Theme Development Guidelines

64 Motifs Inspired from Our Planet

Objective

World exposition themes are often comprehensive, abstract, and symbolic, perhaps because they focus on a broad range of human activities and provide only directional indications regarding an exposition's basic concept and thematic development. The Montreal Exposition's theme, *Man and his World*, and the Osaka Exposition's *Progress and Harmony for Mankind* are characteristic examples; beside them, *Nature's Wisdom*, the theme of the 2005 World Exposition Aichi, Japan, is by no means out of place.

The present guidelines outline the directions implied in the multiple aspects of the *Nature's Wisdom* theme as a planning aid for those considering involvement at one of the various levels of participation: exhibition, facilities, concessions, etc. The guidelines are a tool for presenting the possible directions participants may take in developing their own exhibition themes and offer the greatest development range possible by being broad in scope.

While various explanations and development examples regarding the theme have already been released in numerous formats, these guidelines provide specific, concise explanations and development examples, referred to as motifs. Presented within the context of the underlying structure, the motifs represent more than simple lists—the thoughts behind each individual motif are provided to offer developmental directions relative to the overall theme and to present as clearly as possible the range of development for each.

Thematic Structure

The thematic structure of EXPO 2005 comprises one main theme subdivided into three sub-themes. Furthermore, in drafting the Master Plan we also introduced the idea of a *Grand Intercultural Symphony*—the linking of many different cultures and peoples in exchange—as the concept of the exposition. While this type of exchange is a feature common to all world expositions, we can paint a clearer and more dynamic picture of the thematic structure of EXPO 2005 by regarding theme and concept as interwoven. We have therefore made the addition of the exposition concept to the sub-themes integral to developing motifs from the EXPO 2005 theme structure, and the starting point of our task.

In brief, we have sought in these guidelines to clarify the thematic structural outline derived from the subdivision of the main theme into three sub-themes and the addition of the EXPO 2005 concept, clearly delineate the directions participants may take in developing their own exhibition themes, and as a reference, establish examples in the form of motifs that manifest the theme.

1. Thematic Structure of EXPO 2005 Aichi, Japan

Theme—*Nature's Wisdom*

The vastness of the universe is so great as to be virtually inconceivable. To consider ourselves against such immensity is to realize that within the mechanism of nature that forms the universe, we, the human race, are just one small part of the whole. This realization, while humbling, is also awe-inspiring. This is our inspiration for the theme of EXPO 2005: *Nature's Wisdom*.

The aspect of nature closest to human beings is, perhaps, the human body itself. The reaffirmation that every individual, or even the entire human race, is a part of nature instills a new cooperative spirit and self-assurance that surpasses regional and national borders. Indeed, when human actions are ruled from the awe and reverence gained in acknowledging that the mechanism of nature resides in every person, human recklessness—born of self-conceit—will undoubtedly be controlled.

Throughout history, we have treated nature as an object and altered and dominated it on our march to build civilizations. While the origin of such actions can be traced to the development of agriculture and livestock farming, it was with the Industrial Revolution of the 18th century and the massive use of fossil fuels it provoked that the real flood of activity began. At the end of the 20th century, however, the consequences of reckless industrialization became clear: the effect of our actions upon the world's environment is exceeding acceptable environmental limits.

Globally, people now realize that we can no longer afford to objectify and forcefully strip nature, realize that we, too, are a part of nature's mechanism. In rediscovering humbleness, it is time to learn anew from nature and reconstruct a sustainable civilization that resonates in harmony with the workings of nature. By reestablishing and rebuilding our relationship with nature, new dreams will be born.

Yet, rebuilding our relationship with nature does not mean that we should disregard human wisdom, the knowledge of science or technology. In fact, *Nature's Wisdom* can be understood as human wisdom that seeks to realize civilization in harmony with nature. Straddling both traditional and modern wisdom, we can create a new comprehensive, common wisdom for the entire world-our goal for EXPO 2005. The various innovative approaches and success stories gathered from around the world will be a source of wisdom and inspiration for everyone.

Sub-theme—*Nature's Matrix*

The starting point for realizing civilization in harmony with the mechanism of nature must obviously be the understanding of the mechanism itself. It is through the *Nature's Matrix* sub-theme (the complex relationship among life, information, and the universe) that we hope to introduce a new level of recognition and use of nature befitting the 21st century, expressed by utilizing the frontline knowledge of science and technology that clearly shows the origin and mechanism of nature.

Since the formation of modern science, human knowledge regarding nature has spread wide and deep. The breadth of this knowledge has, at times, led some to the miscomprehension that there was nothing left to reveal. However, examining the past, we can find instances where, perceiving nature merely as predictable and generous, our limited comprehension led to misfortune. Regarding nature in such simple terms was both inadequate and one-sided. The depth of nature may well be endless: At the heart of every riddle solved—be it concerning the matter and energy that ultimately forms the human body, the beginning and end of the universe we look up to, or the essence of life—yet another riddle always lies anew.

In delving the depths of nature, particularly the mechanism of life, we must pay attention not only to matter and energy but to information as well. Examining group behaviour, perceptions and actions, as well as heredity reveals that information is an innate element of life. Furthermore, there is a deep connection between information and technology in life, as seen by the development—as a method of biotechnological research—of humanoid robots through cybernetics, the comparative study of communication and control processes in biological and artificial (mechanical and electronic) systems. Recent advancements include robots that gather information from their environment through electronic "senses" that emulate the senses of living organisms. By recognizing the importance of the relationship between life and information, attention can be turned toward biotechnology, artificial intelligence, intelligent robots, and the ever-increasing

intelligent information environment.

Further understanding of nature comes by recognizing that objects built by humans are also a part of nature. Fundamentally, natural and human-made objects are composed of common materials and work using common sources of energy in accordance with the laws controlling the universe. Therefore, the advancement of technology that creates these objects in fact contributes to a deeper understanding of nature. In turn, this deeper understanding further advances technology. Consequently, nature can be referred to as a vast realm that contains human beings and science and technology. The pursuit of elementary particles, the pioneering of nano-technology, and the development of new materials are all part of our quest into the mechanism of nature.

Sub-theme—*Art of Life*

The *Art of Life* sub-theme considers the insights into the mechanism of nature that are found in the world's cultures, art, social norms, and technological ethics in the past and the present in order to consider possibilities for the future.

Modern scientific progress has seen our knowledge of nature rapidly expand. Yet, even before this expansion, our knowledge of nature was the foundation for an array of human developments throughout history, including religions, customs, and empirical technology, thereby sustaining advances in civilization. Just as life on Earth expresses an astonishing amount of diversity, so too does culture. In turn, cultural diversity leads to diversity in the definition of "nature."

Looking into the past, it is clear that traditional knowledge has also led to deep insights into nature. This perhaps indicates that while we may have acquired knowledge of nature through modern science, we have also forgotten insights that were gained long ago. Accordingly, it is vital that we not only pay attention to the latest scientific achievements but also learn from tradition in order to create a civilization that harmoniously coexists with nature. History shows many instances of superior achievements having been accomplished under traditional environment management systems by using natural resources both effectively and enduringly.

Moreover, it is also necessary to learn from traditional knowledge when applying new technology gained from the knowledge of modern science. The process by which new scientific knowledge and the results of technological developments are accepted by people is dependent on the social norms and culture that have formed over time, where differences in acceptance vary by people, region, and country.

Discovering the unique wisdom that each culture possesses by paying attention to the diversity of human culture and society is essential both for learning from tradition and for searching for ways to effectively apply the results of new technological developments. Hence, discovery is also the basic element for nurturing a new borderless global community spirit and encouraging global cooperation.

Learning from tradition not only entails showing respect for history but also requires the creative ability to discover the multiple meanings hidden deep within phenomena, along with the ability to be receptive and flexible toward different cultures.

Sub-theme—*Development for Eco-Communities*

Incorporating the first two sub-themes, the *Development for Eco-Communities* sub-theme presents the social requirements for and the technological possibilities and urgent necessity of creating a recycling and energy conserving society founded on a new perspective toward nature and the artificial products society creates.

The present theory of the universe suggests that even though our planet, with all its life, will see a final day, this day will be far, far into the future. If we, the human race, truly hope to continue on into the seemingly unlimited time this theory suggests, we need to carefully control how our existence-and actions-influences nature around us. If we continue to rapidly consume the natural resources Earth has accumulated over time and do nothing to curb the emissions created by consumption that exceed environmental self-recovery, we may have to calculate the time until a catastrophe occurs not in paleontological units of time, nor in archaeological units of time, but, rather, in centuries.

The only way out of this situation is to build a recycling and energy conservation based social system.

Technological resources for such a social system are to be found in the rediscovery of traditional technology as well as in new technology stemming from the latest scientific developments.

The realization of a recycling and energy conserving society is not merely a technological or scientific issue but also a social issue. It is an issue of change: foregoing the use-and-discard lifestyle and creating a new way of living where governments and communities plan and promote policies concerning production, consumption, development, and nature conservation in support of a new lifestyle that is in harmony with nature. Such policies may be more effectively implemented by regarding them as a task not limited to any one nation or region but common to the world. While lifestyles and industry are formed differently depending on the country or region, all equally share the responsibility for striving for a global community in harmony with nature, achieved through sustainable development.

EXPO 2005 concept—*Grand Intercultural Symphony*

Interaction among the world's people will consolidate the knowledge presented by the theme and three sub-themes. Such interaction is key to making this knowledge commonly available to everyone. An exposition is one way to provide such interaction; however, for the large-scale transition in civilization that EXPO 2005 addresses, it is necessary to view this issue in a wider sense and over a longer period of time. The concept of a *Grand Intercultural Symphony*—the linking of many different peoples and cultures in exchange—will seek to meet this challenge.

Human beings, now commonly considered to have emerged from Africa, have continually migrated, proliferated, and interacted with one another throughout history, forming the current place each ethnic group calls home. At the same time, humans have exchanged knowledge through war and assimilation. While such experiences have developed unique characteristics in each ethnic group, they have also allowed human beings to create common civilization. Numerous examples of volkerwanderung, the Silk Road, the Golden Age of Navigation and modern day migration are all parts of our history of interaction. The formation of a global consensus on a new ideal for civilization is essential in order to make *Nature's Wisdom* effective as common knowledge for all people. It is something that cannot be achieved without intercultural interaction.

The 20th century saw the emergence of large numbers of people fleeing the ravages of war. Concurrently, the number of people traveling and migrating to foreign countries has increased due to advancements made in large-scale transportation systems. Such developments have created new opportunities for worldwide interaction.

In the 21st century, how will breakthroughs made in transportation and communication systems advance intercultural interaction? And, what achievements will occur through such interaction? How will the barriers of education, customs, religion, and language be overcome? What role will IT (Information Technology) play?

Intercultural interaction will bring about a global community spirit surpassing national borders and show us prospects for the 21st century, while also affirming the unique value of individuals, groups, corporations, and nations—the members of the various dimensions of interaction. Each level of interaction will be explored in relation to the theme and sub-themes through the motif development system that follows.

2. Participants' Theme (Motif) Development Method

Motif development matrix

To offer a development tool that is more than a simple list of examples, we have produced an array of example motifs by adapting the thematic structure of EXPO 2005 into a three-dimensional coordinate system (X, Y, Z) model, where each axis is considered a different perspective.

