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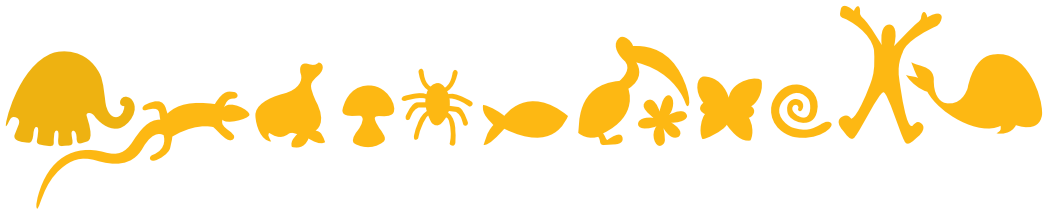


# Biodiversity Challenge Badge



THE GREEN WAVE

# Biodiversity Challenge Badge



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An International Year of Biodiversity product.

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# *A warm* **welcome** *to* **children** *and* **young people**

Throughout the 100 years of Girl Guiding and Girl Scouting, girls and young women have been caring for and advocating for the protection and preservation of the environment and the life it sustains. At the heart of the Movement is respect for nature, a respect that unfortunately is lacking in many areas, with animal extinctions on the rise, deforestation increasing and habitat loss growing.

Now, more than ever, we need to continue and accelerate the Guide and Scout tradition of leaving the world a better place than we found it. Already, young people are leading the way in protecting and sustaining biodiversity. They are planting trees, lobbying governments, recycling waste and raising awareness about pollution.

We hope this resource supports you to continue to be powerful influences in your own futures and in the sustainability of your communities and environments.

**Margaret Treloar**

*Chairman, World Association of Girl Guides and Girl Scouts*

**Biodiversity is the foundation of healthy ecosystems that create an environment we can live in, ensuring clean air, water and fertile soils that can feed us all. For thousands of years humans have developed new varieties of crops and breeds of animals using the diversity of life around them and still now many of these crops need the help of other organisms to grow – for example bees pollinate many types of fruit trees. I hope the Biodiversity Challenge Badge develops your curiosity in the wonders of nature, encourages you to learn more, and drives you to take action to preserve the environment that is around you.**

***Peter Holmgren***

*Director, Climate, Energy and Tenure Division, FAO*

**Biodiversity is life. Biodiversity is our life. That's the simple message of the 2010 International Year of Biodiversity. The variety and complexity of life is astounding. In recent history, humankind has been very careless; the result is that we are losing biodiversity and the benefits it brings.**

**The things we do now to protect or destroy nature will shape the world we live in tomorrow. The biodiversity challenges of the future will be met by today's children and young people – the citizens and leaders of tomorrow. I encourage you to learn and teach others about biodiversity through the Biodiversity Challenge Badge. It is your creativity, curiosity and persistence that will ultimately ensure life in harmony, into the future.**

***Ahmed Djoghlaif***

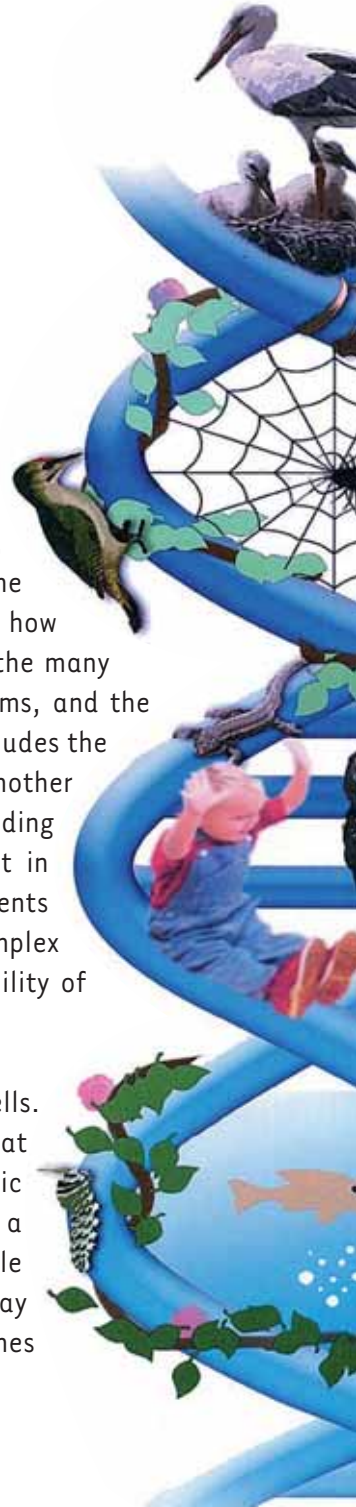
*Executive Secretary of the Convention on Biological Diversity*

