Mad Science® Program
correlations with
New York State Core Curriculum

The Physical Setting

KEY IDEA 1: The Earth and celestial phenomena can be described by principles of relative motion and perspective.
- Space…The Final Frontier After-School Program

PERFORMANCE INDICATOR 1.1: Describe patterns of daily, monthly and seasonal chances in their environment.

1.1a: Natural cycles and patterns
- Space…The Final Frontier After-School Program
- Walloping Weather After-School Program

1.1b: Humans organize time into units based on natural motion of Earth.
- None applicable

1.1c: The Sun and other stars appear to move in a recognizable pattern both daily and seasonally.
- Space…The Final Frontier After-School Program

KEY IDEA 2: Many of the phenomena that we observe on Earth involve interactions among components of air, water and land.
- Walloping Weather After-School Program
- Ecosystem Explorations Workshop for 3-6
- Earthworks After-School Program
- Mineral Mania Workshop for 3-6
- Decomposers Workshop for K-2

PERFORMANCE INDICATOR 2.1: Describe the relationship among air, water, and land on Earth.

2.1a: Weather is the condition of the outside air at a particular moment.
- Walloping Weather After-School Program
- Where's the Air Workshop for K-2

2.1b: Weather can be described and measured by temperature, wind speed and direction, form and amount of precipitation, general sky conditions.
- Walloping Weather After-School Program

2.1c: Water is recycled by natural processes on Earth.
- None applicable

2.1d: Erosion and deposition result from the interaction among air, water and land.
- Earthworks After-School Program
- Mineral Mania Workshop for 3-6

2.1e: Extreme natural events may have positive or negative impacts on living things.
- Earthworks After-School Program
- Walloping Weather After-School Program

KEY IDEA 3: Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.
- Matter of Fact Workshop for 3-6
- Playing with Polymers Workshop for 3-6
- Slippery Science Workshop for K-2
- Matter of Fact After-School Program
- Slime After-School Program
- Kitchen Chemistry After-School Program
- Che-mystery After-School Program

PERFORMANCE INDICATOR 3.1: Observe and describe properties of materials, using appropriate tools.

3.1a: Matter takes up space and has mass. Two objects cannot occupy the same place at the same time.
- Matter of Fact Workshop for 3-6
- Playing with Polymers Workshop for 3-6
- Slippery Science Workshop for K-2
- Matter of Fact After-School Program
- Slime After-School Program
- Kitchen Chemistry After-School Program
- Che-mystery After-School Program

3.1b: Matter has properties that can be observed through the senses.
- Matter of Fact Workshop for 3-6
- Playing with Polymers Workshop for 3-6
- Slippery Science Workshop for K-2
- Matter of Fact After-School Program
- Slime After-School Program
- Kitchen Chemistry After-School Program
- Che-mystery After-School Program
- Tantalizing Taste After-School Program
- Seeking our Senses Workshop for K-2

3.1c: Objects have properties that can be observed, described, and/or measured.
- All Mad Science Programs
- Turn up the Volume Workshop for 3-6
- Measure for Measure Workshop for K-2

3.1d: Measurements can be made with standard metric units and nonstandard units.
- Turn up the Volume Workshop for 3-6
- Measure for Measure Workshop for K-2

3.1e: The material an object is made up of determines some specific properties of the object. Properties can be observed or measured with tools such as hand lenses, metric rulers, thermometers, balances, magnets, circuit testers, and graduated cylinders.
- Turn up the Volume Workshop for 3-6

- Measure for Measure Workshop for K-2

3.1f: Objects and/or materials can be sorted or classified according to their properties.
- Mineral Mania Workshop for 3-6

3.1g: Some properties of an object are dependent on the conditions of the present surroundings in which the object exists.
- None applicable

PERFORMANCE INDICATOR 3.2: Describe chemical and physical changes, including changes in states of matter.
3.2a: Matter exists in three states: solid, liquid and gas.
- Dry Ice After-School Program

3.2b: Temperature can affect the state of matter of a substance.
- Harnessing Heat After-School Program

3.2c: Changes in the properties or materials of objects can be observed and described.
- All Mad Science Programs

KEY IDEA 4: Energy exists in many forms, and when these forms change energy is conserved.
- Energy Burst After-School Program
- Harnessing Heat After-School Program
- Electricity Workshop for 3-6
- Current Events After-School Program
- Good Vibrations Workshop for 3-6

PERFORMANCE INDICATOR 4.1: Describe a variety of forms of energy (e.g. heat, chemical, light) and the changes that occur in objects when they interact with those forms of energy.

