
Lumber



Your house



Building material  
such as concrete



Plants



Light, Heating  
and water



Household goods

- Some energy (e.g. petroleum and coal) used in the households are sourced from distant countries.
- Building new houses is not everything. Renovating houses to make them comfortable to live in is another way.



Let's check how far the materials used as pillars or walls in your house have been traveled.

## About "Mottainai"

Ms Wangari Maathai, who received the Nobel Peace Prize for the first time in the environmental field in 2004, got to know the word "Mottainai" while visiting Japan. She was impressed to know that this word, "Mottainai" represents 3Rs (Reduce, Reuse, Recycle) in one word as well as the value of life and respect for natural resources of the earth. Then she decided to spread "Mottainai" as a universal term to protect the environment widely across to the world and disseminated the spirit of "Mottainai" to the people in the world including Asia.

MOTTAINAI : <http://mottainai.info/maathai/>

# Clothing

Let's imagine where the clothes you're wearing now came from and where they will go.



<To wear>



Wool, cotton / linen, silk



Sewing plant



Shirt



Somebody else will wear it. (Reuse)



Changed into different materials (Recycle)

- Some materials are produced in distant countries or places.
- Some of them are produced as products in plants in the foreign countries.
- Some of them are reused or recycled when they become out of use.



Let's check where the clothes you're wearing now will go when they become out of use.

## Initiative to “Change How to Live by Everyone” decided by the United Nations\*

In 2012, during the meeting of the United Nations where the world nations decide the commitments for the earth, they decided to produce the products that would not destruct the environment as much as possible and to buy and use such products. In order to do so, they decided to disseminate the initiative to change the way of living in 10 years. It communicates energy-saving technologies and the way of living which would not waste resources to people around the world, and anyone can join it to preserve the earth environment. How our way of living will be improved in 2022?



\*official name:  
“10-Year Framework of Programmes on Sustainable Consumption and Production Patterns”

## The case of LED bulbs

The prices of LED bulbs, which are energy-saving products, are high. More people, however, become to buy LED bulbs for their long-lastingness and people's increased awareness on energy-saving. As a consequence, the prices of LED bulbs went down and more people become to buy them. In this way, if everyone buy environmentally-friendly products, it will better the society.



LED bulb (Photo : Japan Environmental Education Forum)



Let's think what to keep in mind when you do shopping. Apply the products below.

e.g. socks, detergent, petroleum, onions, cardboard, toilet paper, LED bulbs, sweets, rice, tomatoes, toothpaste, coffee, books, newspaper

Easy to repair and wash	Less packaging	Refillable
Easy to reuse and recycle	Produced in your neighborhood	Not available unless bought from foreign countries
Energy-saving	Recycled	Others/Things to consider

# Let's Cooperate with a Variety of People

## - Let's Work Together to Reduce Marine Litter -

Attitude to cooperate with other people

Marine debris



A variety of things are washed ashore. Some of them are natural things such as shells and driftwood. On the other hand, artificial things such as plastic bottles, styrofoam, glass bottles and cans are called "marine litter," which stick out a mile. We need to take actions to reduce these kinds of litter, as they cause various problems.

### What kind of litter are drifted to the seashore?

Plastic bottle



Fishing net



A lot of litters drifted to the seashore

Syringe



Plastic container



I didn't know there are so much litter on the shore!



It's sad the beach is dirty.



Photo : Umigomi.com <http://www.umigomi.com/>



How do these kinds of litter affect their surroundings? Also, let's think where do you think the litter shown above come from?

## What impacts does marine litter have?

### Impact on landscape and leisure

- \* It will impair the beautiful landscape.
- \* It will disturb sea bathing.

### Impact on fishery and operation of ships

- \* The litter floating or submerged in water will get entangled in fishing nets or be mixed into fish catches.
- \* Marine litter will interrupt safe navigation of ships.

### Impact on our secure life

- \* People might get injured by medical wastes or bits of glass.

### Impact on marine creatures

- \* It might wrap around the marine creatures such as turtles and fish.
- \* Fishes and birds that live in sea or around sea might swallow it by mistake.

I'm surprised to know that there are many other impacts than making the sea and the shore dirty.

I didn't know that it would affect our secure life.

I feel sorry for the creatures suffering from the marine litter.



## Where does marine litter come from?

They will get into the river by wind or rain and finally drift to the seashore.