# Information *for* teachers *and* leaders

## Introduction to biodiversity

'Bio' means life and 'diversity' means variety, so biodiversity (or biological diversity) is the incredible variety of living things in nature and how they interact with each other. It consists of all the many species of animals and plants and other life forms, and the variety that exists within each species. It also includes the diversity present in ecosystems - or explained another way - the variation we see in the environment including landscapes, the vegetation and animals present in it, and the various ways in which these components interact with each other. Biodiversity is very complex and is often explained as the variety and variability of genes, species and ecosystems.

Genes are the units of heredity found in all cells. They contain special codes or instructions that give organisms different characteristics. Genetic diversity occurs within a species and even within a variety of a given species. For instance, in a single variety of tomato, the genes of one individual may cause it to flower earlier than others, while the genes



of another individual may cause it to produce redder tomatoes than other plants. Genetic diversity is at the individual level, and makes everyone unique. So in fact no two living things in nature are exactly the same.

In our world you can find a dazzling array of animals, plants, fungi and microorganisms, all these different kinds of organisms are called species. A species is a group of similar organisms that can breed together and produce healthy, fertile offspring. Although we may not think about it, we see various species as we go about our daily lives, such as humans, goats, trees and mosquitoes. Species diversity is the most obvious type of biodiversity. Our planet supports millions of species, many of which are not yet identified!

Animals, plants and even microorganisms live in communities just like humans do. Where communities of plants and animals live together, and share their space, their land and their climate, they form an ecosystem. Ecosystems are what many people call “the environment” or “nature”. There are many kinds of ecosystems on Earth. Ecosystems can be small like puddles, or large like deserts, forests, wetlands, mountains, oceans, lakes and rivers.

Perhaps the most important characteristic of biodiversity is that all of the components are linked to each other. For example, if a mouse eats a chemically-contaminated seed, it may survive, but if a hawk eats many mice that have eaten such seeds, the hawk may die from a lethal dose of the chemical.

Ayhan Koyun, aged 16, Turkey





Biodiversity linkages can also be beneficial: the restoration of coastal mangroves forest ecosystems provides important nursery home for fish and other marine species, improves fisheries along the coastline, and protects human settlements from extreme weather events.

Not only does biodiversity exist, it also has a function or purpose. Ecosystems provide things that humans benefit from and depend on. These things are called ecosystem goods and services. Ecosystem goods and services include all the natural resources and processes that maintain the conditions for life on Earth.

For example, biodiversity provides us with the food we eat, cleans the air we breathe, filters the water we drink, supplies the raw materials we use to construct our homes and businesses, is part of countless medicines and natural remedies, and many other things. It helps regulate water levels and helps to prevent flooding. It breaks down wastes and recycles nutrients, which is very important for growing food. It protects us with *natural insurance* against future unknown conditions brought about by climate change or other events. For example, native plants in some temperate countries must withstand hot summers and cold winters, and may have genetic material that could be used to develop agricultural crops that can endure very large temperature ranges. Another important ecosystem service is the cultural value of natural landscapes to people's livelihoods, religious beliefs and leisure activities. Many people, such as farmers, fishers, biologists and ecotourism operators, depend on biodiversity for their livelihoods.

The importance of biodiversity goes beyond its value to human beings: all animals, birds, insects, plants, microorganisms, fungi and other creatures have the right to exist. Unfortunately, all is not well for the planet's biodiversity: biodiversity loss is occurring at an unprecedented rate. Unless we take action, we risk destroying nature's rich diversity forever. But what can be done?

The biodiversity challenge badge aims to help young people answer this question. It is designed to raise awareness on biodiversity issues among children and young people and to provide them with knowledge that can help them become active agents of change in our society. By carrying out these activities your group will identify and take responsible actions in your communities, and therefore, strengthen your participation in the protection, preservation and improvement of our natural resources.