4.1a: Energy exists in various forms: heat, electric, sound, chemical, mechanical, light.
- Harnessing Heat After-School Program
- Electricity Workshop for 3-6
- Current Events After-School Program
- Sonic Sounds After-School Program
- Sound Basics Workshop for K-2
- Good Vibrations Workshop for 3-6
- Energy Burst After-School Program
- Lights…Color…Action After-School Program

4.1b: Energy can be transferred from one place to another.
- Energy Burst After-School Program
- Electricity Workshop for 3-6
- Current Events After-School Program

4.1c: Some materials transfer energy better than others (heat and electricity).
- Harnessing Heat After-School Program
- Electricity Workshop for 3-6
- Current Events After-School Program

4.1d: Energy and matter interact; water is evaporated by the Sun's heat, a bulb is lighted by means of electrical current, a musical instrument in played to produce a sound, dark colors may absorb light, light colors may reflect light.
- Harnessing Heat After-School Program
- Electricity Workshop for 3-6
- Current Events After-School Program
- Sonic Sounds After-School Program
- Sound Basics Workshop for K-2

- Good Vibrations Workshop for 3-6
- Energy Burst After-School Program
- Lights…Color…Action After-School Program

4.1e: Electricity travels in a closed circuit.
- Electricity Workshop for 3-6
- Current Events After-School Program

4.1f: Heat can be released in many ways, for example, by burning rubbing or combining one substance with another.
- Harnessing Heat After-School Program

4.1g: Interactions with forms of energy can be either helpful or harmful.
- None applicable

PERFORMANCE INDICATOR 4.2: Observe the way one form of energy can be transferred into another form of energy present in common situations.

4.2a: Everyday events involve one form of energy being changed to another.
- Energy Burst After-School Program
- Ecosystem Explorations Workshop for 3-6
- Electricity Workshop for 3-6
- Current Events After-School Program

4.2b: Humans utilize interactions between matter and energy.
- Electricity Workshop for 3-6
- Current Events After-School Program
- Sonic Sounds After-School Program
- Good Vibrations Workshop for 3-6
- Sound Basics Workshop for K-2
- Harnessing Heat After-School Program
- Energy Burst After-School Program

KEY IDEA 5: Energy and matter interact through forces that result in changes in motion.
- Fun-damental Forces After-School Program
- Moving Motion After-School Program
- Great Gravity After-School Program
- Stunt Planes and Gliders After-School Program
- Magnificent Magnets Workshop for K-2
- Magnetic Magic After-School Program
- Mischievous Magnets Workshop for 3-6

PERFORMANCE INDICATOR 5.1: Describe the effects of common forces (pushes and pulls) of objects, such as those caused by gravity, magnetism and mechanical forces.

5.1a: The position of an object can be described by locating it relative to another object or background.
- None applicable

5.1b: The position or direction of motion of an object can be changed by pushing or pulling.
- Moving Motion After-School Program
- Fun-damental Forces After-School Program
- Great Gravity After-School Program

5.1c: The force of gravity pulls all objects towards the center of the Earth.
- Great Gravity After-School Program

5.1d: The amount of change in the motion of an object is affected by friction.

- Moving Motion After-School Program

5.1e: Magnetism is a force that may attract or repel certain materials.
- Magnificent Magnets Workshop for K-2
- Magnetic Magic After-School Program
- Mischievous Magnets Workshop for 3-6

5.1f: Mechanical energy may cause change in motion through the application of force and through the use of simple machines such as pulleys, levers and inclined planes.
- Mad Science Machines After-School Program

PERFORMANCE INDICATOR 5.2: Describe how forces can operate across distances.

5.2a: The forces of gravity and magnetism can affect objects through gases, liquids and solids.
- Great Gravity After-School Program
- Magnificent Magnets Workshop for K-2
- Magnetic Magic After-School Program
- Mischievous Magnets Workshop for 3-6

5.2b: The force of magnetism on objects decreases as distance increases.
- Magnificent Magnets Workshop for K-2
- Magnetic Magic After-School Program
- Mischievous Magnets Workshop for 3-6

The Living Environment

KEY IDEA 1: Living things are both similar to and different from each other and from nonliving things.
- Cells Workshop for 3-6
- Dinosaurs Workshop for K-2
- Ecosystem Explorations Workshop for 3-6
- Decomposers Workshop for K-2
- Bugs After-School Program
- All About Animals After-School Program
- Life in the Sea After-School Program

PERFORMANCE INDICATOR 1.1: Describe the characteristics of and variations between living and nonliving things.

1.1a: Animals need air, water, food in order to live and thrive.
- All about Animals After-School Program
- Decomposers Workshop for K-2
- Life in the Sea After-School Program
- Dinosaurs Workshop for K-2

1.1b: Plants require air, water, nutrients and light in order to live and thrive.
- Ecosystem Explorations Workshop for 3-6
- Cells Workshop for 3-6
- Photosynthesis Workshop for 3-6

1.1c: Nonliving things do not live and thrive.
- None applicable

1.1.d: Nonliving things can be human-created or naturally occurring.

- None applicable

PERFORMANCE INDICATOR 1.2: Describe the life processes common to all living things.

