## Human Beings in Coexistence with Nature The exhibit encourages us to think about what we can do to protect our home planet, with the goal of working towards a future based on the harmonious balance of the Earth's ecosystem.

## Global Gallery The History of Life on Earth

The Global Gallery features an exhibit on the coevolution of the Earth and its inhabitants. along with a history of the development of intelligent thought in humans.



#### Navigators on History of Earth

Based on the epic themes "History of the Universe", "History of Life", and "History of Humankind", travel back in time and experience 13.8 billion years of history through specimens, documents, and videos. It is the centerpiece that links the exhibition halls of the Global Gallery.



### Investigation Technology for the Earth

There are many interactive displays making it possible to instinctively experience the physics related to light and magnetism, which are the foundation of observation technology. And geomagnetism and magnetic fields are explained through familiar phenomena such as compass.



#### **ComPaSS**

Exploration area for families with children

It is necessary to purchase tickets and book dates and times in advance on an external website

This exhibition room is designed for children and their parents or guardians. It encourages parent-child communication through play, aiming to foster the abilities of feeling and thinking.



Evolution of Life

silent testimonies of fossils?

-Exploring the Mysteries of Dinosaur Evolution-

Today, reptiles and birds are quite different animals. Studying dinosaurs

however bridges the gap between the two. There are countless

mysteries including the origin of dinosaurs, their increase in size,

diversification, and their extinction. How much can we learn from the

The evolution of life on Earth has produced some 10 million different species. Although all the species share the basic characteristics of living organisms, each species has adapted in form and lifestyle to its own particular environmental circumstances. No species lives in isolation: our lives are intricately interwoven.



**Progress in Science and Technology** 

This exhibit showcases some Japanese inventions from the Edo period onwards. Japanese culture maintains its unique identity and its close communion with nature, while at the same time having interaction with



The diversity of mammal and bird life on Earth is proof of the bountiful nature of the Earth's ecosystem. The specimens presented here still convey something of the strength and endurance of these species



## Evolution of Life -From the Earlis Origin through Human Existence

Since their beginnings some four billion years ago, life forms have become increasingly diverse due to the ongoing process of environmental adaptation. Human beings, part of the mammal group have acquired highly reasoning. This adaptive capacity has enabled humans to extend their reach to people who contributed to these are introduced all corners of the Earth. In this exhibit, you can trace the evolutionary path and learn how plants and animals have adapted to the changing environment.



### **Exploring the Structure of Nature**

The vast universe, the mystery of life along with its components, and the laws that govern these ... Our understanding of these things is the foundation of all scientific recognition. Discoveries that have widened developed adaptive capabilities, thanks to superior dexterity and powers of our view and changed our understanding of nature along with the

## Japan Gallery The Environment on the Japanese Islands

Exhibited here in this Japan Gallery are the nature and history of the Japanese Islands, the evolution of its endemic organisms, the process by which the modern Japanese population was formed, and the history of our contact with nature.



#### Techniques in Observing Nature

The people of the Japanese Islands have been sensitive in observing the richness and diversity of nature around them since the beginning of their history. Our daily life in harmony with nature has also enabled us to acquire uniqueness in manufacturing and industry. Tools, instruments, crafted objects and literature handed down from their own cut off from the continent by the ocean, these living organisms achieved their unique differentiation as four distinct seasons and are strongly affected by monsoon and ocean currents. The time to the present, demonstrate our activities in the fields of science and technology.



### Organisms of the Japanese Islands

Through the repetition of glacial and interglacial cycles dating back about 1.7 million years, the variety of these living organisms migrated from the continent to the Japanese Islands by crossing the strait, which had turned into land during the glacial stage. During the interglacial stage, when they were



### Nature of the Japanese Islands

From a geochronological viewpoint, the Japanese Islands underwent rapid fluctuations due to crustal movements, and these led to the formation of complex geological structures and a rich mountainous topography. The Japanese Islands have they adapted to the transformation of the natural environment of the Japanese Islands, with its varied climate complex topography and climate of the natural environment has given rise to diverse



Around 40,000 years ago, our ancestors encountered a land rich in forests and oceans at the eastern edge of Asia, and they began to settle in the Japanese Islands. Thereafter, various other groups of people brought their distinctive cultures to the islands. These peoples came together while still maintaining particular aspects of their culture. Our ancestors skillfully interacted with the natural environment of the Japanese Islands through the invention of pottery the cultivation of plants and other techniques.