While there is only one Earth, it is nonetheless a source of countless inspirations. Why? One reason must certainly be because of individual perspective, as everyone regards the planet from a unique perspective. Returning to our model, three dimensions allow and encourage such multiple perspectives. The coordinate system will then be a "blank matrix" filled with unique perspectives, all inspired, naturally, from our planet, Earth, and *Nature's Wisdom*.

Each dimensional axis represents a perspective, characterized by the elements defined below. Furthermore, each perspective axis will have four levels (X1-X4, Y1-Y4, Z1-Z4). This produces a three-dimensional coordinate system model with 64 (4 x 4 x 4) different coordinate positions (the four matrix tables illustrate this visually). Each individual coordinate position is the juxtaposition of three perspectives, which thereby suggests a motif. As a guide, we have offered 64 example motifs, or one for each coordinate position.

The following are the elements that characterize the three perspectives axes.

1) Challenges (topics) drawn from the thematic structure of EXPO 2005
2) Scale (range in scope) of the motif
3) Time of the motif

With these elements forming the axes, the coordinate system establishes perspectives based on the thematic structure of EXPO 2005, while also forming guidelines to develop motifs.

First dimension (X)—*Challenges*

This perspective axis suggests thematic directions for motifs in terms of the challenges (topics) EXPO 2005 will address, as based on the thematic structure of the EXPO. The four levels are derived from the three sub-themes and the EXPO 2005 concept, as follows.

X-dimension perspectives

X1: Nature and Life (derived from the *Nature's Matrix* sub-theme)
X2: Society and Culture (derived from the *Art of Life* sub-theme)
X3: Technology and Lifestyle (derived from the *Development for Eco-Communities* sub-theme)
X4: Movement and Interaction (derived from the EXPO 2005 concept: *Grand Intercultural Symphony*)

Second dimension (Y)—Scale

This perspective axis indicates the scale, or scope, a motif addresses. Four levels are presented.

Y-dimension perspectives

Y1: Human (human-sized to smaller in scale)
Y2: Community (from family to local community to international community in scale)
Y3: Earth (Earth as the sphere of human action)
Y4: Universe (from the sphere of human action to the limit of human awareness or knowledge)

Third dimension (Z)—Time

The Z-perspective axis indicates the time period a motif addresses, a subject deserving special attention. Technology up to and including the 20th century, which considered nature as merely an object, was founded on knowledge gained from empirical science. In contrast, technology of the 21st century, which addresses a reevaluated relationship, and harmony, between technology and nature, should now be founded on history-based knowledge that critically re-examines past and present civilization. To that end, the significance of history-based knowledge that seeks to perceive the future looms large in the present. The prism of time, divided into four levels, creates many thematic possibilities.

Z-dimension perspectives

Z1: Universal (constant, not bound to any one period, rather, always present)
Z2: Past (unresolved issue in history or lessons from history)
Z3: Present (present day issues, the latest issues now being addressed)
Z4: Future (further development of forecasts, future-vision, and dreams)

3. Deriving Example Motifs from the Matrix

The starting point for deriving a motif is deciding on a level for each of the three perspective axes, Challenges, Scale, and Time, and finding the juxtaposition within the development matrix. As it is admittedly difficult to visualize a three-dimensional matrix, we have created four matrix tables illustrating the above. The title of each table corresponds to the X-perspective axis.

X1: Nature and Life (derived from the *Nature's Matrix* sub-theme)
X2: Society and Culture (derived from the *Art of Life* sub-theme)
X3: Technology and Lifestyle (derived from the *Development for Eco-Communities* sub-theme)
X4: Movement and Interaction (derived from the EXPO 2005 concept: *Grand Intercultural Symphony*)

Each table contains 16 (4 x 4) cells, or positions, created by the intersections of the four levels of the Y- and Z-perspective axes. Each position contains motif related keywords we have created to assist in deriving example motifs.

As first mentioned, the aim of this document is to provide a tool for further ideas and not to propose strict categories for development. Accordingly, the example motifs that follow are merely examples. We hope that they will provide assistance to the nations and international organizations that are considering participation in EXPO 2005 in developing their own ideas.

X1: Nature and Life—derived from the *Nature's Matrix* sub-theme

Motifs suggested by the development matrix

・(Keywords)

	Y1 : Human	Y2 : Community	Y3 : Earth	Y4 : Universe
Z1 : Universal	**Search for the origin of life**	**Birth rate, infant mortality, and average life expectancy**	**Effect of changes to energy and material cycles in nature**	**The solar system and our planet their birth and future**
	・Atoms and molecules ・Carbon-based life, Organic compound ・Amino acid, Protein ・Gene, Complex systems	・Birth rate, Infant mortality rate ・Family planning, Oral contraceptive ・Adult diseases, Average life expectancy ・Aged society	・Air and water circulation, Climatic change ・Water shortage ・Circulation of the elements ・Water, soil, and air pollution	・Birth of the solar system and Earth ・Earth—the water planet ・Emergence of life ・Future of the solar system and the destiny of Earth
Z2 : Past	**Advances in medical technology and issues in bioethics**	**Battle against infectious disease**	**Signs of change in the global environment**	**History of life and the global environment**
	・Organ transplant, Brain death ・Euthanasia, Gene therapy ・Reproductive medicine, Bioethics	・Sterilization technology, Vaccine ・Immunity, Antibiotic ・Resistant bacteria, Virus ・AIDS	・Destruction of nature through agriculture and livestock farming ・Fossil fuels and smog ・Extinction of species ・Silent Spring (by Rachel Carson)	・Chlorophyll, Formation of the atmosphere ・Solar spots, Continental drift ・Extinction of the dinosaurs, Ice age ・Human fossils
Z3:Present	**Intelligent information technology changing the way we live**	**Treatment of hazardous substances**	**Satellites' view of the global environment**	**Advancements in solar system research and a new perspective of the earth**
	・Artificial intelligence, Meme ・Humanoid ・Therapeutic robot ・Bio-computer ・Intelligent information environment	・Lethal radioactive fallout (ash), Minamata disease ・Endocrine disrupting chemicals ・Harmful additives, Food chain ・Electromagnetic radiation	・Artificial satellites, Remote observation ・Deforestation and desertification ・Loss of polar ice and inland waters ・Hole in the ozone layer	・Moon, Exploring the planets ・Observations of Earth ・Plate tectonics ・Meteor ・Space guard
Z4 : Future	**Genetic engineering in the present and the future**	**Dealing with the population explosion**	**Changing global environment and the future of life**	**Search for the origin of the universe and matter**
	・Theory of evolution ・DNA library ・Lessons of eugenics ・Genetic engineering ・Changing the course of evolution	・Population growth rate ・Baby boom ・Food production, Satiation and hunger ・Population tree, Falling birth rate and aging society ・Lifespan limits	・Long-term changes in the biosphere ・Environmental adaptation ・Environment and heredity ・Life in the future ・Scientific eschatology	・Big bang ・Elementary particles ・Black hole ・Powers of ten ・GUT (Grand Unified Theory)

X2: Society and Culture—derived from the *Art of Life* sub-theme

Motifs suggested by the development matrix

・(Keywords)

	Y1 : Human	Y2 : Community	Y3 : Earth	Y4 : Universe
Z1 : Universal	**Search for the origin of language and consciousness**	**Gender and age in the family and community**	**Stages of civilization and use of nature**	**Image of the universe and the story of creation—hexaemeron**
	・Brain, Intelligence ・Origin of consciousness ・Origin of language ・Thought and language ・Communication	・Equal opportunity for men and women ・Three-generation family ・Regional organizations for the elderly ・Business related to the elderly ・Intergenerational cooperation	・Nelothic era, Jomon culture ・Beginning of agriculture and livestock farming ・Industrial Revolution ・Industrial belt ・Urban civilization	・Images of the universe, Hexaemeron ・Celestial being ・Legendary place ・Images of Earth and the world map
Z2 : Past	**Creativity in traditional performing arts and crafts**	**Reevaluation of traditional communities**	**Environmental issues before the Industrial Revolution**	**Calendars and Festivals, astrology and life in the four seasons**
	・Festival, Folk tales, Traditional performing arts ・Traditional crafts, Traditional food ・Traditional medicine ・Masterpieces of the masters ・World heritage	・Community ・Boss and subordinate relationship ・Loneliness of urbanites ・Activities of community residents ・Local administration and residents' organizations	・Effect of agriculture and livestock farming ・Forests and use of wood as a fuel ・Flood control ・Crop rotation ・Traditional resource management	・Observations of celestial movement ・History of astrology ・Traditional calendars ・Calendars and life in the four seasons ・seasonal festivals/events
Z3:Present	**Shaping a new image of children and the elderly**	**Borderless art and cultural activities**	**Urbanization of Earth and the road to urban renewal**	**Interest in extra terrestrial intelligence**
	・Rediscovering children ・Modern education, Cultural industry ・Rethinking the role of the elderly in society ・Healthy and happy seniors	・Globalization of modern ethnic art ・International development of cultural industries ・Charismatic artist	・Megalopolis, Slum ・Heat island ・Hollowing out, Redevelopment ・New town	・Science fiction, UFO ・Drake's Equation ・Voyager message ・SETI (Search for Extra Terrestrial Intelligence) and ・CETI (Communication with Extra Terrestrial Intelligence)
Z4 : Future	**Longer life and lifelong learning**	**Regional and ethnic originality amidst globalization**	**Future view of the relationship between cities and farming communities**	**Life in space—fairy tale and dream**
	・Declining birthrate, Elderly wisdom ・IQ (Intelligence Quotient) and EQ (Emotion Quotient) ・Lifelong learning ・Vocational education ・Volunteer activities	・Cultural value of regional ・IT and regional internationalization ・International solidarity in local areas ・Fair trade	・City lifeline, Suburban farming community ・Organic farming, Rural city ・City and secondary nature ・Vision of future cities	・Astronaut ・Spacesuits and space food ・Space city, Astroponics ・Exercise in space

X3: Technology and Lifestyle—derived from the *Development for Eco-Communities* sub-theme

Motifs suggested by the development matrix

・(Keywords)

	Y1 : Human	Y2 : Community	Y3 : Earth	Y4 : Universe
Z1 : Universal	**Improving the standard of living and use of nature**	**Social systems not based on "use and throw away"**	**Earth altered by the actions of humans**	**Recycling and energy conserving communities and outer space**
	・Nature as capital ・Global market of natural resources ・Consumption amount and usage efficiency ・Natural resource selection ・Limit of Growth (by Donella Meadows)	・Simplified packaging ・Low-load distribution system ・Waste disposal tax system ・Reverse process manufacturing technology	・Energy revolution ・Increase in metal use ・Emergence of synthetic chemical products ・Nuclear energy ・Population explosion	・Artificial solar energy generation satellite ・Transmission of space-charged electric power ・Disposing of waste into space ・New frontiers in space
Z2 : Past	**Consumption through time**	**Urban recycling systems of the past**	**Contaminated materials and large quantities of waste products**	**Environmental problems in outer space**
	・Thrift and saving, Consumption as a virtue ・Large-scale production and consumption ・Small is Beautiful (by E. F. Schumacher)	・Recycling in the Edo period (1603−1867) ・Pre-modern recycling systems ・Water and sewerage as well as sanitation systems	・Garbage War ・Contamination of the soil, air, and water ・NIMBY (Not In My Back Yard) ・Spread of contamination, Food chain ・Final disposal facilities	・Garbage in space ・Used rockets and artificial satellites ・Prevention of pollution on the Moon and planets
Z3:Present	**Reflecting on the present use-and-discard lifestyle**	**Development of recycling and energy conservation technologies**	**Future predictions concerning the global environment a global warming**	**New technology and material development in aerospace**
	・Educated consumer ・Used products market, Product life cycle ・Maintenance service ・Collection of unwanted materials and goods ・Recycling	・Generation of electrical power from rubbish ・Fuel cell ・Reduce/Reuse/Recycle ・Development of recycled products ・Resource recovery industry	・Carbon dioxide, Greenhouse effect ・Rise in sea levels ・Chlorofluorocarbons and the depletion of the ozone layer ・Ultra-violet rays	・Experiments in a gravity-free environment (material, mechanical, bio) ・Development of solar battery material, etc.
Z4 : Future	**Future lifestyles**	**Approaches to zero-emission**	**Approaches to sustainable development**	**Recycling system for cities in space**
	・Waste-free lifestyle ・Recycling technology ・Resource recovery, Compost ・Eco-house	・Zero-emission ・Reusable energy ・Hydrogen energy ・Solar economy ・Sustainable civilization	・Poverty in developing nations ・Stripping resources ・Nature recovery efforts ・Assistance for sustainable development ・Environmental education	・Recycling system in space cities ・Terraforming ・Recycling systems in cities on the Moon and Mars

We hope that the motifs derived here will be shown through experimental implementation in site facilities.