1.2a: Living things grow, take in nutrients, breathe, reproduce, eliminate waste and die.
- Cells Workshop for 3-6
- Ecosystem Explorations Workshop for 3-6
- Decomposers Workshop for K-2
- Dinosaurs Workshop for K-2
- All About Animals After-School Program

KEY IDEA 2: Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring.
- None applicable

KEY IDEA 3: Individual organisms and species change over time.
- None applicable

KEY IDEA 4: The continuity of life is sustained through reproduction and development.
- None applicable

PERFORMANCE INDICATOR 4.2: Describe evidence of growth, repair, and maintenance, such as nails, hair, bone and the healing of cuts and bruises.
- None applicable

KEY IDEA 5: Organisms maintain a dynamic equilibrium that sustains life.
- Ecosystem Explorations Workshop for 3-6
- Decomposers Workshop for K-2

PERFORMANCE INDICATOR 5.1: Describe basic life functions of common living specimens.

5.1a: All living things grow, take in nutrients, breathe, reproduce, and eliminate waste.
- Ecosystem Explorations Workshop for 3-6
- Decomposers Workshop for K-2

5.1b: An organism's external physical features can enable it to carry out life functions in its particular environment.
- Decomposers Workshop for K-2
- All About Animals After-School Program
- Life in the Sea After-School Program

PERFORMANCE INDICATOR 5.2: Describe some survival behaviors of common living specimens.

5.2a: Plants respond to changes in their environment.
- Ecosystem Explorations Workshop for 3-6
- Photosynthesis Workshop for 3-6

5.2b: Animals respond to change in their environment.
- Decomposers Workshop for K-2

5.2c: Senses can provide essential information to animals about their environment.
- Decomposers Workshop for K-2

5.2d: Some animals, including humans, move from place to place to meet their needs.
- None applicable

5.2e: Particular animal characteristics are influenced by changing environmental conditions.
- All About Animals After-School Program

- Life in the Sea After-School Program

5.2f: Some animal behaviors are influenced by environmental conditions.
- None applicable

5.2g: The health, growth, and development of organisms are affected by environmental conditions such as the availability of food, air, water, space, shelter, heat and sunlight.
- Ecosystem Explorations Workshop for 3-6

PERFORMANCE INDICATOR 5.3: Describe the factors that help promote good health and growth in humans.

5.3a: Humans need a variety of healthy foods, exercise and rest in order to grow and maintain good health.
- Body Basics Workshop for K-2

5.3b: Good health habits include hand washing and personal cleanliness, avoiding harmful substances eating a balanced diet and engaging in results exercise.
- Be Tobacco Free Workshop for K-6

KEY IDEA 6: Plants and animals depend on each other and their physical environment.
- Ecosystem Explorations Workshop for 3-6

PERFORMANCE INDICATOR 6.1: Describe how plants and animals, including humans, depend upon each other and the nonliving environment.

6.1a: Green plants are producers because they provide the basic food supply for themselves and animals.
- Photosynthesis Workshop for 3-6
- Decomposers Workshop for K-2
- Ecosystem Explorations Workshop for 3-6

6.1b: All animals depend on plants. Some animals eat other animals.
- Ecosystem Explorations Workshop for 3-6
- Decomposers Workshop for K-2
- Dinosaurs Workshop for K-2

6.1c: Animals that eat plants for food may in turn become food for other animals. This sequence is called a food chain.
- Ecosystem Explorations Workshop for 3-6
- Decomposers Workshop for K-2

6.1d: Decomposers are living things that play a vital role in recycling nutrients.
- Decomposers Workshop for K-2

6.1e: An organism's pattern of behavior is related to the nature of that organism's environment, including the kinds and numbers of other organisms present, the availability of food and other resources, and the physical characteristics of the environment.
- None applicable

6.1f: When the environment changes, some plants and animals survive and reproduce and others die or move to new locations.
- Black and Blue Oceans Workshop for 3-6

PERFORMANCE INDICATOR 6.2: Describe the relationship of the Sun as an energy source for living and nonliving cycles.

6.2a: Plants manufacture food by utilizing air, water, and energy from the Sun.

- Photosynthesis Workshop for 3-6

6.2b: The Sun's energy is transferred on Earth from plants to animals through the food chain.
- Ecosystem Explorations Workshop for 3-6
- Decomposers Workshop for K-2

6.2c: Heat energy from the Sun powers the water cycle.
- None applicable

KEY IDEA 7: Human decisions and activities have had a profound impact on the physical and living environment.

PERFORMANCE INDICATOR 7.1: Identify ways in which humans have changed their environment and the effects of those changes.

7.1a: Humans depend on their natural and constructed environments.
- None applicable

7.1b: Over time humans have changed their environment by cultivating crops and raising animals, creating shelter, using energy, manufacturing goods, developing means of transportation, changing populations and carrying out other activities.
- None applicable

7.1c: Humans, as individuals or communities, change environments in ways that can be either helpful or harmful for themselves and other organisms.
- Black and Blue Oceans Workshop for 3-6