On the Japanese Islands, with their complex and unique geological history. numerous species have repeatedly appeared, flourished, and become extinct. The evidence of these past lives entombed in layers of rock tells of this dynamic and changing history, from the time the Japanese land mass first split away from the continental margin to when it formed an archipelago.



#### THEATER36O

**Exhibition hall** 

(for temporally exhibion)

Various short-term exhibits or events will be held here every season

A visual facility that projects a 36-degree view of images and videos, providing a one-of-a-kind experience of weightlessness and impact. Enjoy the original programs we have in store for you.

Some visitors may experience disorientation or discomfort due to the floating sensations or sense of speed created by the unique format of the show. Particular care should be taken with small children, visitors who are not feeling well. expectant mothers, senior citizens, and those who have a heart condition.

Intoxicated persons, unaccompanied preschool children, and groups of preschool children are not permitted to enter.



#### Foucault Pendulum

In 1851 the French physicist Foucalt used this type of pendulum to prove the rotation of the earth



### Japan Gallery building

The construction of the building, which has a unique Neo-Renaissance style architected by the Ministry of Education then, was completed in September 1931. It has the shape of an airplane that was a symbol of the state-of-the-art technology in the early Showa Era when this building was constructed.

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## **Visitor Information**

#### Opening hours

9:00AM-5:00PM (Last entry to Museum 4:30PM)

\*Hours are subject to change.

#### Closed

On Mondays except public holidays\* \*the following day if it falls on a Monday

December 28 - January 1

For 5 days starting Monday of the 4th week of June due to annual maintenance \*Days closed are subject to change.

#### Admission fees to the permanent exhibition

Categories		Prices	Remarks
Suggested	General and university students	630yen	
	High-school students and younger	Free	
Groups	General and university students	510yen	A group must consist of at least 20 people
Night visit for astronomical observation	General and university students	320yen	On the 1st/3rd Fridays of the month, approx. 2hours after twilight on clear night
	High-school students and younger	Free	
			*Online bookings

\*Free of charge: Children aged 17 and younger, Seniors aged 65 and over, Disabled visitors (with one caregiver per the person)

Separate admission fee is required for special exhibitions.

#### Inquiries

050-5541-8600 (Hello Dial, in Japanese and English)



- 5 min. walk from JR Ueno Station, Park Exit
- 10 min. walk from Tokyo Metro Ginza/Hibiya Line Ueno Station
- 10 min. walk from Keisei Line Keisei Ueno Station (We have neither parking area for cars nor bicycles)

https://www.kahaku.go.jp





Address:7-20 Ueno Park, Taito-ku, Tokyo 110-8718

2024.1

#### **Supporting Members**

The National Museum of Nature and Science invites you to become a Supporting Member. Membership helps support our activities, which include raising interest and awareness among young people towards the natural sciences, collaborative events with regional museums, and preparing, purchasing, preserving and restoring specimens. Please see our website for details of membership benefits, annual fees, and how to apply.



## FNMNS Membership, the Repeaters Pass, and the Midori no pass

The Museum offers the FNMNS(Friends of the National Museum of Nature and Science), the Repeaters Pass, and the Mirori no pass in order to foster links between the Museum and communities and enhance familiarity with the Museum and its activities. To find out how to become a member, please ask at Membership Desk on the 1st basement floor (B1F) in Japan Gallery.



