



## Grade 6-8 Field Trips

New York State P-12 Science Learning Standards are listed at the end of each program offering, where applicable

### Planetarium Shows

#### **Astronomy for Earth Science**

The Planetarium is an excellent tool to demonstrate astronomical phenomena and concepts covered on the Regents Exam. We offer two separate lessons examining the different topics that are on the Regents. Sign up for either or both, your choice. Special rate applies when you book both programs on the same day. An introduction to the seasonal sky is included with each show.

45 minutes, 60 people maximum

**The Moon & More** This program demonstrates planetary motion, including retrograde motion of the planets as seen from Earth, and from outside of the Solar System. The Lunar Cycle and phases are viewed in the dome at “weekly intervals” and the phenomena of Eclipses is explained and shown.

45 minutes, 60 people maximum (including chaperones), MS-ESS1-1

**The Sun & More** This program takes a look at the apparent motions of the stars and circumpolar constellations. The rising and setting of the Sun at the start of each season is duplicated in the Planetarium sky, along with the Sun’s elevation at noon throughout the year. Incorporated into this lesson are the Ecliptic, Meridian, and Celestial Equator, and how they relate to the seasons and the tilt of the Earth’s axis.

45 minutes, 60 people maximum (including chaperones), MS-ESS1-1

#### **Cosmic Wonders**

This live program highlights the seasonal night sky, including constellations, planets, the moon and current astronomical events. Tell us what you are studying! We will emphasize specific topics such as constellation mythology or the solar system.

45 minutes, 60 people maximum (including chaperones). MS-ESS1-1

#### **Earth’s Wild Ride**

Explore the Earth as you’ve never done before -- as observed by a fictional family relocated on the Moon! Discover crashing asteroids, erupting volcanoes, roaring dinosaurs, electrifying lightning and booming thunder. See eclipses, the ice age, Earth’s water cycle and the differences between the Earth and Moon on a roller-coaster-like ride through canyons of raging rivers and hot flowing lava. Includes a live segment about the current seasonal sky. *Produced in collaboration with Rice University, through NASA’s Immersive Earth Project.*

45 minutes, 60 people maximum (including chaperones), MS-ESS1-1, MS-ESS1-2, MS-ESS1-3, MS-ESS2-5

#### **IBEX: Search for the Edge of the Solar System**

Take a journey to the boundary between our Solar System and the rest of our galaxy! Get an in-depth look at NASA’s Interstellar Boundary Explorer (IBEX) mission and how IBEX is collecting high-speed atoms to create a map of our Solar System’s boundary. Narrated by two inquisitive teenagers, this show features the scientists and engineers who developed the IBEX mission and created the spacecraft, as well as the latest updates on the mission’s discoveries.

*Produced by the Adler Planetarium for the Southwest Research Institute.*

45 minutes, 60 people maximum (including chaperones)

## Planetarium Shows (continued)

### **Losing the Dark**

Learn all about light pollution and some of the important issues surrounding this problem in our environment. Explore simple actions people can take to help reduce light pollution. Discover ways we can all work together to implement responsible use of lighting. *Produced by Loch Ness Productions.*

45 minutes, 60 people maximum (including chaperones), MS-LS1-5

### **Saturn the Ring World**

See Saturn up-close and all-around-you! Explore the two-story Cassini-Huygens spacecraft, which began orbiting Saturn on July 1, 2004. Cassini continues to explore Saturn and its moons during its extended mission, while the Huygens probe had landed on the surface of Titan, Saturn's largest moon. Narrated by Star Trek's John Billingsley (Dr. Phlox on ENTER-PRISE). *Produced by the Houston Museum of Natural Science and NASA's Jet Propulsion Laboratory.* 45 minutes, 60 people maximum (including chaperones), MS-ESS1-2

### **Season of Light (Nov. 24, 2017 - Jan. 7, 2018)**

Light up the cold, dark winter with a bright holiday show that explores the history of holiday customs, cultural celebrations practiced during the winter solstice, and general astronomy topics like seasons and the winter night sky.

45 minutes, 60 people maximum (including chaperones), MS-ESS1-1

### **Two Small Pieces of Glass**

Explore the history of the telescope from the time of Galileo and discover its impact upon the science of astronomy. Narrated by two children in a star party setting, this new digital show features astrophysicists and cosmologists from the world's renowned universities and observatories explaining astronomy concepts -- from Galileo's act of revealing the cos-mos with a simple telescope to the latest discoveries in space, including startling new ideas about life on other planets and dark energy. *Produced by Interstellar Studios.*

45 minutes, 60 people maximum (including chaperones), MS-PS4-2

### **We Choose Space!**

Discover the completed International Space Station (ISS) and the past and future moon with Astronauts Scott Parazinsky, Tom Jones and Gene Cernan, and veteran space reporter Walter Cronkite. This show is filled with real adventures for everyone who dreams of space and wonder about human spaceflight. *Produced by Loch Ness Productions. Funded by NASA to the Louisiana Art and Science Museum.*

45 minutes, 60 people maximum (including chaperones), MS-ESS1-2, MS-ESS1-2

### **Sunstruck**

Travel back to the beginning of time and experience the birth of the Sun. Discover how it came to support life, how it threatens life as we know it, and how its energy will one day fade away.

45 minutes, 60 people maximum (including chaperones), MS-PS4-1

### **Back to the Moon for Good**

This digital film highlights the history of exploring the moon and provides an insider's look at the teams vying for the \$30 million Google Lunar XPRIZE, the largest incentivized prize in history. The stunning visuals and compelling narrative of the show explain the importance of the Google Lunar XPRIZE in encouraging today's space entrepreneurs and innovators to collaborate toward building a new space economy while inspiring the next generation to "shoot for the moon."