X4: Movement and Interaction—derived from the EXPO 2005 concept: *Grand Intercultural Symphony*

Motifs suggested by the development matrix

・(Keywords)

	Y1 : Human	Y2 : Community	Y3 : Earth	Y4 : Universe
Z1 : Universal	**Progress of humans and intercultural interaction**	**Ethnic group formation, migration and interaction**	**Emergence of "spaceship Earth" consciousness**	**New frontier beyond Earth**
	・Intercultural contact ・Culture that arose in great empires ・Missionary and religious conflicts ・Intercultural coexistence and assimilation	・The origins of each ethnic group ・Ethnic migration ・Silk Road ・Nation-state, International marriage ・Nomadic people	・Awareness of the Earth's limits ・"Once the Earth was Blue" ・Earth from the spaceship Apollo	・Space city at Lagrange points ・Possibility of interplanetary migration ・Limits of the speed of light
Z2 : Past	**Natural language and non-verbal communication**	**Cultures created by immigrants and refugees**	**Global environment conservation activities that go beyond national borders**	**Competition among nations in the development of space**
	・Natural language, Standard language ・Ethnic character through gestures ・Division of region and ethnic group by language ・Language education	・Immigrant continent, Creole ・Jazz, Indigenous people ・Mixed language ・Immigrant/refugee culture ・Minority	・Marine pollution, Acid rain ・Chernobyl ・Wild animal protection, Introduces species ・Preservation vs. Conservation ・Green party	・Cold war and the space race ・Development of peaceful uses for outer space ・Advancement of international cooperation ・NASA (National Aeronautics and Space Administration) and ESA (European Space Agency)
Z3:Present	**Spoken language processing and automatic translation technology**	**Cultural affluence of a multi-ethnic society**	**International cooperation to stop pollution**	**International Space Station**
	・Automation of interpreting and translation ・Voice recognition and synthesis ・Multilingual network ・Rich language expression	・Multi-ethnic society ・Multi-ethnic nation ・Culture of multi-ethnic societies ・Racial mixing and changing perceptions concerning ethnicity	・Global environment and international treaties ・International technical exchange by corporations ・Support for developing nations ・International consumer movement ・Emissions trading	・Spaceship Mir ・International Space Station—Hope
Z4 : Future	**Global citizens linked via the Internet**	**International tourism and global community spirit**	**Consensus on a recycling and energy conserving society**	**Journeys into space and interplanetary migration plans**
	・Internet ・Cyberspace ・Tele-existence ・Virtual reality	・Overseas travel boom ・Eco-tourism ・Green tourism ・Grassroots international exchange	・Justice and equity, United Nations ・Environmental summit ・Kyoto protocol ・NGO/NPO international cooperation	・Manned expedition to Mars ・Payload researchers ・Space travel business ・Prospect of migration into space

We hope that the motifs derived here will be expressed at various events and be implemented experimentally into the EXPO 2005 site information system.

4. Example Motifs

Keywords (KW) related to each motif are included as a reference.

X1: Nature and Life—*derived from the Nature's Matrix sub-theme*

Search for the origin of life (Y1: Human/Z1: Universal)

Where did we come from? This is a fundamental question that human beings have continuously embraced. The latest results will perhaps confirm the suggestion that humans originated as part of the history of the universe.

KW: Atoms and molecules, Carbon-based life, Organic compound, Amino acid, Protein, Gene, Complex systems

Advances in medical technology and issues in bioethics (Y1: Human/Z2: Past)

Advancements in gene therapy, reproductive medicine, and transplants have brought new issues concerning bioethics into the public eye. Our attitude toward our own bodies—the aspect of nature we are closest to—and toward life are being questioned.

KW: Organ transplant, Brain death, Euthanasia, Gene therapy, Reproductive medicine, Bioethics

Intelligent information technology changing the way we live (Y1: Human/Z3: Present)

Advancements in information technology are producing amazing leaps forward in biotechnology—thereby deepening awareness toward life, especially in human intelligence and consciousness. At the same time, these advancements are changing everyday life by providing a sophisticated information environment.

KW: Artificial intelligence, Meme, Humanoid, Therapeutic robot, Bio-computer, Intelligent information environment

Genetic engineering in the present and the future (Y1: Human/Z4: Future)

As human genome analysis advances and genetic engineering technology becomes established, will the direction of development be put on a course acceptable by all? How will the future of humanity be changed? What are our responsibilities for the future?

KW: Theory of evolution, DNA library, Lessons of eugenics, Genetic engineering, Changing the course of evolution

Birth rate, infant mortality, and average life expectancy (Y2: Community/Z1: Universal)

Significant results have been achieved in the struggle for reducing the large number of children who die soon after being born. Unfortunately, however, in many impoverished areas of the world, the tragic situation of children dying continues. In regions where positive results have been achieved, new issues are appearing.

KW: Birth rate, Infant mortality rate, Family planning, Oral contraceptive, Adult diseases, Average life expectancy, Aged society

Battle against infectious disease (Y2: Community/Z2: Past)

Great achievements have been made in the battle against infectious disease due to improvements in the environment, antibiotics, and vaccines. Conversely, the battle has entered a new phase with the emergence of new threats, such as AIDS, resistant bacteria, and the re-emergence of conquered diseases.

KW: Sterilization technology, Vaccine, Immunity, Antibiotic, Resistant bacteria, Virus, AIDS

Treatment of hazardous substances (Y2: Community/Z3: Present)

Hazardous chemical substances, such as endocrine disrupting chemicals and radioactive substances, pose a serious threat to human health. The long-term effects of such substances are still not fully understood.

KW: Lethal radioactive fallout (ash), Minamata disease, Endocrine disrupting chemicals, Harmful additives, Food chain, Electromagnetic radiation

Dealing with the population explosion (Y2: Community/Z4: Future)

Following the Industrial Revolution, the world population has accelerated at an explosive rate and is now nearing ten billion people. The human race's ability to control itself in regard to the sanctity of life and the limits imposed by the planet appears to be questionable.

KW: Population growth rate, Baby boom, Food production, Satiation and hunger, Population tree, Falling birth rate and aging society, Lifespan limits

Effect of changes to energy and material cycles in nature (Y3: Earth/Z1: Universal)

Human actions have had a large effect upon the energy and material cycles found in the natural environment. The pollution of and disruptions to these cycles have disturbed the equilibrium of the sphere of life, threatening the existence of humans as well.

KW: Air and water circulation; Climatic change; Water shortage; Circulation of the elements; Water, soil, and air pollution

Signs of change in the global environment (Y3: Earth/Z2: Past)

Looking at the past, small indications have portended large changes in the global environment before they occur. Historical anecdotes found in issues such as dangerous chemical substances as well as global warming and destruction of nature are lessons for the future.

KW: Destruction of nature through agriculture and livestock farming, Fossil fuels and smog, Extinction of species, Silent Spring (by Rachel Carson)

Satellites' view of the global environment (Y3: Earth/Z3: Present)

Methods of observing our planet from outer space continue to emerge, allowing changes on the planet to be perceived more easily and from a much broader perspective. Remote observation is the watchtower for the global environment.

KW: Artificial satellites, Remote observation, Deforestation and desertification, Loss of polar ice and inland waters, Hole in the ozone layer

Changing global environment and the future of life (Y3: Earth/Z4: Future)

Various aspects of the global environment are changing. How will these changes impact life on Earth? Will human civilization betray our expectations and endanger life on Earth?

KW: Long-term changes in the biosphere, Environmental adaptation, Environment and heredity, Life in the future, Scientific eschatology

The solar system and our planet—their birth and future (Y4: Universe/Z1: Universal)

Earth formed as one part of the solar system, and the opportune positioning between Earth and the Sun gave our planet an environment capable of developing life. However, in view of the long time span of the universe, many predictions on the future of the planet have been put forward.

KW: Birth of the solar system and Earth, Earth—the water planet, Emergence of life, Future of the solar system and the destiny of Earth

History of life and the global environment (Y4: Universe/Z2: Past)

A strong connection exists between the history of life and changes in the global environment. As flora appeared, the atmosphere was formed. Furthermore, the emergence of human beings and the development of civilization have influenced changes in the global environment.

KW: Chlorophyll, Formation of the atmosphere, Solar spots, Continental drift, Extinction of the dinosaurs, Ice age, Human fossils

Advancements in solar system research and a new perspective of the earth (Y4: Universe/Z3: Present)

Advancements achieved in research of the stars in the solar system as well as diversification and refinement in remote observation and depth surveying and measurement technology have deepened our understanding of the planet—reforming people's view of the planet Earth.

KW: Moon, Exploring the planets, Observations of Earth, Plate tectonics, Meteor, Space guard

Search for the origin of the universe and matter (Y4: Universe/Z4: Future)

The destiny of Earth and the solar system is one page in the history of the universe. Interest in the solar system and Earth and familiarity with the search for the origin of the universe has strengthened the view of matter as a base of science and technology.

KW: Big bang, Elementary particles, Black hole, Powers of ten, GUT (Grand Unified Theory)

X2: Society and Culture-derived from the Art of Life sub-theme

Search for the origin of language and consciousness (Y1: Human/Z1: Universal)

What is the origin of our consciousness? How did we obtain language? The search continues for answers to the fundamental questions raised when considering humans as creators of society and as intelligent living creatures.

KW: Brain, Intelligence, Origin of consciousness, Origin of language, Thought and language, Communication

Creativity in traditional performing arts and crafts (Y1: Human/Z2: Past)

The world of art has refined the creativity of human beings and the traditional craftsmanship of the various ethnic groups across the globe. There, brilliance blooms when the skills of individuals and the commonality of races resonate in harmony.