## Other Facilities in our institution



### Institute for Nature Study

A variety of environments in the garden preserve the atmosphere of the old Musashino Plain. \*national monument and historical landmark

#### Opening hours

For September 1 to April 30 9:00-16:30 (last admission is 16:00) For May 1 to August 31 9:00-17:00 (last admission is 16:00)

#### Admission Fees

General and university students 320yen High-school students and younger Free

#### Closed

On Mondays except public holidays\* \*the following day if it falls on a Monday The day after a national holiday (but remains open on Saturday and Sunday) December 28 - January 4

5-21-5, Shirokanedai, Minato-ku, Tokyo, 108-0071 TEL: 03-3441-7176



### Tsukuba Botanical Garden

The plants life found in different parts of Japan is recreated here. The facility also houses an astronomical observatory

9:00-16:30 (last admission is 16:00) [Night for astronomical observation] Available on the 2nd Saturday of the month, for about 2 hours after twilight on clear night.

#### Admission Fees

General and university students 320yen High-school students and younger Free Groups (20 or more visitors) 250 yen

#### Night visit for astronomical observation General and university students 320yen

On Mondays except public holidays\* \*the following day if it falls on a Monday The day after a national holiday (but remains open on Saturday and Sunday) December 28 - January 4

High-school students and younger Free

#### **Inquiries**

4-1-1 Amakubo, Tsukuba-shi. Ibaraki, 305-0005 TEL: 029-851-5159



### sukuba Research **Departments**

Conduct activities of research related to natural history and history of science and technology.

## Not opened facility to general visitors.

4-1-1, Amakubo, Tsukuba-shi, Ibaraki 305-0005 Tel: 029-853-8901

## Multimedia/Kit : Have more fun



## KAHAKU HANDY GUIDE

You can use your smartphone or other mobile device to explore descriptions of our collection and more. Available for, Japanese, English, Chinese, and Korean,



Audio Guide to Permanent Exhibition

udio Guide to Permanent Exhibition [320yen, Free of charge for Disabled visitors]

The Audio Guide for both player and tablet offers informative commentaries on exhibits by native speakers for each language which do not just introduce our fascinated collections but also quide you deeply the world of nature and science English, Mandarin or Korean are available in addition to Japanese/Japanese for kids.



#### nteractive Kiosk as nformation terminal [Placed in each permanent exhibition hall]

Kiosk, a touch-screen information terminal which provides specific information, explanation or videos on each permanent exhibit. English, Mandarin or Korean are available in addition to Japanese









Facebook

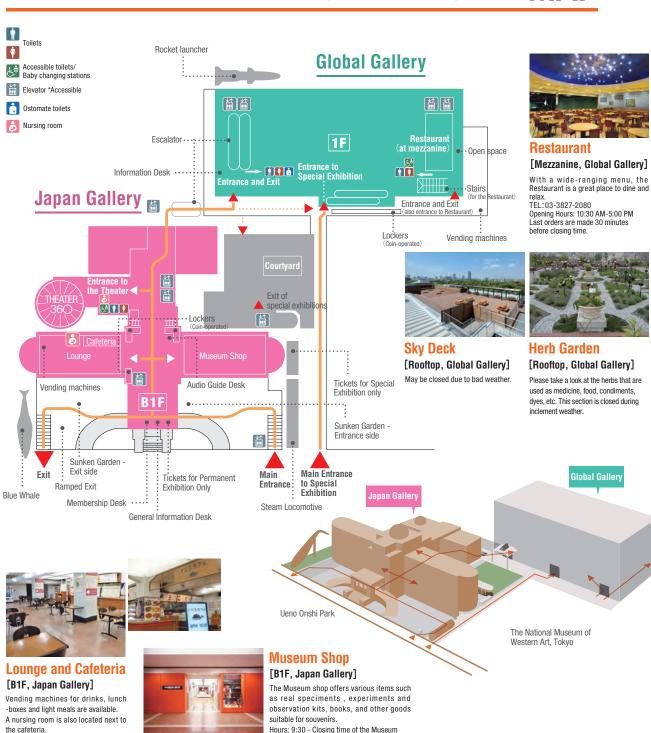
You Tube

### PLEASE NOTE

#### Photography and filming

- · This includes photography and filming for personal, non-commercial use that does not interfere with operations or safety of the Museum and, infringe on other's right of portrait.
- · Area or object where photography is prohibited.
- 1. With a prohibition sign
- 2. Videos and Images which are projecting/screening in the Museum property 3.Inside of Theater 36
- · Please follow each instruction for Special Exhibition or Temporary Exhibition
- · The use of monopods, tripods, selfie sticks, flash and additional lights is prohibited in the museum.
- · Taking group photos is also not allowed in the museum.
- Do not eat/drink in the exhibition halls.