# Introduction



Participant's name: Sine Hwang

Participant's SURNAME: Hwang

Country: Korea

Age: 15

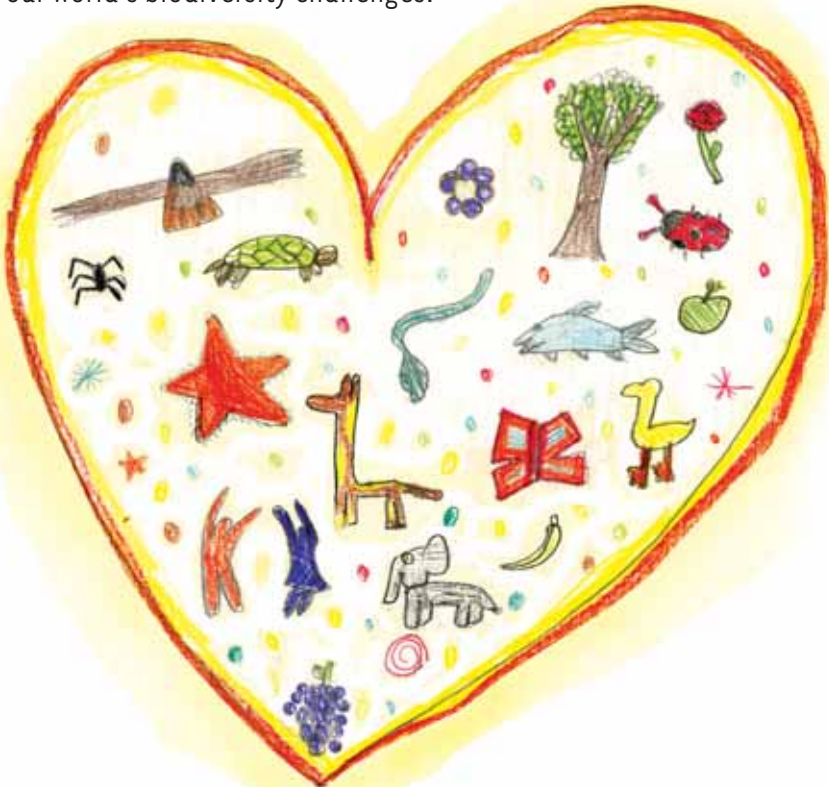
Date of birth (DD/MM/YY)

E-mail address (name.surname@school.com)

## Young people and biodiversity

Many current and anticipated challenges are linked to biodiversity. While many of the problems must be addressed at the global level, there are many things that can be done by individuals and groups in their communities. These steps start with gaining an appreciation and respect for biodiversity and progress to taking concrete action.

Children and young people are eager to shape a more positive future. They are creative, thoughtful and capable citizens whose enthusiasm, fresh approaches and boundless energy can fuel innovative solutions at local and international levels alike. Young people's embracing of learning and new technologies puts them in a position to act as convincing communicators. The involvement of young people in biodiversity is critical to finding lasting solutions to our world's biodiversity challenges.



Eva Bartolleschi, aged 8, Italy

## About the badge

This biodiversity challenge badge is a tool to allow teachers and youth leaders to guide young people in learning about biodiversity and developing action-oriented projects.

Age-appropriate activities introduce biodiversity concepts and stimulate exploration through action-based learning. They encourage participants to get to know the natural world in their community, to find out why certain species and habitats are struggling to survive, and to understand the links between biodiversity and the well-being of people around the world. The badge activities help young people gain knowledge, skills and values to protect, preserve and improve biodiversity.

The badge is jointly produced by the Food and Agriculture Organization of the United Nations (FAO), the Secretariat of the Convention on Biological Diversity (CBD) and the World Association of Girl Guides and Girls Scouts (WAGGGS), through the Youth and United Nations Global Alliance (YUNGA) and *The Green Wave*. These organizations are committed to addressing biodiversity challenges and to helping young people participate in protecting, preserving and improving biodiversity in their communities.

This badge is the second in a series of badges jointly produced by YUNGA. Other challenge badges, including the Climate Change and Food Security Challenge Badge, are available at [www.yunga.org](http://www.yunga.org)

Additional resources, including *The Youth Guide to Biodiversity*, support this badge. For additional details, see the back of this booklet.

## The badge curriculum

The badge curriculum is divided into four categories. To make it easier to find the activities in the booklet the following labelling system has been used.

[ section A ]



Our **Air**

[ section B ]



Our **Water**

[ section C ]



Our **Land**

[ section D ]



Our **World**

To earn the badge, participants must complete two activities from each category. The first or second activity listed in each category must be completed by everyone as it provides an overview to the topics. These compulsory activities are best done in a group. Individuals can then choose from the list of optional activities the ones that are most relevant and interesting to them.