KW: Festival, Folk tales, Traditional performing arts, Traditional crafts, Traditional food, Traditional medicine, Masterpieces of the masters, World heritage

Shaping a new image of children and the elderly (Y1: Human/Z3: Present)

The aging of society, together with computerization, will alter the way people think about education and skills. Changes in the fabric and the structure of society brought about by present civilization call for a revised image of children and the elderly.

KW: Rediscovering children, Modern education, Cultural industry, Rethinking the role of the elderly in society, Healthy and happy seniors

Longer life and lifelong learning (Y1: Human/Z4: Future)

The extension of the human lifespan will alter the image of life as well as the view of education and skill development. The meaning of continual learning throughout one's life will increase in importance as an individual's raison d'etre and as a requirement of society.

KW: Declining birthrate, Elderly wisdom, IQ (Intelligence Quotient) and EQ (Emotion Quotient) Lifelong learning, Vocational education, Volunteer activities

Gender and age in the family and community (Y2: Community/Z1: Universal)

Gender and age are fundamental attributes for living creatures. The change in consciousness related to these attributes has altered the shape of the family and community. Differences in sex and gender, and between physiological age and social age, are created.

KW: Equal opportunity for men and women, Three-generation family, Regional organizations for the elderly, Business related to the elderly, Intergenerational cooperation

Reevaluation of traditional communities (Y2: Community/Z2: Past)

Industrialization and urbanization have destroyed traditional communities and at the same time created a society in which human relationships have become insensitive and diluted. A movement to review the positive aspects of traditional communities, however, is catching on.

KW: Community, Boss and subordinate relationship, Loneliness of urbanites, Activities of community residents, Local administration and residents' organizations

Borderless art and cultural activities (Y2: Community/Z3: Present)

Within the art and cultural activities of the various ethnic groups of the world today, a mixture of individualism, ethnicism, and globalism is taking place. As art and cultural activities in the world globalize, new connections and understanding will emerge.

KW: Globalization of modern ethnic art, International development of cultural industries, Charismatic artist

Regional and ethnic originality amidst globalization (Y2: Community/Z4: Future)

Increasing globalization will bring about a borderless reassessment of the unique value of the regional and ethnic cultures found throughout the world. A clearly recognizable identity will be one of the important elements for members of the global community.

KW: Cultural value of regional industry, IT (Information Technology) and regional internationalization, International solidarity in local areas, Fair trade

Stages of civilization and use of nature (Y3: Earth/Z1: Universal)

Surrounded by nature, human beings began to strive for a collective economy and by adopting agriculture and livestock farming, took the first step toward civilization—leading to great changes in the global environment. The impact of this first step was rapidly magnified following the Industrial Revolution.

KW: Neolithic era, Jomon (ca. 10,000 B.C.–ca. 300 B.C.) culture, Beginning of agriculture and livestock farming, Industrial Revolution, Industrial belt, Urban civilization

Environmental issues before the Industrial Revolution (Y3: Earth/Z2: Past)

Large-scale environmental destruction occurred even before the Industrial Revolution: deforestation and desertification, brought about by agriculture and livestock farming. Through these processes, we have learned substantial lessons concerning utilization of nature.

KW: Effect of agriculture and livestock farming, Forests and use of wood as a fuel, Flood control, Crop rotation, Traditional resource management

Urbanization of Earth and the road to urban renewal (Y3: Earth/Z3: Present)

As the world has modernized, populations have concentrated in the cities, embowering the Earth in urban civilization. Cities have detached themselves from nature to create an artificial living space that tends to polarize itself with nature. Cities continue to survive under the effort of regeneration.

KW: Megalopolis, Slum, Heat island, Hollowing out, Redevelopment, New town

Future view of the relationship between cities and farming communities (Y3: Earth/Z4: Future)

Cities are recovering their relationship with nature and the areas that supply food and water and searching for the ideal form to take, in order to rebuild the base that supports the city and realize a life of coexistence with nature.

KW: City lifeline, Suburban farming community, Organic farming, Rural city, City and secondary nature, Vision of future cities

Image of the universe and the story of creation—hexaemeron (Y4: Universe/Z1: Universal)

The orderly movement of the celestial bodies has stimulated and developed the intellectual activities of humans. From ancient times, human beings have drawn images of the universe that have caused them to ponder the beginning and end of the cosmos.

KW: Images of the universe, Hexaemeron, Celestial being, Legendary place, Images of Earth and the world map

Calendars and Festivals, astrology and life in the four seasons (Y4: Universe/Z2: Past)

The orderly movement of the celestial bodies brings about the changes in the seasons. Such movements have become common knowledge to those in agriculture and livestock farming and have created a rich culture lifestyle throughout all civilizations, including in cities.

KW: Observations of celestial movement, History of astrology, Traditional calendars, Calendars and life in the four seasons, seasonal festivals/events

Interest in extra terrestrial intelligence (Y4: Universe/Z3: Present)

As the laws of celestial motion have become clear and land to pioneer on Earth has disappeared, the universe, outer space, has become the new frontier. It is in this new frontier that life outside our present knowledge may be found—a subject of great interest for all, children as well as adults.

KW: Science fiction, UFO, Drake's Equation, Voyager message, SETI (Search for Extra Terrestrial Intelligence) and CETI (Communication with Extra Terrestrial Intelligence)

Life in space—fairy tale and dream (Y4: Universe/Z4: Future)

The stage for human activity is expanding into outer space, with astronauts at the vanguard. Living in space has changed from once being a fairy tale to now being a dream of tomorrow and is talked of in more and more real terms with each passing day.

KW: Astronaut, Spacesuits and space food, Space city, Astroponics, Exercise in space

X3: Technology and Lifestyle-derived from the Development for Eco-Communities sub-theme

Improving the standard of living and the use of nature (Y1: Human/Z1: Universal)

The increase in our skill for making use of nature has improved our ability to manufacture. In turn, this had led to the popularization of an affluent, consumption-based lifestyle. In one way, the improvement in the standard of living has created distance from nature. As our use of nature changes, so will our view of nature itself change.

KW: Nature as capital, Global market of natural resources, Consumption amount and usage efficiency, Natural resource selection, Limit of Growth (by Donella Meadows)

Consumption through time (Y1: Human/Z2: Past)

The characteristics of consumption in different time periods not only reflect the technology and social systems governing methods of distribution and production prevalent in each period but also the various values of the people. Consumption behavior is a mirror of culture.

KW: Thrift and saving, Consumption as a virtue, Large-scale production and consumption, Small is Beautiful (by E. F. Schumacher)

Reflecting on the present use-and-discard lifestyle (Y1: Human/Z3: Present)

The use-and-discard lifestyle created by the large-scale production and consumption industrial system of modern technology is something that many consumers have begun reflecting upon-resulting in the search for a new lifestyle.

KW: Educated consumer, Used products market, Product life cycle, Maintenance service, Collection of unwanted materials and goods, Recycling

Future lifestyles (Y1: Human/Z4: Future)

At present, even people who for a long time had pursued only affluence are now searching for a new consumer lifestyle by breaking away from their use-and-discard lifestyles. In turn, they are beginning to create a new lifestyle for the future.

KW: Waste-free lifestyle, Recycling technology, Resource recovery, Compost, Eco-house

Social systems not based on "use and throw away" (Y2: Community/Z1: Universal)

In order to break away from a use-and-discard lifestyle, a recycling production and consumption system must be created. The creation of such a system and cooperation by producers and consumers alike is needed.

KW: Simplified packaging, Low-load distribution system, Waste disposal tax system, Reverse process manufacturing technology

Urban recycling systems of the past (Y2: Community/Z2: Past)

Recycling production and consumption systems were utilized in pre-modern cities. Assumed to have gone hand in hand with agriculture-based societies, such systems provide us with suggestions today.

KW: Recycling in the Edo period (1603–1867), Pre-modern recycling systems, Water and sewerage as well as sanitation systems

Development of recycling and energy conservation technologies (Y2: Community/Z3: Present)

A production and consumption system that does not simply use-and-discard is progressing into the development of a full-scale recycling system that reuses heat collected from waste incineration as a resource.

KW: Generation of electrical power from rubbish, Fuel cell, Reduce/Reuse/Recycle, Development of recycled products, Resource recovery industry

Approaches to zero-emissions (Y2: Community/Z4: Future)

Efforts are being made to reduce emissions that are an environmental burden to zero in combination with lifestyle changes and the development of recycling and energy conservation technologies.

KW: Zero-emission, Reusable energy, Hydrogen energy, Solar economy, Sustainable civilization

Earth altered by the actions of humans (Y3: Earth/Z1: Universal)

Since the Age of Agriculture, human beings' actions have changed the environment. After the Industrial Revolution, the scale of change became worldwide due to the increase in use of fossil fuels. Coupled with

the increase in population, all forms of consumption increased explosively.

KW: Energy revolution, Increase in metal use, Emergence of synthetic chemical products, Nuclear energy, Population explosion

Contaminated materials and large quantities of waste products (Y3: Earth/Z2: Past)

In the past, when it became clear that some chemical substances had a harmful effect on people's health and/or killed plants and animals, some believed that merely controlling the problem causing substances would be enough. However, this situation has changed as the world has become flooded with large amounts of waste products.

KW: Garbage War; Contamination of the soil, air, and water; NIMBY (Not In My Back Yard); Spread of contamination; Final disposal facilities

Future predictions concerning the global environment and global warming (Y3: Earth/Z3: Present)

The two prime examples of the global-scale effects of emissions are the increase in ultra-violet rays, resulting from the depletion of the ozone layer by chlorofluorocarbons; and the increase in temperature across the globe, brought about by the greenhouse effect caused by carbon dioxide. These problems need to be addressed.

KW: Carbon dioxide, Greenhouse effect, Rise in sea levels, Chlorofluorocarbons and the depletion of the ozone layer, Ultra-violet rays

Approaches to sustainable development (Y3: Earth/Z4: Future)

Under limits imposed by the environment and the amount of available natural resources, many countries consider development aimed at raising the standard of living to be essential. Effective and sustainable development strategies are now called for, and positive results are starting to be attained.

KW: Poverty in developing nations, Stripping resources, Nature recovery efforts, Assistance for sustainable development, Environmental education

Recycling and energy conserving communities and outer space (Y4: Universe/Z1: Universal)

As plans to dispose of radioactive waste outside of Earth and send aloft artificial solar energy generation satellites indicate, new issues lie in waiting in outer space for the purpose of creating recycling and energy conserving communities that protect the global environment.

KW: Artificial solar energy generation satellite, Transmission of space-charged electric power, Disposing of waste into space, New frontiers in space

Environmental problems in outer space (Y4: Universe/Z2: Past)

The history of space development has already caused environmental problems, as can be seen in the accumulation in space of rockets and artificial satellites that have finished their missions and the effects they have had on celestial bodies in the solar system as a result of their searches.

KW: Garbage in space, Used rockets and artificial satellites, Prevention of pollution on the Moon and planets

New technology and material development in aerospace (Y4: Universe/Z3: Present)

Scientific experiments conducted in the gravity-free environment of space stations are expected to contribute to the advancement of recycling and energy conservation technologies, such as the development of new materials used in solar energy generation panels.

KW: Experiments in a gravity-free environment (material, mechanical, bio), Development of solar battery material, etc.