Litter on the streets or thrown from car windows.

Litter left on the river bed.

Litter spilled out from the outdoor garbage box.



I see that trashes around us can travel to the sea.



## Where does marine litter go?

### Ocean currents around Japan, China and Korea



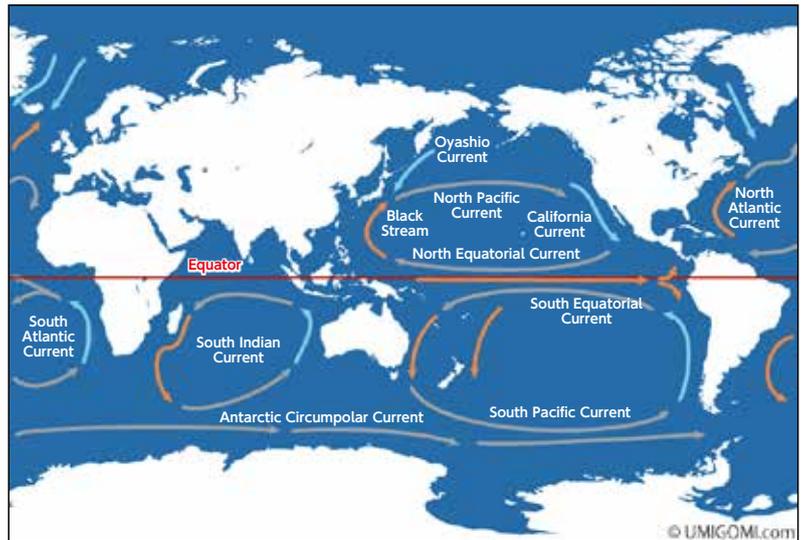
The litter does not disappear after entering the ocean. Once it's get into a ocean current which is a huge flow of seawater, it can be carried all over the world. Therefore, it is important that not a single country but every country in the world cooperate with each other to solve the marine litter problem.

Source: Umigomi.com <http://www.umigomi.com/>

Look at the figures and think what will happen to the litter at point A afterward.



### Ocean currents in the world



Let's think who should do what in order to reduce marine litter.

### Various instances of cooperation

- \* Monetary cooperation: In Kagawa prefecture, Japan, not only the coastal cities, towns and villages but all of the inland cities, towns and villages cooperate in sharing the expenses necessary for the marine litter problem.
- \* Research cooperation: Microplastics, plastics broken into microscopic fragments, have the possibility of being swallowed by the marine creatures and remained in their body. Some researchers study on how this may influence the creatures which have eaten these marine creatures and and the creatures at the higher level of the food chain.

## Let's cooperate with each other to tackle marine litter.

What kinds of cooperation activities are there to solve the marine litter problem?  
Is there anything that we can work together?



We can tell each other not to litter in the sea, mountain, river and the streets.



We can dispose litter properly to prevent the litter around us from becoming the marine litter.



We can cooperate with each other worldwide to prevent the litter from entering the ocean.

“Beach cleanups “are one of the activities to pick up garbage on the beach together.

“International Coastal Cleanup Day” happens on September 22 every year. Let's participate in some of the activities like this.



※Some of the wastes like medical wastes are dangerous. When you find them, pick them up with adults not by yourself!

\* World: Ocean Conservancy

Ocean Conservancy have held an ICC day since 1986.

\*China: Various groups hold an ICC day in coastal areas of China. Please research groups that meet your needs.

\*Japan: JEAN (Japan Environmental Action Network)  
JEAN arrange ICC day in Japan

\*Korea: OSEAN(Our Sea of East AsiaNetwork)  
OSEAN arrange ICC day in Korea.

There is a study to forecast how the marine litter flows to collect it before drifting ashore.



It's difficult to solve problems like this alone. This is why it's important that people from various fields work together.

What actions will you take from now to reduce marine litter?

# Let's Discuss and Think

- Let's Think About Disaster Prevention of Your Town Together -

Ability to Communicate

Disaster Prevention



The damage caused by the Great East Japan Earthquake and the following Tsunami on March 11, 2011 was severe, and there are still lots of missing people and those who live in temporary housings. Besides, various natural disasters have occurred.

Japan



Great East Japan Earthquake  
March, 2011  
(Photo: Institute for safety & disaster preparedness)

China



Heavy rain in Guizhou province, China  
Jun, 2011  
(Source: 新华网)

Korea



Heavy Rain in Seoul city, Korea  
July, 2011  
(Photo: Ministry of Public Safety and Security)

Natural disasters are truly horrible, right?