This badge has lots of different kinds of activities to appeal to young people all around the world, surrounded by lots of different forms of biodiversity, and with different levels of access to resources and technologies. Not all activities will be possible in all parts of the world: it's hard to explore tidal pools when you're far from the ocean, or to play online biodiversity games when you don't have a high-speed internet connection. Be sure to choose activities that are relevant and can be done in your area.

## Age ranges of activities

To help you and your group select the most appropriate activity a coding system is provided to indicate the age group for which the activity is most suitable.

Next to each activity you will see a code, for example 'Levels 1 and 2,' which indicates the activity should be suitable for five to ten year olds and eleven to fifteen year olds. Please note that this coding is only indicative.

You may find that an activity listed at one level is suitable for another level in your area.

- LEVEL **1** **FIVE TO TEN** years old  
Participants will learn about different species and ecosystems in their neighbourhoods.
- LEVEL **2** **ELEVEN TO FIFTEEN** years old  
Participants will learn how to describe the different components of biodiversity and ecosystem services, and be able to give examples in their surroundings.
- LEVEL **3** **SIXTEEN TO TWENTY** years old  
Participants will gain a more in-depth understanding of biodiversity components, ecosystem services and of the work going on at the international level.

# How to use this badge curriculum

## - guidelines for teachers and leaders

### Step 1

Encourage your group to learn about biodiversity. We recommend you begin by introducing the concept of biodiversity with Activity D.01 in the Our World section. Before doing other activities, make sure everyone understands the three levels of biodiversity - genes, species and ecosystems - and that they are all interlinked. From there, take the learning outside! Visit your local botanic gardens, neighbourhood library, or natural history museum, invite a scientist to talk with your group, look online or explore the outdoors. Resources such as the *Youth Guide to Biodiversity*, The Green Wave website ([greenwave.cbd.int](http://greenwave.cbd.int)) and the other resources listed at the end of this booklet are great places to look.



### Step 2

Let the group and the individual members choose which activities they want to do. There are a few activities that everyone needs to complete because they provide the necessary background and understanding of the different topics. Apart from these activities, participants are encouraged to select the activities that best match their needs, interests and culture. Some activities can be done individually, others in small groups. If you have another activity that is especially appropriate for your group, you may also include it as one of the options.

### Step 3

Allow enough time for the group to carry out the activities. Some activities, such as playing a biodiversity game or making animal masks, can be completed in one hour or less, while others, such as observing things decompose or growing a biodiversity garden, require some work over several weeks. It's helpful to first decide how you want to complete the badge (e.g. during your meeting or at camp) and then select appropriate activities that you can do. Support and guide them throughout the process but ensure they carry out their tasks as autonomously as possible. Many activities can be conducted in several different ways. Encourage participants to think and act creatively when undertaking their activities.

### Step 4

Have participants present the results of the challenge badge to the rest of the group. Do you notice any changes in their attitudes and behaviour? Encourage participants to think about how the objects and activities in their everyday lives affect biodiversity. Discuss the experience and reflect on how they can continue to apply it in their lives.

### Step 5

Organize an award ceremony for those who successfully complete the challenge badge. Invite families, friends, teachers, journalists and community leaders to participate in the ceremony. Encourage your group to be creative and present the results of their project to the community. Award them with certificates and challenge badges. Challenge badges can be ordered at the WAGGGS online shop: [www.wagggs-shop.org](http://www.wagggs-shop.org)

### Step 6

Share with the FAO, CBD and WAGGGS! Send us your stories, photos, drawings, ideas and suggestions: [children-youth@fao.org](mailto:children-youth@fao.org)



## Sample curriculum

The biodiversity challenge badge can be completed at a camp or over the course of several meetings or classroom sessions. Each child has to do 2 activities from each of the 4 sections (Our Air, Our water, Our Land and Our World). All you have to do is select the most appropriate activities for your group. Remember you can also develop new activities, you don't have to use the ones in this booklet. Provided below are examples of a camp and meeting based curriculum for the three different age groups.

### At camp

#### **Individuals aged Five to Ten (Level 1):**

Individuals could do two biodiversity hikes such as activity A.02 (on page 21) and activity B.07 (on page 33). Carry out two activities such as A.11 (on page 26) and C.10 (on page 44), undertake two crafts such as B.01 (on page 31) and D.01 (on page 53) and do two activities such as C.01 (on page 41) and D.06 (on page 55) at the camp fire.