Recycling system for cities in space (Y4: Universe/Z4: Future)

In cities built in space, technology that uses recycled materials and energy conservation will be vital. Space development will also most likely contribute to the creation of recycling and energy conservation systems on Earth.

KW: Recycling system in space cities, Terraforming, Recycling systems in cities on the Moon and Mars

X4: Movement and Interaction-derived from the EXPO 2005 concept: Grand Intercultural Symphony

Progress of humans and intercultural interaction (Y1: Human/Z1: Universal)

People throughout the world foster the unique culture of the region or ethnic group to which they belong, while also endeavoring to enrich their own culture through the stimulation received by interacting with other cultures. Such interaction takes many forms, from peaceful coexistence to conflict.

KW: Intercultural contact, Culture that arose in great empires, Missionary and religious conflicts, Intercultural coexistence and assimilation

Natural language and non-verbal communication (Y1: Human/Z2: Past)

Natural language and non-verbal communication have developed within the formation of human society and have shaped the culture of all races. At the same time as characterizing each culture, natural language and non-verbal communication have also created differences in verbal languages.

KW: Natural language, Standard language, Ethnic character through gestures, Division of region and ethnic group by language, Language education

Spoken language processing and automatic translation technology (Y1: Human/Z3: Present)

High hopes are placed on the development of a combination of voice recognition, speech/voice synthesis, and automatic translation technology that will allow conversations between people using differing languages. The purpose of such technology is to overcome the barrier created by language differences while also allowing each ethnic group to maintain the richness of culture found in their respective languages.

KW: Automation of interpreting and translation, Voice recognition and synthesis, Multilingual network, Rich language expression

Global citizens linked via the Internet (Y1: Human/Z4: Future)

Individuals are now connected by a global-scale network that incorporates automated translation developed using IT (Information Technology). Once we reach the stage where everyone is able to freely send and receive messages anywhere in the world, new possibilities for a global society will become visible.

KW: Internet, Cyberspace, Tele-existence, Virtual reality

Ethnic group formation, migration and interaction (Y2: Community/Z1: Universal)

Most races on Earth have been formed through migration followed by permanent settlement. Ethnic migration gave rise to contact with other ethnic groups, and in turn, changes took place creating new ethnic groups and cultures. This has made civilization more affluent.

KW: The origins of each ethnic group, Ethnic migration, Silk Road, Nation-state, International marriage, Nomadic people

Cultures created by immigrants and refugees (Y2: Community/Z2: Past)

The culture of China, which has spread through the world, and the cultures of Europe, Africa, and other regions that have spread to North and South America have alternatively created a new set of cultural values.

KW: Immigrant continent, Creole, Jazz, Indigenous people, Mixed language, Immigrant/refugee culture, Minority

Cultural affluence of a multi-ethnic society (Y2: Community/Z3: Present)

Advances in transportation and the expanse of international interchange have allowed each multi-ethnic society throughout the world to develop a borderless and multi-faceted sense of solidarity—fostering new identities and creating greater cultural affluence.

KW: Multi-ethnic society, multi-ethnic nation, Culture of multi-ethnic societies, Racial mixing and changing perceptions concerning ethnicity

International tourism and global community spirit (Y2: Community/Z4: Future)

The popularization of travel to other countries is steadily broadening people's view of the world. This is contributing to the formation of a global community spirit that will protect the global environment and become the base on which a recycling and energy conserving society will be constructed.

KW: Overseas travel boom, Eco-tourism, Green tourism, Grassroots international exchange

Emergence of "spaceship Earth" consciousness (Y3: Earth/Z1: Universal)

In the latter half of the 20th century when most people felt the limits imposed by our planet, a new consciousness was born in which many regarded humans as passengers sharing in the destiny of and along for the ride on "spaceship Earth." This view was further strengthened after a complete picture of the Earth was taken from a spaceship heading for the moon.

KW: Awareness of the Earth's limits, "Once the Earth was Blue," Earth from the spaceship Apollo

Global environment conservation activities that go beyond national borders (Y3: Earth/Z2: Past)

In order to protect wild animals and to stop the further expansion of already widespread environmental pollution, international cooperation at a variety of levels has developed and spread—leading to enhanced awareness that goes beyond the boundaries of national borders.

KW: Marine pollution, Acid rain, Chernobyl, Wild animal protection, Introduced species, Preservation vs. Conservation, Green party

International cooperation to stop pollution (Y3: Earth/Z3: Present)

Today, diversified and widespread modes of international cooperation have been established for the purpose of stopping occurrences of contamination of the environment arising from radioactive material leakage, chlorofluorocarbon and carbon dioxide emissions, and marine pollution created by oil spills.

KW: Global environment and international treaties, International technical exchange by corporations, Support for developing nations, International consumer movement, Emissions trading

Consensus on a recycling and energy conserving society (Y3: Earth/Z4: Future)

It is essential that a number of social adjustments take place, including the abdication of self-serving interests, in order to make a recycling and energy conserving society possible. To implement this goal, international consensus is vital. At present, efforts to make it a reality are underway.

KW: Justice and equity, United Nations, Environmental summit, Kyoto protocol, NGO/NPO international cooperation

New frontier beyond Earth? (Y4: Universe/Z1: Universal)

As the desolation of the earth continues and population explosions exceed the ability of the planet to support, will humans be able to search for a new world beyond Earth? What will new knowledge of the solar system and space technology tell us?

KW: Space city at Lagrange points, Possibility of interplanetary migration, Limits of the speed of light

Competition among nations in the development of space (Y4: Universe/Z2: Past)

There was a time when the development of space was spurred by the energy of competition and conflict among nations. Space technology started with weapons, but as the consciousness of the technology for peaceful utilization of outer space deepened, more international cooperation began.

KW: Cold war and the space race, Development of peaceful uses for outer space, Advancement of international cooperation, NASA (National Aeronautics and Space Administration) and ESA (European Space Agency)

International Space Station (Y4: Universe/Z3: Present)

The International Space Station is being created as the base for peaceful utilization of space, through cooperation among countries that were once competing against each other. This has enhanced the international circle of cooperation and may even be called the first step toward an international space city.

KW: Spaceship Mir, International Space Station—Hope

Journeys into space and interplanetary migration plans (Y4: Universe/Z4: Future)

Will the day come when migration and interaction, the primary factors for human development thus far, spread to the outer reaches of the universe? It surely won't be the day when human beings, who were born and brought up on Earth, abandon this planet.

KW: Manned expedition to Mars, Payload researchers, Space travel business, Prospect of migration into space

Example Exhibition Proposal Derived from the Motif Matrix

Introduction

To facilitate effective use of these guidelines, the following list of examples—based on three purely hypothetical exhibitors—detail the process involved in deriving exhibition themes and exhibition configurations from the presented motif matrix examples (X1-X4). The examples are adapted to the characteristics of three hypothetical participants. Our hope is that these will assist participants in forming an image of what is expected in terms of exhibition themes.

The following are purely hypothetical (i.e., not related to any actual nation, region, international organization, or corporate body) examples of possible ways to proceed with the task of deriving an exhibition theme

Example exhibition proposal derived from the motif matrix Case (1)- Hypothetical developing nation

Nature and Life
—derived from the *Nature's Matrix* sub-theme

	Y1 : Human	Y2 : Community	Y3 : Earth	Y4 : Universe
Z1 : Universal	**Search for the origin of life**	**Birth rate, infant mortality, and average life expectancy**	**Effect of changes to energy and material cycles in nature**	**The solar system and our planet their birth and future**
	· Atoms and molecules · Carbon-based life, Organic compound · Amino acid, Protein · Gene, Complex systems	· Birth rate, Infant mortality rate · Family planning, Oral contraceptive · Adult diseases, Average life expectancy · Aged society	· Air and water circulation, Climatic change · Water shortage · Circulation of the elements · Water, soil, and air pollution	· Birth of the solar system and Earth · Earth—the water planet · Emergence of life · Future of the solar system and the destiny of Earth
Z2 : Past	**Advances in medical technology and issues in bioethics**	**Battle against infectious disease**	**Signs of change in the global environment**	**History of life and the global environment**
	· Organ transplant, Brain death · Euthanasia, Gene therapy · Reproductive medicine, Bioethics	· Sterilization technology, Vaccine · Immunity, Antibiotic · Resistant bacteria, Virus · AIDS	· Destruction of nature through agriculture and livestock farming · Fossil fuels and smog · Extinction of species · Silent Spring (by Rachel Carson)	· Chlorophyll, Formation of the atmosphere · Solar spots, Continental drift · Extinction of the dinosaurs, Ice age · Human fossils
Z3:Present	**Intelligent information technology changing the way we live**	**Treatment of hazardous substances**	**Satellites' view of the global environment**	**Advancements in solar system research and a new perspective of the earth**
	· Artificial intelligence, Meme · Humanoid · Therapeutic robot · Bio-computer · Intelligent information environment	· Lethal radioactive fallout (ash), Minamata disease · Endocrine disrupting chemicals · Harmful additives, Food chain · Electromagnetic radiation	· Artificial satellites, Remote observation · Deforestation and desertification · Loss of polar ice and inland waters · Hole in the ozone layer	· Moon, Exploring the planets · Observations of Earth · Plate tectonics · Meteor · Space guard
Z4 : Future	**Genetic engineering in the present and the future**	**Dealing with the population explosion**	**Changing global environment and the future of life**	**Search for the origin of the universe and matter**
	· Theory of evolution · DNA library · Lessons of eugenics · Genetic engineering · Changing the course of evolution	· Population growth rate · Baby boom · Food production, Satiation and hunger · Population tree, Falling birth rate and aging society · Lifespan limits	· Long-term changes in the biosphere · Environmental adaptation · Environment and heredity · Life in the future · Scientific eschatology	· Big bang · Elementary particles · Black hole · Powers of ten · GUT (Grand Unified Theory)

Technology and Lifestyle
—derived from the *Development for Eco-Communities* sub-theme

	Y1 : Human	Y2 : Community	Y3 : Earth	Y4 : Universe
Z1 : Universal	**Improving the standard of living and use of nature**	**Social systems not based on "use and throw away"**	**Earth altered by the actions of humans**	**Recycling and energy conserving communities and outer space**
	· Nature as capital · Global market of natural resources · Consumption amount and usage efficiency · Natural resource selection · Limit of Growth (by Donella Meadows)	· Simplified packaging · Low-load distribution system · Waste disposal tax system · Reverse process manufacturing technology	· Energy revolution · Increase in metal use · Emergence of synthetic chemical products · Nuclear energy · Population explosion	· Artificial solar energy generation satellite · Transmission of space-charged electric power · Disposing of waste into space · New frontiers in space
Z2 : Past	**Consumption through time**	**Urban recycling systems of the past**	**Contaminated materials and large quantities of waste products**	**Environmental problems in outer space**
	· Thrift and saving, Consumption as a virtue · Large-scale production and consumption · Small is Beautiful (by E. F. Schumacher)	· Recycling in the Edo period (1603–1867) · Pre-modern recycling systems · Water and sewerage as well as sanitation systems	· Garbage War · Contamination of the soil, air, and water · NIMBY (Not In My Back Yard) · Spread of contamination, Food chain · Final disposal facilities	· Garbage in space · Used rockets and artificial satellites · Prevention of pollution on the Moon and planets
Z3:Present	**Reflecting on the present use-and-discard lifestyle**	**Development of recycling and energy conservation technologies**	**Future predictions concerning the global environment an global warming**	**New technology and material development in aerospace**
	· Educated consumer · Used products market, Product life cycle · Maintenance service · Collection of unwanted materials and goods · Recycling	· Generation of electrical power from rubbish · Fuel cell · Reduce/Reuse/Recycle · Development of recycled products · Resource recovery industry	· Carbon dioxide, Greenhouse effect · Rise in sea levels · Chlorofluorocarbons and the depletion of the ozone layer · Ultra-violet rays	· Experiments in a gravity-free environment (material, mechanical, bio) · Development of solar battery material, etc.
Z4 : Future	**Future lifestyles**	**Approaches to zero-emission**	**Approaches to sustainable development**	**Recycling system for cities in space**
	· Waste-free lifestyle · Recycling technology · Resource recovery, Compost · Eco-house	· Zero-emission · Reusable energy · Hydrogen energy · Solar economy · Sustainable civilization	· Poverty in developing nations · Stripping resources · Nature recovery efforts · Assistance for sustainable development · Environmental education	· Recycling system in space cities · Terraforming · Recycling systems in cities on the Moon and Mars

Exhibition Theme: Ethnic Coexistence; Coexistence with Nature

Our nation features a multiethnic group coexisting in union with a land made up of an array of biota and a rich tropical forest. We have developed policies linking our nation's economy, one which has taken off due to the wealth of its natural resources, to continuous growth, and formed a national ideology that responds to globalization while upholding and protecting the natural environment and our ethnic culture.