## National Museum of Nature and Science (Global Gallery Japan Gallery) Museum MAP



Investigation

Technology

for the Earth

(Global Environmental Detector)

(Global environmental detector)

Investigate the Earth

@Investigate interior of the earth

**B.The Science to** 

(D) Investigate the ground

A.GED

@GED

## Animals of the Earth

1.Peak of Evolution Larne Wild Mammal

1 Peak of evolution

## 4. Our Evolutionary Kindred

Our evolutionary kindred 5.On the Brink of Extinction

On the brink of extinction 6.Birds of Diverse Appearances

[Rooftop] Sky Deck Herb Garden Sky Deck Herb Garden





1.Peak of Evolution : Large Wild Mammals

2. Way of Survival

3

6.Birds of Diverse 6

**1**6

4. Results of Mode

1

**∮ 5**€

3.The Beginning of Moderniza

Appearance

Testing and

(Lab)

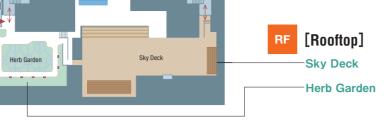
B

cience and Technolog

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in Jananese Science

Training Room





Floor MAP

### **Evolution of Life**

**Global Gallery** 

-Exploring the Mysteries of Dinosaur Evolution-



## 1.Exploring the Mysteries of The Special Exhibition Hall

Dinosaur Evolution Evolution of saurischian dinosaurs

Evolution of ornithischian dinosaurs

3The last day of the Mesozoic

## **Evolution of Life**

-From the Earth's Origin through Human Existence-



1.A Stroll Through 4.6

#### Billion Years of History A stroll through 4.6

billion years of history 2. Geological Samples

## from the Planet Earth

Rocks and minerals Fossils

3. Biotic Response to Global

**Environmental Change** 

ARecords of global environmental change

6 Mass extinctions Geosphere-biosphere interactions

Microfossils 4. Explosive evolution of

#### life in the sea 8 Precambrian microorganisms

 Vendian life Strange animals in Burgess

Shale and Chengjang Faunas Paleozoic invertebrates

Trilobites in the paleozoic sea BEvolution and success of fishes

#### invade the Land @First steps on the land Greening the land

6.The Age of Mammals

@Origin of the mammals

Mesozoic mammals @Early mammals lived in forests

@Early mammals lived in grasslands and arid lands

Mammals of island continents

@Graviportal mammals @Carnivorous mammals

7. Secondary adaptation of

tetrapods to life in water. Secondary adaptation of

tetrapods to life in water @The forerunners of

anuatic mammals

Convergence to life in water A pioneer in new food resources.

②A gigantic marine reptile @Diving birds

## 8. Flying tetrapods

@Flying tetrapods 9. Human Evolution

@Primate evolution

The evolution of the Australopithecines and contemporary species

@The evolution of early Homo @Reconstructing ancient humans

@The evolution and worldwide expansion of modern humans

The expansion of modern humans:

out of Africa again The expansion of modern humans:

into Furasia The expansion of modern humans:

into Oceania @The expansion of modern humans:

into northern Eurasia @The expansion of modern humans:

Into the Americas



(B) Hierarchical structure of matter

the diversity of elements

Shape of molecules:

a variety of matter

@Periodic table:

## 3. Exploring the World of Matter

### **O.Japanese Scientists**

physics, chemistry, and physiology or medicine

• Japanese builders of science with items from our collection

Exploring the world of elementary particles Measurements

Measuring electricity and magnetism

Measuring temperature

Speed of light

Gravity

## 2.Exploring the Universe

### Japanese Nobel Prize laureates in

**Exploring the Structure of Nature** 

The solar system Fixed stars, nebulae

Superclusters of galaxies and the large-scale structure

#### ®Exploring the nanoworld @Exploring the ultimate formation of matter

Macroscopic properties and microscopic properties

Punctional materials

Striving for environmentally friendly chemistry

the universe and its origin

## **Biodiversity**

8 Various landscapes on earth The linkage of life

Mangrove forests Tropical rainforests

**₩**etlands **®**Temperate forests

Alpine regions

#### Deserts 3.Origins of Biodiversity

What is life?

