

# National Standards for Be an Eco-Hero— Tame the Savage Planet



## Activity 1

### Adapting to a Savage Planet

#### Language Arts

##### Reading for Perspective

Students read and understand a wide range of print and non-print texts to build an understanding of texts.

##### Evaluation Strategies

Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts.

##### Applying Knowledge

Students apply knowledge of language structure, language conventions, media techniques, figurative language and genre to create, critique and discuss print and non-print texts.

##### Evaluating Data

Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources to communicate their discoveries in ways that suit their purpose and audience.

##### Applying Language Skills

Students use spoken, written, and visual language to accomplish their own purposes.

## Science

### Life Science

The behavior of individual organisms is influenced by internal and external cues.



### Life cycles of organisms

Many characteristics of an organism are inherited from the parents of the organism, but other characteristics result from an individual's interactions with the environment.

An organism's patterns of behavior are related to the nature of that organism's environment, including the kinds and numbers of other organisms present, the availability of food and resources, and the physical characteristics of the environment.

## Science and Technology

Some objects occur in nature; others have been designed and made by people to solve human problems and enhance the quality of life.

### Understanding Science and Technology

People have always had questions about their world. Science is one way of answering questions and explaining the natural world.

People have always had problems and invented tools and techniques to solve problems.

Tools help scientists make better observations, measurements, and equipment for investigations. They help scientists see, measure, and do things they could not otherwise see, measure, and do.

## Technology

### Basic operations and concepts

Students demonstrate a sound understanding of the nature and operation of technology systems.

Students practice responsible use of technology systems, information, and software.

Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

### Technology productivity tools

Students use technology tools to enhance learning, increase productivity, and promote creativity.

### Technology research tools

Students use technology to locate, evaluate, and collect information from a variety of sources.



**Activity 2**

# Fighting to Protect Resources

## Language Arts

### Reading for Perspective

Students read and understand a wide range of print and non-print texts to build an understanding of texts.

### Evaluation Strategies

Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts.

### Applying Knowledge

Students apply knowledge of language structure, language conventions, media techniques, figurative language and genre to create, critique, and discuss print and non-print texts.

## Life Sciences

### Organisms and environments

All animals depend on plants.

## Earth and Space Science

### Properties of Earth Materials

Earth materials are solid rocks and soils, water, and the gases of the atmosphere. The varied materials have different physical and chemical properties, which makes them useful in different ways. Earth materials provide many of the resources that humans use.

Soils have properties of color and texture, capacity to retain water and ability to support the growth of many kinds of plants, including those in our food supply.

## Science in Personal and Social Perspectives

### Types of resources

Resources are things that we get from the living and nonliving environment to meet the needs and wants of a population.

**Activity 2: Fighting to Protect Resources**

**Part A:** Use the words from the puzzle to complete these sentences.

**Part B:** Use the words from the puzzle to complete these sentences.

**Part C:** Use the words from the puzzle to complete these sentences.

**Part D:** Use the words from the puzzle to complete these sentences.

**Part E:** Use the words from the puzzle to complete these sentences.

**Part F:** Use the words from the puzzle to complete these sentences.

**Part G:** Use the words from the puzzle to complete these sentences.

**Part H:** Use the words from the puzzle to complete these sentences.

**Part I:** Use the words from the puzzle to complete these sentences.

**Part J:** Use the words from the puzzle to complete these sentences.

**Part K:** Use the words from the puzzle to complete these sentences.

**Part L:** Use the words from the puzzle to complete these sentences.

**Part M:** Use the words from the puzzle to complete these sentences.

**Part N:** Use the words from the puzzle to complete these sentences.

**Part O:** Use the words from the puzzle to complete these sentences.

**Part P:** Use the words from the puzzle to complete these sentences.

**Part Q:** Use the words from the puzzle to complete these sentences.

**Part R:** Use the words from the puzzle to complete these sentences.

**Part S:** Use the words from the puzzle to complete these sentences.

**Part T:** Use the words from the puzzle to complete these sentences.

**Part U:** Use the words from the puzzle to complete these sentences.

**Part V:** Use the words from the puzzle to complete these sentences.

**Part W:** Use the words from the puzzle to complete these sentences.

**Part X:** Use the words from the puzzle to complete these sentences.

**Part Y:** Use the words from the puzzle to complete these sentences.

**Part Z:** Use the words from the puzzle to complete these sentences.

Some resources are basic materials, such as air, water, and soil; some are produced from basic resources, such as food, fuel, and building materials; and some resources are nonmaterial, such as quiet places, beauty, security, and safety.

### Changes in environments

Environments are the space, conditions, and factors that affect an individual's and a population's ability to survive and their quality of life.

## Social Studies; People, Place and Environments

Locate and distinguish among varying landforms and geographic features, such as mountains, plateaus, islands, and oceans

Describe and speculate about physical system changes, such as seasons, climate, and weather and the water cycle.

**Activity 3**

# Meet the Planet Protectors

### Reading for Perspective

Students read and understand a wide range of print and non-print texts to build an understanding of texts.

### Evaluation Strategies

Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts.

### Applying Language Skills

Students use spoken, written, and visual language to accomplish their own purposes.