Exhibition Configuration

1. Ethnic Song:

This song will emphasize our nation with its multiethnic coexistence as a lead-in. Here, the multitudes of ethnic culture that form the nation are expressed in an enjoyable manner through folksongs and performing arts.

2. Forest Song:

The forest song presents the abundance of biota in the tropical forest (the symbol of the land)— which contains appealing wildlife and the lifestyles and culture of the people there. This environmental production focused on the forest presents the arrival of a crisis due to timber exports and a desirable approach for sustainable use of the forest resources.

a) Shadow play of the interaction between people and the forest gods
b) Reproduction of the traditional forest lifestyle
c) Visual zoo of the forest wildlife, including endangered species
d) Foreign earnings from forest resources and devastation from clear-cutting
e) Efforts to revitalize the forest

3. Prospects of becoming a wealthy country

The road to industrialization has opened through the wealth of forest resources. However, we know that the asset-stripping felling will not continue. The moral lessons learned from efforts made toward permanent forestry management have led to the creation of a national strategy aimed at improving people's lifestyles through sustainable development. This area unfolds using a variety of methods.

a) Turning traditional industries into international markets (trade shows)
b) Nurturing of a high value-added manufacturing (trade shows and visual library)
c) Diffusion of education and information technology (animated movie depicting the dreams of future generations)
d) Creation of strategies for international markets and continuous growth (Graphics of travel depicting the search for the ideas of tomorrow)

4. Net Café

A Net Café making good use of the traditional crafts and products of the nation. Offering traditional food and a traditionally designed interior, it will provide the latest information and bring together the opinions of visitors.

Society and Culture
—derived from the *Art of Life* sub-theme

	Y1 : Human	Y2 : Community	Y3 : Earth	Y4 : Universe
Z1 : Universal	**Search for the origin of language and consciousness**	**Gender and age in the family and community**	**Stages of civilization and use of nature**	**Image of the universe and the story of creation—hexaemeron**
	· Brain, Intelligence · Origin of consciousness · Origin of language · Thought and language · Communication	· Equal opportunity for men and women · Three-generation family · Regional organizations for the elderly · Business related to the elderly · Intergenerational cooperation	· Nelothic era, Jomon culture · Beginning of agriculture and livestock farming · Industrial Revolution · Industrial belt · Urban civilization	· Images of the universe, Hexaemeron · Celestial being · Legendary place · Images of Earth and the world map
Z2 : Past	**Creativity in traditional performing arts and crafts**	**Reevaluation of traditional communities**	**Environmental issues before the Industrial Revolution**	**Calendars and Festivals, astrology and life in the four seasons**
	· Festival, Folk tales, Traditional performing arts · Traditional crafts, Traditional food · Traditional medicine · Masterpieces of the masters · World heritage	· Community · Boss and subordinate relationship · Loneliness of urbanites · Activities of community residents · Local administration and residents' organizations	· Effect of agriculture and livestock farming · Forests and use of wood as a fuel · Flood control · Crop rotation · Traditional resource management	· Observations of celestial movement · History of astrology · Traditional calendars · Calendars and life in the four seasons · seasonal festivals/events
Z3:Present	**Shaping a new image of children and the elderly**	**Borderless art and cultural activities**	**Urbanization of Earth and the road to urban renewal**	**Interest in extra terrestrial intelligence**
	· Rediscovering children · Modern education, Cultural industry · Rethinking the role of the elderly in society · Healthy and happy seniors	· Globalization of modern ethnic art · International development of cultural industries · Charismatic artist	· Megalopolis, Slum · Heat island · Hollowing out, Redevelopment · New town	· Science fiction, UFO · Drake's Equation · Voyager message · SETI (Search for Extra Terrestrial Intelligence) and · CETI (Communication with Extra Terrestrial Intelligence)
Z4 : Future	**Longer life and lifelong learning**	**Regional and ethnic originality amidst globalization**	**Future view of the relationship between cities and farming communities**	**Life in space—fairy tale and dream**
	· Declining birthrate, Elderly wisdom · IQ (Intelligence Quotient) and EQ (Emotion Quotient) · Lifelong learning · Vocational education · Volunteer activities	· Cultural value of regional · IT and regional internationalization · International solidarity in local areas · Fair trade	· City lifeline, Suburban farming community · Organic farming, Rural city · City and secondary nature · Vision of future cities	· Astronaut · Spacesuits and space food · Space city, Astroponics · Exercise in space

Movement and Interaction
—derived from the EXPO 2005 concept: *Grand Intercultural Symphony*

	Y1 : Human	Y2 : Community	Y3 : Earth	Y4 : Universe
Z1 : Universal	**Progress of humans and intercultural interaction**	**Ethnic group formation, migration and interaction**	**Emergence of "spaceship Earth" consciousness**	**New frontier beyond Earth**
	· Intercultural contact · Culture that arose in great empires · Missionary and religious conflicts · Intercultural coexistence and assimilation	· The origins of each ethnic group · Ethnic migration · Silk Road · Nation-state, International marriage · Nomadic people	· Awareness of the Earth's limits · "Once the Earth was Blue" · Earth from the spaceship Apollo	· Space city at Lagrange points · Possibility of interplanetary migration · Limits of the speed of light
Z2 : Past	**Natural language and non-verbal communication**	**Cultures created by immigrants and refugees**	**Global environment conservation activities that go beyond national borders**	**Competition among nations in the development of space**
	· Natural language, Standard language · Ethnic character through gestures · Division of region and ethnic group by language · Language education	· Immigrant continent, Creole · Jazz, Indigenous people · Mixed language · Immigrant/refugee culture · Minority	· Marine pollution, Acid rain · Chernobyl · Wild animal protection, Introduces species · Preservation vs. Conservation · Green party	· Cold war and the space race · Development of peaceful uses for outer space · Advancement of international cooperation · NASA (National Aeronautics and Space Administration) and ESA (European Space Agency)
Z3:Present	**Spoken language processing and automatic translation technology**	**Cultural affluence of a multi-ethnic society**	**International cooperation to stop pollution**	**International Space Station**
	· Automation of interpreting and translation · Voice recognition and synthesis · Multilingual network · Rich language expression	· Multi-ethnic society · Multi-ethnic nation · Culture of multi-ethnic societies · Racial mixing and changing perceptions concerning ethnicity	· Global environment and international treaties · International technical exchange by corporations · Support for developing nations · International consumer movement · Emissions trading	· Spaceship Mir · International Space Station—Hope
Z4 : Future	**Global citizens linked via the Internet**	**International tourism and global community spirit**	**Consensus on a recycling and energy conserving society**	**Journeys into space and interplanetary migration plans**
	· Internet · Cyberspace · Tele-existence · Virtual reality	· Overseas travel boom · Eco-tourism · Green tourism · Grassroots international exchange	· Justice and equity, United Nations · Environmental summit · Kyoto protocol · NGO/NPO international cooperation	· Manned expedition to Mars · Payload researchers · Space travel business · Prospect of migration into space

Example exhibition proposal derived from the motif matrix Case (2) – Hypothetical developed industrial nation

Nature and Life
—derived from the *Nature's Matrix* sub-theme

	Y1 : Human	Y2 : Community	Y3 : Earth	Y4 : Universe
Z1 : Universal	**Search for the origin of life**	**Birth rate, infant mortality, and average life expectancy**	**Effect of changes to energy and material cycles in nature**	**The solar system and our planet their birth and future**
	· Atoms and molecules · Carbon-based life, Organic compound · Amino acid, Protein · Gene, Complex systems	· Birth rate, Infant mortality rate · Family planning, Oral contraceptive · Adult diseases, Average life expectancy · Aged society	· Air and water circulation, Climatic change · Water shortage · Circulation of the elements · Water, soil, and air pollution	· Birth of the solar system and Earth · Earth—the water planet · Emergence of life · Future of the solar system and the destiny of Earth
Z2 : Past	**Advances in medical technology and issues in bioethics**	**Battle against infectious disease**	**Signs of change in the global environment**	**History of life and the global environment**
	· Organ transplant, Brain death · Euthanasia, Gene therapy · Reproductive medicine, Bioethics	· Sterilization technology, Vaccine · Immunity, Antibiotic · Resistant bacteria, Virus · AIDS	· Destruction of nature through agriculture and livestock farming · Fossil fuels and smog · Extinction of species · Silent Spring (by Rachel Carson)	· Chlorophyll, Formation of the atmosphere · Solar spots, Continental drift · Extinction of the dinosaurs, Ice age · Human fossils
Z3:Present	**Intelligent information technology changing the way we live**	**Treatment of hazardous substances**	**Satellites' view of the global environment**	**Advancements in solar system research and a new perspective of the earth**
	· Artificial intelligence, Meme · Humanoid · Therapeutic robot · Bio-computer · Intelligent information environment	· Lethal radioactive fallout (ash), Minamata disease · Endocrine disrupting chemicals · Harmful additives, Food chain · Electromagnetic radiation	· Artificial satellites, Remote observation · Deforestation and desertification · Loss of polar ice and inland waters · Hole in the ozone layer	· Moon, Exploring the planets · Observations of Earth · Plate tectonics · Meteor · Space guard
Z4 : Future	**Genetic engineering in the present and the future**	**Dealing with the population explosion**	**Changing global environment and the future of life**	**Search for the origin of the universe and matter**
	· Theory of evolution · DNA library · Lessons of eugenics · Genetic engineering · Changing the course of evolution	· Population growth rate · Baby boom · Food production, Satiation and hunger · Population tree, Falling birth rate and aging society · Lifespan limits	· Long-term changes in the biosphere · Environmental adaptation · Environment and heredity · Life in the future · Scientific eschatology	· Big bang · Elementary particles · Black hole · Powers of ten · GUT (Grand Unified Theory)