We can see that similar disasters occur in various countries.

Let's look in the books and on the internet, or interview those who work to protect the safety of the region (e.g. disaster prevention division of the municipal office, municipal disaster prevention centers, fire station, etc.), those who experienced natural disasters in the past, or your family (e.g. grandpa, grandma). Then write what you have gathered.



# Natural Disasters and Damages



There are many types of natural disasters. Those may happen around us. (Some of them does not directly impact our daily life depending on the regions)

## Heavy Snow

It heavily snows once in several years.



Tsunamachi Nakauonuma-gun, Niigata prefecture ,Japan  
(Photo:Tsunamachi)

## Tornado

Increasing in number recently.



Toyohashi city, Aichi prefecture, Japan  
(Photo:Toyohashi city)

## Lightning

It may occur abruptly.



Japan  
(Photo: Tsugio Ebisawa)

## Typhoon

It frequently occurs from September to November



Kyoto Prefecture, Japan  
(Photo: Kyoto Erosion control·Flood control·Disaster prevention Association)

## Flood

It tends to occur when it rains heavily.



Guang'an city, Sichuan Province,China  
(Source: 西部之声宝鸡人民广播电台)

## Landslide

It tends to occur when it rains heavily.



Mt. Choan, Seoul city, Korea  
(Photo: Ministry of Public Safety and Security)

## Volcanic Eruption

It happens quite often in Japan.



Sakurajima, Kagoshima prefecture,Japan  
(Photo:Kimon Berlin)

## Earthquake

It's quite hard to predict.



Wen Chuan city, Sichuan Province, China  
(Source: 人民网图片)

## Tsunami

It tends to occur after big earthquakes.



Minami sanriku-cho, Miyagi prefecture, Japan  
(Photo: Masahiro Takahashi)

(Photo: Ministry of Public Safety and Security "Challenge of disaster prevention 48")

These natural disasters always occur somewhere on the earth. We have to keep facing them while learning from past experiences.

It is extremely difficult to predict when natural disasters happen. In order not to panic whenever natural disasters may occur, it is important to get prepared on a day-to-day basis and discuss with community and family members what to do when disasters happen.



What if natural disasters happen when my family doesn't stay in the same place?



In case of big disasters, it sometimes takes three days until help comes. We must think how our families can survive for three days.

## Let's think of measures against natural disasters.



### Make Rules for Emergencies with Family

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### What to Pack in an Emergency Carry Bag

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What one person can do is small. But if people in the community collaborate, cooperate and help with each other, it will become a great force.



(Photo: Ministry of Public Safety and Security "Challenge of disaster prevention48")



(Photo: Japan RQ Disaster Education Center)



Let's think what kind of cooperation is necessary with the people who live in the area in order to develop a community better prepared for future disasters.

Regardless of region or country, the important thing is to get prepared for emergencies by repeating discussion on disaster prevention with your family and people around you.



# Let's Start from What We Can Do

## - Let's Cool Down The Earth -

Attitude of Active Participation

Global warming

### What's Global Warming?

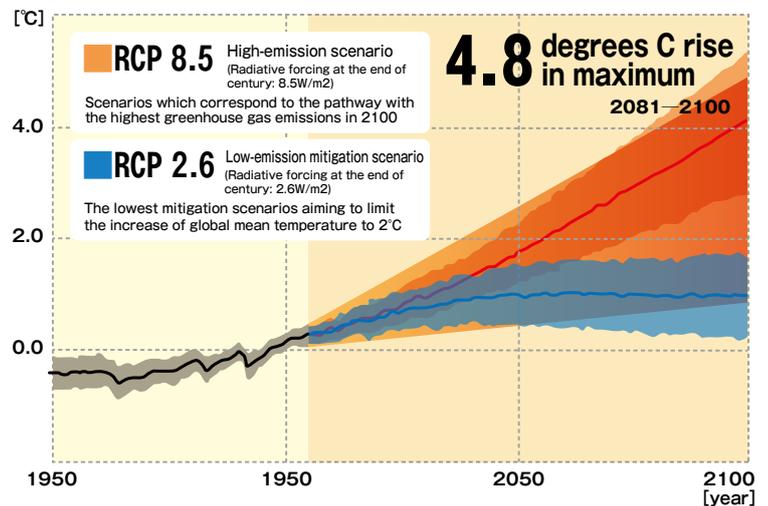
Now, on the earth, due to the increase of greenhouse gas emissions such as CO<sub>2</sub>, the average global temperature has been rising. The temperature rise causes changes in global environment, which impacts creatures and our life. In addition, due to abnormal weather, big typhoons develop and desertification is spreading. If left as it is, the predicted temperature would rise by 4.8 degrees at maximum by 2100.