## Science

### Understanding about Scientific Inquiry

Scientists use different kinds of investigations

**Activity 3: Meet the Planet Protectors**

**Part A:** Write the number of the Hero Factory device next to the matching description.

**Part B:** Hero Factory science might remind you of real-life technologies. In the circles below, write the number of the Hero Factory device in the box above that matches each of the real-life environmental science technologies described below.

**GPS monitor** - Monitors location and distance between objects to create maps of environmentally sensitive areas. Also helps people find their location and determine directions.

**Wildlife camera** - Records wildlife behaviors between objects to create maps of environmentally sensitive areas. Also helps people find their location and determine directions.

**Weather satellite** - Records changes in Earth's atmosphere, including temperature, cloud formations, weather, and wind conditions.

**Debris-mapping** - Measures vibrations produced by underground movements like earthquakes.

**Learn more about Q1, Q2, Q3, and Q4 at the Hero Factory Mission Control Center at the LEGO Hero Factory Science Planet DVD on October 6, 2011.**

depending on the questions they are trying to answer.

Simple instruments, such as magnifiers, thermometers, and rulers, provide more information than scientists obtain using only their senses.

Scientists develop explanations using observations (evidence) and what they already know about the world.

### Properties of objects and materials

Objects have many observable properties, including size, weight, shape, color, temperature, and the ability to react with other substances. These properties can be measured using tools.

### Organisms and environments

An organism's patterns of behavior are related to the nature of that organism's environment, including the kinds and numbers of other organisms present, the availability of food and resources, and the physical characteristics of the environment.

## Earth and Space Science

### Changes in Earth and Sky

Weather changes from day to day and over the seasons. Weather can be described by measurable quantities, such as temperature, wind direction, speed, and precipitation.

## Science and Technology

Abilities to distinguish between natural objects and objects made by humans

Some objects occur in nature; others have been designed and made by people to solve human problems and enhance the quality of life.

### Understanding Science and Technology

People have always had questions about their world. Science is one way of answering questions and explaining the natural world.

People have always had problems and invented tools and techniques to solve problems.

Scientists and engineers often work in teams with different individuals doing different things that contribute to the results.

Tools help scientists make better observations, measurements, and equipment for investigations. They help scientists see, measure, and do things they could not otherwise see, measure, and do.

### Changes in environments

Environments are the space, conditions and factors that affect an individual's and a population's ability to survive and their quality of life.

Changes in environments can be natural or influenced by humans.

### Science and technology in local challenges

People continue inventing new ways of doing things, solving problems, and getting work done.

## Social Studies

### People, Places and Environments

Describe and speculate about physical system changes, such as seasons, climate and weather, and the water cycle.

Examine the interaction of human beings and their physical environment, the use of land, building of cities, and ecosystem changes in selected locales and regions.

Explore ways that the earth's physical features have changed over time in the local region and beyond and how these changes may be connected to one another.

## Technology

### Basic operations and concepts

Students demonstrate a sound understanding of the nature and operation of technology systems.

## Activity 4

# Be an Eco-Hero

## Language Arts

### Reading for Perspective

Students read and understand a wide range of print and nonprint texts to build an understanding of texts.

### Evaluation Strategies

Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts.



## Applying Knowledge

Students apply knowledge of language structure, language conventions, media techniques, figurative language, and genre to create, critique, and discuss print and non-print texts.

## Life Science

### Organisms and Environments

All organisms cause changes in the environment where they live. Some of these changes are detrimental to the organism or other organisms, whereas others are beneficial.

Humans depend on their natural and constructed environments. Humans change environments in ways that can be either beneficial or detrimental for themselves and other organisms.

## Science in Personal and Social Perspectives

### Types of resources

Resources are things that we get from the living and nonliving environment to meet the needs and wants of a population.

Some resources are basic materials, such as air, water, and soil; some are produced from basic resources, such as food, fuel, and building materials; and some resources are nonmaterial, such as quiet places, beauty, security, and safety.

The supply of many resources is limited. If used, resources can be extended through recycling and decreased use.

### Changes in environments

Environments are the space, conditions, and factors that affect an individual's and a population's ability to survive and their quality of life.

Changes in environments can be natural or influenced by humans.

## Social Studies

### People, Places and Environments

Describe and speculate about physical system changes, such as seasons, climate and weather, and the water cycle.

Examine the interaction of human beings and their physical environment, the use of land, building of cities, and ecosystem changes in selected locales and regions.

Explore ways that the earth's physical features have changed over time in the local region and beyond and how these changes may be connected to one another.

Consider existing uses and propose and evaluate alternative uses of resources and land in home, school, community, the region, and beyond.

### Power, Authority and Governance

Social studies programs should include experiences that provide for the study of how people create and change structures of power, authority, and governance so that the learner can: examine the rights and responsibilities of the individual in relation to his or her social group, such as family, peer group, and school class.

### Study of relationships between science, technology and society

Describe instances in which changes in values, beliefs, and attitudes have resulted from new scientific and technological knowledge, such as conservation of resources and awareness of chemicals harmful to life and the environment.

### Study of global connections and interdependence

Explore causes, consequences, and possible solutions to persistent, contemporary, and emerging global issues, such as pollution and endangered species.

Examine the relationships and tensions between personal wants and needs and various global concerns, such as use of imported oil, land use, and environmental protection.