Technology and Lifestyle
—derived from the *Development for Eco-Communities* sub-theme

	Y1 : Human	Y2 : Community	Y3 : Earth	Y4 : Universe
Z1 : Universal	**Improving the standard of living and use of nature**	**Social systems not based on "use and throw away"**	**Earth altered by the actions of humans**	**Recycling and energy conserving communities and outer space**
	· Nature as capital · Global market of natural resources · Consumption amount and usage efficiency · Natural resource selection · Limit of Growth (by Donella Meadows)	· Simplified packaging · Low-load distribution system · Waste disposal tax system · Reverse process manufacturing technology	· Energy revolution · Increase in metal use · Emergence of synthetic chemical products · Nuclear energy · Population explosion	· Artificial solar energy generation satellite · Transmission of space-charged electric power · Disposing of waste into space · New frontiers in space
Z2 : Past	**Consumption through time**	**Urban recycling systems of the past**	**Contaminated materials and large quantities of waste products**	**Environmental problems in outer space**
	· Thrift and saving, Consumption as a virtue · Large-scale production and consumption · Small is Beautiful (by E. F. Schumacher)	· Recycling in the Edo period (1603–1867) · Pre-modern recycling systems · Water and sewerage as well as sanitation systems	· Garbage War · Contamination of the soil, air, and water · NIMBY (Not In My Back Yard) · Spread of contamination, Food chain · Final disposal facilities	· Garbage in space · Used rockets and artificial satellites · Prevention of pollution on the Moon and planets
Z3:Present	**Reflecting on the present use-and-discard lifestyle**	**Development of recycling and energy conservation technologies**	**Future predictions concerning the global environment an global warming**	**New technology and material development in aerospace**
	· Educated consumer · Used products market, Product life cycle · Maintenance service · Collection of unwanted materials and goods · Recycling	· Generation of electrical power from rubbish · Fuel cell · Reduce/Reuse/Recycle · Development of recycled products · Resource recovery industry	· Carbon dioxide, Greenhouse effect · Rise in sea levels · Chlorofluorocarbons and the depletion of the ozone layer · Ultra-violet rays	· Experiments in a gravity-free environment (material, mechanical, bio) · Development of solar battery material, etc.
Z4 : Future	**Future lifestyles**	**Approaches to zero-emission**	**Approaches to sustainable development**	**Recycling system for cities in space**
	· Waste-free lifestyle · Recycling technology · Resource recovery, Compost · Eco-house	· Zero-emission · Reusable energy · Hydrogen energy · Solar economy · Sustainable civilization	· Poverty in developing nations · Stripping resources · Nature recovery efforts · Assistance for sustainable development · Environmental education	· Recycling system in space cities · Terraforming · Recycling systems in cities on the Moon and Mars

Exhibition Theme: Links of Cooperation—Bonds with Citizens, Bonds with the World

Our country takes pride in its advanced industrial technology and culture supported by traditional agriculture. It fulfills its international responsibility in the globalizing market economy while seeking to continue consensus-building among residents whom all have differing interests. The axis of this strategy is the emphasis on cooperation with developing nations and the creation of a new industrial structure that is supported by advanced technology.

Exhibition Configuration

1. Links of Cooperation—bonds with citizens, bonds with the world

The international activities of our country's array of NGOs and NPOs and the cooperative relationships with various types of international organizations will be expressed through large-scale visuals. These will emphasize our global-scale vision and vitality as a lead-in.

2. New Wisdom and Solidarity Derived from Tension

Now as we are at the turning point of two hundred years of history as a developed nation, a number of social tensions are surfacing. However, at the same time, new wisdom and solidarity are sprouting from such tensions. Here visitors will witness citizens living during this large turning point in civilization, corporations with initiative and originality, and a national government making use of that energy.

a) The attractions of agriculture and food culture (exhibition with eat-in facilities)
b) The cultural value of traditional industry (simulated design studio)
c) The historical city and nature as a tourist resource (visual theater)
d) Energy related struggles (simulation theater)
e) Visions of the land in the 21st century (Large diorama with visuals)

3. Hope Born of Wisdom—the cutting edge of science and technology

Our country has led the world in science and technology and is now an intellective country that still leads the world in advanced research and development. By introducing the people at the frontline of our nation's intellect in a warmhearted manner, and analyzing the true nature of crisis facing us, we will seek to discover the seeds of hope by focusing on the path of humankind and civilization.

a) History and future of the Universe, the ultimate shape of materials
b) The future of life and humankind, the dangers and possibilities
c) The future of resources and the environment, development of renewable resources
d) Global-scale information transmission and international cooperation

4. Global Restaurant of Fair Trade

Our country is a gathering place for people and products from around the world. Many ethnic cultures coexist and food from around the world has encouraged an array of food cultures. The dishes and the music of the world express an open national character.

Society and Culture
—derived from the *Art of Life* sub-theme

	Y1 : Human	Y2 : Community	Y3 : Earth	Y4 : Universe
Z1 : Universal	**Search for the origin of language and consciousness**	**Gender and age in the family and community**	**Stages of civilization and use of nature**	**Image of the universe and the story of creation—hexaemeron**
	· Brain, Intelligence · Origin of consciousness · Origin of language · Thought and language · Communication	· Equal opportunity for men and women · Three-generation family · Regional organizations for the elderly · Business related to the elderly · Intergenerational cooperation	· Nelothic era, Jomon culture · Beginning of agriculture and livestock farming · Industrial Revolution · Industrial belt · Urban civilization	· Images of the universe, Hexaemeron · Celestial being · Legendary place · Images of Earth and the world map
Z2 : Past	**Creativity in traditional performing arts and crafts**	**Reevaluation of traditional communities**	**Environmental issues before the Industrial Revolution**	**Calendars and Festivals, astrology and life in the four seasons**
	· Festival, Folk tales, Traditional performing arts · Traditional crafts, Traditional food · Traditional medicine · Masterpieces of the masters · World heritage	· Community · Boss and subordinate relationship · Loneliness of urbanites · Activities of community residents · Local administration and residents' organizations	· Effect of agriculture and livestock farming · Forests and use of wood as a fuel · Flood control · Crop rotation · Traditional resource management	· Observations of celestial movement · History of astrology · Traditional calendars · Calendars and life in the four seasons · seasonal festivals/events
Z3:Present	**Shaping a new image of children and the elderly**	**Borderless art and cultural activities**	**Urbanization of Earth and the road to urban renewal**	**Interest in extra terrestrial intelligence**
	· Rediscovering children · Modern education, Cultural industry · Rethinking the role of the elderly in society · Healthy and happy seniors	· Globalization of modern ethnic art · International development of cultural industries · Charismatic artist	· Megalopolis, Slum · Heat island · Hollowing out, Redevelopment · New town	· Science fiction, UFO · Drake's Equation · Voyager message · SETI (Search for Extra Terrestrial Intelligence) and · CETI (Communication with Extra Terrestrial Intelligence)
Z4 : Future	**Longer life and lifelong learning**	**Regional and ethnic originality amidst globalization**	**Future view of the relationship between cities and farming communities**	**Life in space—fairy tale and dream**
	· Declining birthrate, Elderly wisdom · IQ (Intelligence Quotient) and EQ (Emotion Quotient) · Lifelong learning · Vocational education · Volunteer activities	· Cultural value of regional · IT and regional internationalization · International solidarity in local areas · Fair trade	· City lifeline, Suburban farming community · Organic farming, Rural city · City and secondary nature · Vision of future cities	· Astronaut · Spacesuits and space food · Space city, Astroponics · Exercise in space

Movement and Interaction
—derived from the EXPO 2005 concept: *Grand Intercultural Symphony*

	Y1 : Human	Y2 : Community	Y3 : Earth	Y4 : Universe
Z1 : Universal	**Progress of humans and intercultural interaction**	**Ethnic group formation, migration and interaction**	**Emergence of "spaceship Earth" consciousness**	**New frontier beyond Earth**
	· Intercultural contact · Culture that arose in great empires · Missionary and religious conflicts · Intercultural coexistence and assimilation	· The origins of each ethnic group · Ethnic migration · Silk Road · Nation-state, International marriage · Nomadic people	· Awareness of the Earth's limits · "Once the Earth was Blue" · Earth from the spaceship Apollo	· Space city at Lagrange points · Possibility of interplanetary migration · Limits of the speed of light
Z2 : Past	**Natural language and non-verbal communication**	**Cultures created by immigrants and refugees**	**Global environment conservation activities that go beyond national borders**	**Competition among nations in the development of space**
	· Natural language, Standard language · Ethnic character through gestures · Division of region and ethnic group by language · Language education	· Immigrant continent, Creole · Jazz, Indigenous people · Mixed language · Immigrant/refugee culture · Minority	· Marine pollution, Acid rain · Chernobyl · Wild animal protection, Introduces species · Preservation vs. Conservation · Green party	· Cold war and the space race · Development of peaceful uses for outer space · Advancement of international cooperation · NASA (National Aeronautics and Space Administration) and ESA (European Space Agency)
Z3:Present	**Spoken language processing and automatic translation technology**	**Cultural affluence of a multi-ethnic society**	**International cooperation to stop pollution**	**International Space Station**
	· Automation of interpreting and translation · Voice recognition and synthesis · Multilingual network · Rich language expression	· Multi-ethnic society · Multi-ethnic nation · Culture of multi-ethnic societies · Racial mixing and changing perceptions concerning ethnicity	· Global environment and international treaties · International technical exchange by corporations · Support for developing nations · International consumer movement · Emissions trading	· Spaceship Mir · International Space Station—Hope
Z4 : Future	**Global citizens linked via the Internet**	**International tourism and global community spirit**	**Consensus on a recycling and energy conserving society**	**Journeys into space and interplanetary migration plans**
	· Internet · Cyberspace · Tele-existence · Virtual reality	· Overseas travel boom · Eco-tourism · Green tourism · Grassroots international exchange	· Justice and equity, United Nations · Environmental summit · Kyoto protocol · NGO/NPO international cooperation	· Manned expedition to Mars · Payload researchers · Space travel business · Prospect of migration into space

Example exhibition proposal derived from the motif matrix Case (3)- Hypothetical private corporation