#### House destroyed in the typhoon



Trujillo, Honduras. After the large scale hurricane Mitch hit. (Photo : courtesy of AYUCA)



#### Projected temperature rise

Source: IPCC Fifth Assessment Report Reference of Japan Center for Climate Change Actions website (<http://www.jccca.org/>)



What happens if the global temperature rises? Let's think about effects other than typhoons and desertification and how to prevent them.



# What kind of influence does Global Warming have?

Antarctic, Arctic and glacial ice melt, and sea level rises.

1978



2008



Himalayan glacier (East Nepal)  
(Photo : courtesy of Cryosphere Research Laboratory, Graduate School of Environmental Studies, Nagoya University)

I see that lots of glacial ice has melted.

Antarctic and Arctic ice also melts and the amount of sea water increases.

If the amount of sea water increases, the sea level will rise. Southern islands and low areas are in danger of becoming submerged.



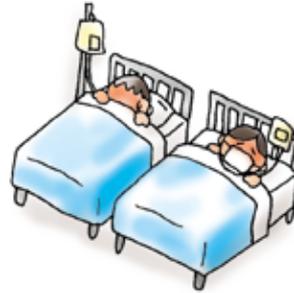
## Impacts on the creatures



Polar bear  
(Photo: USFWS Headquarters)



Coral reef  
(Photo: Yuko Kanakubo)



Chinese anopheles  
(Photo : courtesy of Department of Medical Entomology, National Institute of Infectious Diseases)



It is said that the climate has changed, which impacts lots of animals. I'm worried about the extinction of polar bears and decrease of corals.



I'm so worried that mosquitoes will bring the tropical diseases such as dengue fever and malaria if the global warming continues.

## Measures to Stop Global Warming

Measures to reduce greenhouse gas emissions such as CO<sub>2</sub> causing global warming have been taken around the world.

### Care for the forest



Plants absorb CO<sub>2</sub>.  
(Photo : Masahiro Takahashi)

### Development of energy-saving products



Reduction of energy consumption helps reduce CO<sub>2</sub> emissions.  
(Photo : Japan Environmental Education Forum)

### Waste Reduction / Recycling



Burning garbage will increase CO<sub>2</sub> emissions.  
(Photo : Japan Environmental Education Forum)

### Discussion among representatives from countries



Discussion towards reduction of CO<sub>2</sub> at an international conference  
(Photo : Climate Change Policy Headquarters in city of Yokohama)

## Let's Find Out What Actions We Can Take

In Japan, for example...

In Japan, to reduce CO<sub>2</sub> emissions, various actions are taken under the campaign entitled “Fun to Share.”



“Fun to Share.” It’s the word to encourage people to ‘create a society with less CO<sub>2</sub> emissions by having fun to share the latest tips with each other!’ The idea is to create a society with less CO<sub>2</sub> emissions without sacrificing a happy life.

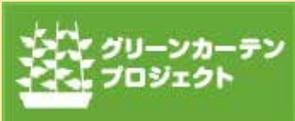
**WARMBIZ**  
+ONE

**COOLBIZ**

“Warm Biz” campaign promotes a lifestyle in which people can stay comfortable in the room where temperature was set in 20 degrees centigrade by air heating. As part of this “Warm Biz” campaign, “Warm Share” suggests people to gather in a warm place, turn the heat off at home and go downtown.



“CO<sub>2</sub> Reduction/Light-Down Campaign” takes place from the summer solstice to July 7. During two hours a night from the summer solstice and July 7, people are encouraged to turn off the lights all together nationwide.



Green Curtain Project involves growing plants such as bitter melon and morning glory at outside a window to block direct sunlight, preventing room temperature getting too high.

These actions promote energy saving,  
which will lead to reduction in CO<sub>2</sub> emissions.



Let's check out and write down any other campaigns or actions that you can join.

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## What we can do?