**The other examples below just provide the codes for quick reference.**

#### **Individuals aged 11 to 15 (Level 2)**

Hike (A.02), Games and activities (A.09, B.27, C.07, D.16), Crafts (B.01, D.01), Campfire activities (C.01)

#### **Individuals aged 16 to 20 (Level 3)**

Hike (A.02, A.11), Games and activities (B.02), Crafts (C.13, D.01), Campfire activities (C.01, B.24, D.18)

### At meetings

#### **Individuals aged Five to Ten (Level 1) :**

Field trip (A.01), Games and experiments (B.13, C.11, D.19), Crafts (A.06, B.01, D.01), Guest speaker (C.01)

#### **Individuals aged 11 to 15 (Level 2):**

Field trip (A.01, C.31), Games and activities (A.07, B.05, C.12), Crafts (B.01, D.01), Guest speaker (C.01, D.07)

#### **Individuals aged 16 to 20 (level 3):**

Field trip (A.01, B.02, C.09), Games and activities (A.17, D.20), Crafts (C.13, D.01), Guest speaker (C.01, B.20)



## Be safe and sound

Exploring the natural world is a fantastic way to learn about nature, however it is important to take some precautions to ensure nobody gets hurt. Remind your group of the following guidelines described in *Eco-fun: great projects, experiments and games for a greener Earth* by David Suzuki and Kathy Vanderlinden.

### Protect yourself

- >> Be careful when using sharp objects and electrical appliances. Young children should seek the help of an adult.
- >> Don't look directly at the sun.
- >> Don't taste things you find unless you are certain they are not poisonous.
- >> Wear gardening or rubber gloves when handling soil.
- >> Wash your hands after finishing an activity.
- >> In some activities, you have the option of uploading pictures or videos to the internet on websites such as YouTube. Always make sure you have the permission of everyone in the pictures or video, and their parents, before you post anything online.

### Protect the natural world

- >> Treat nature with respect.
- >> Be careful with the animals you work with; wear protection if necessary. Be gentle. Make sure they have appropriate food, water and air. When you're done, put them back where you found them.
- >> Never pick protected species. Before collecting plants or picking flowers, get permission. Only take what you need and make sure you leave at least one third of anything you find in the wild. If possible it is best to not pick anything and to leave everything as you found it.
- >> When you do activities, especially the outdoor ones, make sure you *leave no trace*.
- >> As much as possible, recycle or reuse the materials used in the activities.

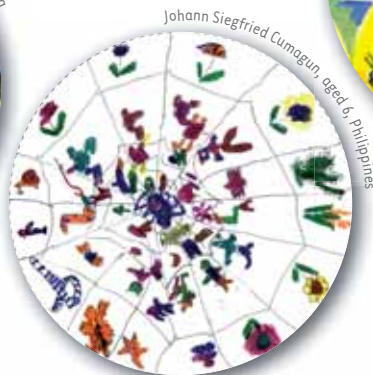
## Additional information and resources

At the end of this booklet, there is a list of useful links to resources and activity materials which may help your group carry out the badge activities (pages 62 to 67). If you join our free e-mail list (see the news box below) you will automatically be informed when new resources become available.

**NEWS**

**This badge is one of several complementary resources and activities developed by FAO, CBD, WAGGGS, YUNGA and other partners. We would appreciate if you shared news and photos on how your group did the challenge badge, especially if you came up with novel ideas and activities. Please send your materials to: [children-youth@fao.org](mailto:children-youth@fao.org)**

**TO SAVE PAPER WE SUGGEST THAT YOU USE ONLY ONE COPY OF THIS DOCUMENT AND SHARE IT WITH YOUR SCHOOL AND GROUP**



## Illustrations and badge design

The illustrations used in this booklets are a selection from the over 3000 drawings which were submitted to the International Biodiversity Art Competition.

The badge design, although not derived from a specific drawing, took inspiration from the many drawings submitted.

To see other drawing from this and previous competitions visit the following sites: [www.yunga.org](http://www.yunga.org)  
[www.yunga.org/scans/gallery\\_en.asp](http://www.yunga.org/scans/gallery_en.asp)

This Challenge Badge is part of a series of challenge badges being developed by YUNGA.

Badges have or will be developed on Climate Change, Forests, Fish and Hunger and other themes.

To see existing badges go to:  
[www.fao.org/climatechange/youth/63380/en](http://www.fao.org/climatechange/youth/63380/en)  
and [www.yunga.org](http://www.yunga.org)