Nature and Life
—derived from the *Nature's Matrix* sub-theme

	Y1：Human	Y2：Community	Y3：Earth	Y4：Universe
Z1：Universal	**Search for the origin of life**	**Birth rate, infant mortality, and average life expectancy**	**Effect of changes to energy and material cycles in nature**	**The solar system and our planet their birth and future**
	· Atoms and molecules · Carbon-based life, Organic compound · Amino acid, Protein · Gene, Complex systems	· Birth rate, Infant mortality rate · Family planning, Oral contraceptive · Adult diseases, Average life expectancy · Aged society	· Air and water circulation, Climatic change · Water shortage · Circulation of the elements · Water, soil, and air pollution	· Birth of the solar system and Earth · Earth—the water planet · Emergence of life · Future of the solar system and the destiny of Earth
Z2：Past	**Advances in medical technology and issues in bioethics**	**Battle against infectious disease**	**Signs of change in the global environment**	**History of life and the global environment**
	· Organ transplant, Brain death · Euthanasia, Gene therapy · Reproductive medicine, Bioethics	· Sterilization technology, Vaccine · Immunity, Antibiotic · Resistant bacteria, Virus · AIDS	· Destruction of nature through agriculture and livestock farming · Fossil fuels and smog · Extinction of species · Silent Spring (by Rachel Carson)	· Chlorophyll, Formation of the atmosphere · Solar spots, Continental drift · Extinction of the dinosaurs, Ice age · Human fossils
Z3:Present	**Intelligent information technology changing the way we live**	**Treatment of hazardous substances**	**Satellites' view of the global environment**	**Advancements in solar system research and a new perspective of the earth**
	· Artificial intelligence, Meme · Humanoid · Therapeutic robot · Bio-computer · Intelligent information environment	· Lethal radioactive fallout (ash), Minamata disease · Endocrine disrupting chemicals · Harmful additives, Food chain · Electromagnetic radiation	· Artificial satellites, Remote observation · Deforestation and desertification · Loss of polar ice and inland waters · Hole in the ozone layer	· Moon, Exploring the planets · Observations of Earth · Plate tectonics · Meteor · Space guard
Z4：Future	**Genetic engineering in the present and the future**	**Dealing with the population explosion**	**Changing global environment and the future of life**	**Search for the origin of the universe and matter**
	· Theory of evolution · DNA library · Lessons of eugenics · Genetic engineering · Changing the course of evolution	· Population growth rate · Baby boom · Food production, Satiation and hunger · Population tree, Falling birth rate and aging society · Lifespan limits	· Long-term changes in the biosphere · Environmental adaptation · Environment and heredity · Life in the future · Scientific eschatology	· Big bang · Elementary particles · Black hole · Powers of ten · GUT (Grand Unified Theory)

Technology and Lifestyle
—derived from the *Development for Eco-Communities* sub-theme

	Y1：Human	Y2：Community	Y3：Earth	Y4：Universe
Z1：Universal	**Improving the standard of living and use of nature**	**Social systems not based on "use and throw away"**	**Earth altered by the actions of humans**	**Recycling and energy conserving communities and outer space**
	· Nature as capital · Global market of natural resources · Consumption amount and usage efficiency · Natural resource selection · Limit of Growth (by Donella Meadows)	· Simplified packaging · Low-load distribution system · Waste disposal tax system · Reverse process manufacturing technology	· Energy revolution · Increase in metal use · Emergence of synthetic chemical products · Nuclear energy · Population explosion	· Artificial solar energy generation satellite · Transmission of space-charged electric power · Disposing of waste into space · New frontiers in space
Z2：Past	**Consumption through time**	**Urban recycling systems of the past**	**Contaminated materials and large quantities of waste products**	**Environmental problems in outer space**
	· Thrift and saving, Consumption as a virtue · Large-scale production and consumption · Small is Beautiful (by E. F. Schumacher)	· Recycling in the Edo period (1603–1867) · Pre-modern recycling systems · Water and sewerage as well as sanitation systems	· Garbage War · Contamination of the soil, air, and water · NIMBY (Not In My Back Yard) · Spread of contamination, Food chain · Final disposal facilities	· Garbage in space · Used rockets and artificial satellites · Prevention of pollution on the Moon and planets
Z3:Present	**Reflecting on the present use-and-discard lifestyle**	**Development of recycling and energy conservation technologies**	**Future predictions concerning the global environment an global warming**	**New technology and material development in aerospace**
	· Educated consumer · Used products market, Product life cycle · Maintenance service · Collection of unwanted materials and goods · Recycling	· Generation of electrical power from rubbish · Fuel cell · Reduce/Reuse/Recycle · Development of recycled products · Resource recovery industry	· Carbon dioxide, Greenhouse effect · Rise in sea levels · Chlorofluorocarbons and the depletion of the ozone layer · Ultra-violet rays	· Experiments in a gravity-free environment (material, mechanical, bio) · Development of solar battery material, etc.
Z4：Future	**Future lifestyles**	**Approaches to zero-emission**	**Approaches to sustainable development**	**Recycling system for cities in space**
	· Waste-free lifestyle · Recycling technology · Resource recovery, Compost · Eco-house	· Zero-emission · Reusable energy · Hydrogen energy · Solar economy · Sustainable civilization	· Poverty in developing nations · Stripping resources · Nature recovery efforts · Assistance for sustainable development · Environmental education	· Recycling system in space cities · Terraforming · Recycling systems in cities on the Moon and Mars

Exhibition Theme: Earth and Humankind in the 22nd Century

We will make predictions about Earth and humankind in the 22nd century through a number of scenarios. Jn order to choose the most desirable scenario, we will appeal to the value of the intellectual and material resources we can provide. Here, we will introduce the various technologies that will contribute to the future of humankind as well as prediction methods that take full advantage of the knowledge gained from the cutting edge of science.

Exhibition Configuration

1. Predictions of the 21st Century by People of the Early 20th Century

What predictions about the present did people make 100 years ago when our company was inaugurated? Here, archaeological studies of the theory of the future will be seen through a virtual museum. The past that paints a future of the next century will be reviewed.

2. Scenarios of Scientists' Predictions of the 22nd Century

What scenarios do scientists possess in their predictions of 100 years into the future? Here, an interactive visual production will be provided that considers issues of the 21st century from the contrast of bright and gloomy scenarios.

a) Changes in humankind scenario
b) Conflict in society scenario
c) Living environment scenario
d) State of resources scenario
e) Global environment scenario

3. Proposals for the 21st Century

How must we approach the 21st century so as to create a better path toward the 22nd century? Jn consideration of this question, an array of technological proposals will be made: technology for a new civilization that conquer the poverty of developing nations and maintains the quality of life of developed nations whilst preserving the earth's environment.

a) Jnformation and communications technology linking citizens of the world
b) Energy technology looking beyond fossil fuels
c) Medical technology improving the quality of living throughout one's life
d) Monitoring technology that looks accurately at the state of the global environment

4. Earth Observation Station

Taking advantage of observation technology such as remote sensing, the current state of the global environment and its meaning will be displayed on a large screen. Jt will also feature a lobby that symbolizes comfortable information space in the 21st century.

Society and Culture
—derived from the *Art of Life* sub-theme

	Y1：Human	Y2：Community	Y3：Earth	Y4：Universe
Z1：Universal	**Search for the origin of language and consciousness**	**Gender and age in the family and community**	**Stages of civilization and use of nature**	**Image of the universe and the story of creation—hexaemeron**
	· Brain, Intelligence · Origin of consciousness · Origin of language · Thought and language · Communication	· Equal opportunity for men and women · Three-generation family · Regional organizations for the elderly · Business related to the elderly · Intergenerational cooperation	· Nelothic era, Jomon culture · Beginning of agriculture and livestock farming · Industrial Revolution · Industrial belt · Urban civilization	· Images of the universe, Hexaemeron · Celestial being · Legendary place · Images of Earth and the world map
Z2：Past	**Creativity in traditional performing arts and crafts**	**Reevaluation of traditional communities**	**Environmental issues before the Industrial Revolution**	**Calendars and Festivals, astrology and life in the four seasons**
	· Festival, Folk tales, Traditional performing arts · Traditional crafts, Traditional food · Traditional medicine · Masterpieces of the masters · World heritage	· Community · Boss and subordinate relationship · Loneliness of urbanites · Activities of community residents · Local administration and residents' organizations	· Effect of agriculture and livestock farming · Forests and use of wood as a fuel · Flood control · Crop rotation · Traditional resource management	· Observations of celestial movement · History of astrology · Traditional calendars · Calendars and life in the four seasons · seasonal festivals/events
Z3:Present	**Shaping a new image of children and the elderly**	**Borderless art and cultural activities**	**Urbanization of Earth and the road to urban renewal**	**Interest in extra terrestrial intelligence**
	· Rediscovering children · Modern education, Cultural industry · Rethinking the role of the elderly in society · Healthy and happy seniors	· Globalization of modern ethnic art · International development of cultural industries · Charismatic artist	· Megalopolis, Slum · Heat island · Hollowing out, Redevelopment · New town	· Science fiction, UFO · Drake's Equation · Voyager message · SETI (Search for Extra Terrestrial Intelligence) and · CETI (Communication with Extra Terrestrial Intelligence)
Z4：Future	**Longer life and lifelong learning**	**Regional and ethnic originality amidst globalization**	**Future view of the relationship between cities and farming communities**	**Life in space—fairy tale and dream**
	· Declining birthrate, Elderly wisdom · IQ (Intelligence Quotient) and EQ (Emotion Quotient) · Lifelong learning · Vocational education · Volunteer activities	· Cultural value of regional · IT and regional internationalization · International solidarity in local areas · Fair trade	· City lifeline, Suburban farming community · Organic farming, Rural city · City and secondary nature · Vision of future cities	· Astronaut · Spacesuits and space food · Space city, Astroponics · Exercise in space

Movement and Interaction
—derived from the EXPO 2005 concept: *Grand Intercultural Symphony*

	Y1：Human	Y2：Community	Y3：Earth	Y4：Universe
Z1：Universal	**Progress of humans and intercultural interaction**	**Ethnic group formation, migration and interaction**	**Emergence of "spaceship Earth" consciousness**	**New frontier beyond Earth**
	· Intercultural contact · Culture that arose in great empires · Missionary and religious conflicts · Intercultural coexistence and assimilation	· The origins of each ethnic group · Ethnic migration · Silk Road · Nation-state, International marriage · Nomadic people	· Awareness of the Earth's limits · "Once the Earth was Blue" · Earth from the spaceship Apollo	· Space city at Lagrange points · Possibility of interplanetary migration · Limits of the speed of light
Z2：Past	**Natural language and non-verbal communication**	**Cultures created by immigrants and refugees**	**Global environment conservation activities that go beyond national borders**	**Competition among nations in the development of space**
	· Natural language, Standard language · Ethnic character through gestures · Division of region and ethnic group by language · Language education	· Immigrant continent, Creole · Jazz, Indigenous people · Mixed language · Immigrant/refugee culture · Minority	· Marine pollution, Acid rain · Chernobyl · Wild animal protection, Introduces species · Preservation vs. Conservation · Green party	· Cold war and the space race · Development of peaceful uses for outer space · Advancement of international cooperation · NASA (National Aeronautics and Space Administration) and ESA (European Space Agency)
Z3:Present	**Spoken language processing and automatic translation technology**	**Cultural affluence of a multi-ethnic society**	**International cooperation to stop pollution**	**International Space Station**
	· Automation of interpreting and translation · Voice recognition and synthesis · Multilingual network · Rich language expression	· Multi-ethnic society · Multi-ethnic nation · Culture of multi-ethnic societies · Racial mixing and changing perceptions concerning ethnicity	· Global environment and international treaties · International technical exchange by corporations · Support for developing nations · International consumer movement · Emissions trading	· Spaceship Mir · International Space Station—Hope
Z4：Future	**Global citizens linked via the Internet**	**International tourism and global community spirit**	**Consensus on a recycling and energy conserving society**	**Journeys into space and interplanetary migration plans**
	· Internet · Cyberspace · Tele-existence · Virtual reality	· Overseas travel boom · Eco-tourism · Green tourism · Grassroots international exchange	· Justice and equity, United Nations · Environmental summit · Kyoto protocol · NGO/NPO international cooperation	· Manned expedition to Mars · Payload researchers · Space travel business · Prospect of migration into space