Species of life

@Factors of diversification : evolution

Factors of diversification : speciation @Examples of diversification

#### 4.Tree of Life Tree of life

@Challenges of extreme

@Symbiosis and parasitism

@Pursuit of biodiversity

Japanese crested Ibis

@Networks on conservation of biodiversity

## 5.Strategies for Survival:

Adaptation Size factors

temperature and humidity Seeking for nutrients

Succession of life

6.Conservation of Biodiversity

## Mow much do we really know?

Red list

@Inter-specific network around

@Recovery of endangered species

Audio Guide Desk Museum Shop

Lounge and Cafeteria

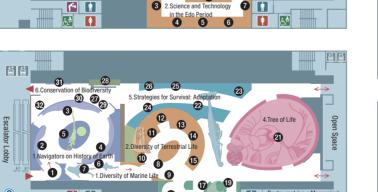
THEATER 36O

B.The Science to

(a)

Investigate the Earth

1.Introduction to the History



**(4)** 16 3.Origins of Biodiversity Restaurant (on a Mezzanir **4** M Entrance/Exit Entrance/Exit (also entrance to Restaurant) Escalator to

Japan Gallery Exit General Information Desk the Special Exhibition Hall

E. 3.Biotic Response to Global

2 3 the Laws of Nature 3.Exploring the World of Matter 6 a **4** 8 2.Exploring the Universe

•

Exploring the Mysteries of

**(4)** 

2. Geological Samples from the Planet Earth

5. Plants and Animals invade the Land

6.The Age of Mammals

25

28 26

27

8.Flying tetrapods

trapods to life in water.

<u>₹</u>

CT Scan Laboratory

Accessible toilets/
Baby changing stations

Special Exhibition Hall

Designated entrance is located on the 1st floor

Accessible toilets

Ostomate toilets

32

## 1.Exploring the Laws of Natur

Drinking fountain

Elevator \*Accesible

Discovery pocket

Nursing room

\*These elevators don't stop at this floor

B<sub>1</sub>F

B<sub>2</sub>F

KEKB accelerator & Belle experiment

4 Thermal radiation and energy

## Telescopes: our eves to

investigate the universe 8 Let's take a look at celestial bodies

9 Hierarchical structure of the universe

and star clusters

@Galaxies and clusters of galaxies

of the universe The expansion of

## Great Japanese Figures in Science and Technology

large wild mammals 2.Way of Survival

2 Way of survival

## 3. Mammals in Savanna

## 6 Birds of diverse appearances

## Mammals in savanna

## Progress in Science and Technology

### 1.Introduction to the History of Science and Technology

Introduction to the history of science and technology 2. Science and Technology

in the Edo Period Mining in the Edo period Development and popularization

of arithmetic Astronomy and surveying 6 Transition from herbalism to

6 Medicine in the Edo period **7**Skills of the masters

natural history

3.The Beginning of Modernization



6.Past, Present, and Future

of Science and Technology

4. Results of Modernization

BInventions and creations by Japanese people

Birth of the car manufacturing industry

New technology: picture transmission

Jananese Science and Technology

5. Further Developments in

Mechanical calculators

Space development in Japan

@Ocean Research in Japan

2 Past, present, and future of

Computers

#### Standardization of criteria and systems Qultivating human resources for modernization @Spread of modern science and technology Introduction of machine tools Introduction of electrical power systems

1. Diversity of Marine Life 6 Photosynthetic ecosystem

• All comprise atoms Chemical synthetic ecosystem 2 History of the universe 2. Diversity of Terrestrial Life

3 History of life 4 History of humankind

1.Navigators on

History of Earth

**Navigators** on

**History of Earth** 



This exhibit can be easily accessed by stairs located in front of the Information Desk on the 1st floor or by escalator from the 2nd floor