There are various challenges in order to reduce CO<sub>2</sub> emissions. Write down various actions: What you can do by yourself, with your friends or family, and with the members of a society.

Challenges	Actions
How can we stay warm in the room where temperature was set in 20 degrees centigrade by air heating?	e.g. Put on one more outer wear, everyone stays in the same room and so on.
How can we stay comfortable in the room where temperature was set in 28 degrees centigrade by refrigerated air conditioning?	
What can we do in order not to use too much electricity?	
What should we keep in mind while shopping?	



Write down any other ideas to reduce CO<sub>2</sub> emissions.

Now, let's do it!



# Designing Our Future

## Let's Design Our Future

Now you have read the preceding topics and learned that there are lots of problems facing the environment and that human wisdom and actions are necessary to solve them. Actions can be at various levels – as personal efforts, collaboration with schools, communities and societies or cooperation among nations – and the methods vary too. Sometime you may feel uncertain what to start with when the problems are complex. To sustain a habitable future forever for humans and other creatures, we need to gain necessary skills and attitudes to take actions. Let's design our future together. In this chapter, we will think about designing the future in order to take actions from now on.

### What earth do you want to live on?

Well, let's start by thinking of "what earth we would like to live on." No human can live alone, and humans are not the only creatures who live on earth. So we have to make the earth a peaceful place for every person and living creature.

Let's imagine the earth which is comfortable for everyone to live on. Languages and cultures vary depending on the county or region, but what are necessary in common?

There are some important points to think about it.

#### ● It is the natural environment which guards our lives.

It is all thanks to the blessings of nature that we can live by drinking water, eating food and breathing air. We can turn up the soil and water the fields to grow the vegetables. We can fish. We can get ingredients like sugar and oil – all of these things are possible because of the natural environment. Food, which has involved lots of lives including small microbes, is served on our table. We breathe fresh air by forests function and we enjoy nature – these things enable us to stay healthy physically and mentally. Ingredients of medicines and wood for furniture all come from the blessings of nature. Therefore, destroying the natural environment will lead to deterioration of our life.

#### ● Think about future generations.

We have to think of not only those who live now but also the lives to be born in the future. We can live now because our ancestors left lots of nature and wisdom with us. We have to thank them and take responsibility to take them over. On the other hand, how about a large amount of garbage, weapons or wars? We must make efforts to reduce or eliminate them in our generation.

## ●The earth is finite.

The earth where we live is one of the planets in the universe. Resources on the earth are limited, and some of the resources like petrol or minerals which have been generated over tens of thousands of years might disappear because human beings have overused them. Some of the natural environments, once destroyed, will not easily return to the former states or take lots of time and money to fix them. We need to discuss and exchange ideas with people around the world to use the limited resources fairly for long time.



We posed a question to elementary school students in China, Japan and Korea.

### Question

To enable us and other creatures to keep a better environment on earth and live in peace,

- ①What should be increased?
- ②What should be decreased (or eliminated)?

### Answer

**China** Liu Yuxuan, (12 year-old girl)

- ①-Plant tree -Take public transportation -Ride a bicycle
- ②-Save using paper -Use less plastic bag -Chemical drug should be limited to use

**Japan** Yuuki (12 year-old Japanese boy)

- ①Forests reduce carbon dioxide. I want more zoos and botanical gardens as they are fun. I also want to increase my knowledge.
- ②Carbon dioxide, I want insect pests decreased. I guess reducing waste is something I can do.

**Korea** LEE Ohn (10 year-old boy)

- ①- Environmental volunteers,  
- Many studies and ideas required to make things with good natural resources,  
- Environmental friendly behavior
- ②- Tobacco and alcoholic drink,  
- Terrors and bombs  
- Environmental unfriendly behavior (waste disposal...)

**KIM Yejun (9 year-old boy)**

- ①- Trees to reduce bad air and Hybrid cars to protect our environment  
- Also... any good thinking for the future
- ②Man's greed to make a lot of money using those factories  
-Or selfish thinking to consider one's own interests first

Below you can find more answers.

- ①Dialogues, nature, trees, creatures
- ②Military power, exotic fish, virus, waste, destruction of nature

## Designing Our Future

Were their answers similar to yours? What was the difference? Let's think about it.

Have you got an image of the earth where you want to live?