45 minutes, 60 people maximum (including chaperones), MS-ETS1-2

### **Dinosaur Prophecy**

Long before dinosaurs' massive extinction 65 million years ago, many individual species simply disappeared. Visit dinosaur graveyards, study their bones, and reconstruct how these creatures lived and died to solve four famous cold cases from the age of the dinosaurs in The Dinosaur Prophecy.

45 minutes, 60 people maximum (including chaperones), MS-LS4-1, MS-LS4-2

## Hands-on Science Explorations

### Crime Lab Science

Learn about forensic science and how evolving technology helps scientists, detectives, and other specialists discover the truth about today's criminal cases and mysterious crimes of the past.

45 minutes, 25 students maximum

### Dynamic Earth

What is beneath your feet and all around you – THE EARTH! Discover the everyday changes of the Earth. Explore the gradual, the dramatic, and the changes that happen every few hours. What lies at the center of the Earth? Why do continents move? Why do rivers bend? Why do hurricanes begin? Discover the answers through hands-on investigation.

45 minutes, 25 students maximum, MS-ESS1-4, MS-ESS2-2, MS-ESS2-3

### Engineering Mission

Design and build a shock-absorbing system that will protect two marshmallow “astronauts” when they land. Test, evaluate, and redesign. This program is adapted from NASA’s Design Squad. Trip Tip: Pair with Saturn the Ring World or IBEX: Search for the Edge of the Solar System Planetarium Show.

45 minutes, 25 students maximum, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4, MS-PS2-1, MS-PS2-2, MS-PS2-3, MS-PS2-4, MS-PS2-5

### Erie Canal

Discover the Erie Canal through a hands-on, inquiry-based learning experience that explores the science, technology, and history of innovation in our area. Investigate the Canal’s economic importance to New York State and the technological advancements, such as hydraulic cement, that stemmed from its construction. Through experimentation explore Pascal’s Law and how it was used to design canal lock systems.

45 minutes, 25 students maximum, MS-ETS1-3

### Fun with Physics

Physics is everywhere, even when we play. Through interactive demonstrations, learn how a bicycle tire can turn you into a human gyroscope. Explore the laws of gravity and discover Bernoulli’s Principle.

45 minutes, 25 students maximum, MS-PS3-4, MS-PS3-5, MS-PS2-1, MS-PS2-2

### It's a Small Small Nano World

Discover more about this technical field that focuses on matter at the nanoscale dimensions of 1 to 100 nanometers ( $1\text{nm} = 10^{-9}\text{m}$ ). Learn about how researchers have made great strides in understanding new behaviors and properties of materials at the nanoscale. Understand how this information is being put to work in medicine, electronics, robotics, and energy production.

45 minutes, 25 students maximum

### Just A Phase

Discover answers to the questions of the Moon. Learn why our Moon is so bright, why it controls our tides here on Earth and what is happening to the Moon. Each student will walk their Moon through the phases as they discover what creates new, full, and waxing Moons. Trip Tip: Pair with a Star Lab Portable Planetarium Show.

45 minutes, 25 students maximum, MS-ESS1-1

### The Magic of Electricity

We all use it...but what IS it, and how does it work? Learn the basics of electricity through hands-on demonstrations, including the hair-raising Van de Graaf generator. Learn how electricity is generated, delivered to homes, and has changed our lives forever.

45 minutes, 25 students maximum

## Hands-on Science Explorations (continued)

### Optical Illusions

Trick your eyes with a number of Optical Illusions and then discover scientifically what is happening with your eye and brain for this to occur. Learn about the parts of your eye and how it produces images for your brain to see. See how artists have used techniques to trick us for hundreds of years.

45 minutes, 25 students maximum, MS-LS1-3, MS-LS1-8

### Renewable Energy

Energy is everywhere, but what is energy? Where does it come from? Does it run out?

45 minutes, 25 students maximum

### Spectacular Spectroscopy

Discover how light travels and creates the colors we see. Mix colored light to see what makes white light. Investigate how prisms can be used to manipulate light and produce rainbows. Experiment with gas samples and learn how they capture and release light waves.

45 minutes, 25 students maximum MS-PS4-1, MS-PS4-2, MS-PS4-3

## Interactive Science Demos

### Dry Ice

Explore the states of matter and sublimation with the fun and excitement of dry ice.

30 minutes, 30 students maximum, MS-PS1-4, MS-PS1-7

### Electricity

What is it? And how do we make more?

30 minutes, 30 students maximum

### Nanotechnology

Explore the everyday applications of nanotechnology and find out just how small nano really is.

30 minutes, 30 students maximum

### Physics

Find out about the motion and the “why” behind its behavior.

30 minutes, 30 students maximum



NEW!

## Sense and Sensability Classes

### Sense and Sensability Lesson 1: Super Saver

Students will develop an understanding of the importance of saving money and learn how credit cards are a form of debt. Activities will demonstrate the advantages and disadvantages of having credit cards and using debt to finance their wants and needs. Concepts of principal and interest will be explored.

### Sense and Sensability Lesson 2: Savvy Shopper

Students will consider the role of needs and wants in decision-making, and how to evaluate the credibility and motivation of marketing and advertising. Students will learn how to distinguish the best value of goods and services, and how to evaluate opportunity costs of various purchases.

### Sense and Sensability Lesson 3: Personal Finances

Students will learn how to make decisions about what to do with their money, and whether to spend, save, or give. Considerations for an increasingly digital world, such as protecting one's identity and financial information, will also be addressed. Students will role-play various identity theft scenarios using a customized app.