You may have various images, for example, a place with rich nature and lots of living creatures, a place with households and schools where you can spend a fun time you're your friends and family, a living environment where you can enjoy sports, study, music etc., and a town where kind people can live who help each other in the case of the occurrence of a disaster.



Let's describe.

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Describe the image you have for the future. Either drawing or writing will do.

## Messages from each country's university students

In the spring of 2014, an international conference was held for the university students from China, Japan and Korea who aimed to be the leaders to protect the earth. Below you can find the messages that we asked the participants to send to elementary school pupils.

### Ms. Zihan (China)

Clearer skies, pure water... We are friends and have responsibility for the beautiful environment in Asia and a bright future. Cooperation among youths from the three countries will deepen mutual understanding and learning to bring positive change.

Your generation is full of passion and creativity. Try many things. When you come up with any idea, put it into practice without fearing failure. Start now, then you will make a green leader for sure.

### Ms. Haruna (Japan)

We cannot expect a sustainable society in the future unless these three countries cooperate. Although there are some political difficulties, they are not related to our personal friendship. Do not care about the national boundaries, but consider ourselves as people of the earth who live on the same earth and contribute to the world in the future.

I think that the three countries share the same ideas on enhancement of environmental education, poverty problems, economic and environmental issues. I would like you to absorb various thoughts not only in Japan but also by exchanging with foreign people to think of the future together.

### Mr. Kim Sang-Wan (Korea)

We need to unite minds as "one." If an environmental pollution occurs either in Korea, China or Japan, it will affect the other two countries. So let's not forget to unite minds as "one," though we have different nationalities, cultures and languages.

Development, despite of its necessity for a better future, will destroy the nature much more, which will rebound on us. I hope you will be actively concerned with the environment and study it. Eco-friendly societies have already started to be built all over the world. Let's do our best to create a society where environment and development exist together, too.

## After reading the messages

How did you feel about the messages from the university students?

Have you got an image of cooperating with each other to protect the environment, studying about the environment and doing jobs which will not destroy the environment when you grow up?

## Let's discuss.

What can you do while you are an elementary school student? And what do you want to do when you grow up? Let's think about what kind of studies we should do now and in the future for that.

✕

## Tripartite Environment Ministers Meeting among China, Japan and Korea (TEMM)

Recently, with the rapid growth of Asia, problems such as environmental pollution and destruction of nature have arisen, and how to make a sustainable society has become a great concern. Though economic and social situations differ greatly from each other among China, Japan and Korea, we need to solve environmental problems hand in hand beyond national boundaries. The ministers of the environment of China, Japan and Korea, therefore, have held “Tripartite Environment Ministers Meeting among China, Japan and Korea (TEMM)” every year since 1999. The three environmental ministers meet face-to-face to discuss how to cooperate in solving environmental problems. They make a plan every five years to tackle with priority issues. In addition, under the TEMM framework, governmental officials, experts and business people carry out various tripartite projects in cooperation.

## Tripartite Environmental Education Network (TEEN)

“Tripartite Environmental Education Network (TEEN)” is one of the projects under the framework of TEMM. Every year since 2000, the three countries have hosted meetings in turn, inviting government officials, experts on environmental education, educators and business people. They exchange information on and discuss environmental education, and a symposium for the general audience is held as well. They learn environmental problems of each country and exchange wisdom, techniques and experiences in terms of solutions, which can be utilized for environmental educational activities back in their own countries. TEEN aims to empower people in these three countries to achieve a sustainable society by raising environmental awareness. At the political level, China, Japan and Korea sometimes lock horns on the territorial or historical issues, but the TEEN members who care for the Earth share a strong bond despite the circumstances and tackle environmental education to overcome various problems. So far, the three countries have jointly developed a database of organizations providing environmental education (English version) and environmental education materials for children and carried out exchanges of young leaders implementing environmental education. This book is also one of such joint efforts among China, Japan and Korea.

### For Our Common Future - Environmental Education Book for Children in China, Japan and Korea

Planning and Production: Tripartite Environmental Education Network, Environmental Education Book Editorial Committee  
Masahiro Takahashi (Professor, Taisho University / Director, The Japanese Society of Environmental Education)

Tomoko Hoshino (Global Environment Outreach Centre (GEOC))

Yoshihiro Ishida  
(Principal, Shikahama Daiichi Elementary school, Adachi-ku / Vice-presidents, Japan Environmental Education Committee in Elementary and Junior High School)

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