



## 2011-2012 SCHOOL YEAR – PORTER PROGRAM DESCRIPTIONS

### 2<sup>nd</sup> Grade

**Waves:** Students discover how light travels by exploring reflection and refraction, investigate types of vibrations and compare different sounds of pitch and volume. The students use hand pipes to play familiar tunes.

Cost: \$120/class.....Includes 55 min pre-visit, 70 min Porter visit

### 3<sup>rd</sup> Grade

**Measurement:** Students test their hypotheses using objects of various sizes and shapes, balances to measure mass, and graduated cylinders to measure volume. Young scientists investigate different techniques for finding volume, and learn how to find the volume of a human!

Cost: \$120/class.....Includes 55 min pre-visit & 70 min Porter visit

**Classification:** Students classify a range of native Ohio animals from microscopic to woodland. Students compare skulls, discuss animal survival, discover a smaller world using microscopes, and hike the grounds looking for animal signs.

Cost: \$120/class.....Includes pre-visit packet & 2 hr Porter visit

### 4<sup>th</sup> Grade

**Erosion:** Students use stream tables to investigate soil erosion and methods used to control it. Students hike to Jordan Creek to see real erosion and deposition and use GPS units to find a geo-cache treasure of real erosion examples.

Cost: \$120/class.....Includes pre-visit packet & 2 hr Porter visit

**Physical/Chemical Changes:** Students determine and explain if a change is physical or chemical by investigating dry, bubbly and slimy solutions. Students feel like real chemists. There is no Porter Center visit included with this lesson; therefore no extra cost for busing.

Cost: \$100/class.....Includes 90 min visit to school only

**Forces and Motion:** Students investigate Newton’s Laws of Motion using Newton’s Cradle, stomp rockets, battering rams, a human dynamics cart and more. The lesson will keep the students “moving”.

Cost: \$120/class.....Includes 55 min pre-visit & 70 min Porter visit

### 5<sup>th</sup> Grade

**Energy:** Students become electrical engineers by creating series and parallel circuits. A highlight of this pre-visit is the electrocution of a pickle to teach electrical safety. A follow up at Lake Metroparks’ Farmpark allows students to explore alternative energy sources.

Cost: \$150/class.....Includes 55 min pre-visit & 4 hr Lake Farmpark visit

**Solar System: A Trip to the Moon:** Students become astronauts-in-training studying the solar system and seasons, and experiencing design in technology with solar simulation investigations using critical thinking and statistics. The experience is out of this world!

Cost: \$120/class.....Includes 55 min pre-visit & 90 min Porter visit

### 5<sup>th</sup> Grade (continued)

**Waves:** Students discover how light travels by exploring reflection and refraction, investigate types of vibrations and compare different sounds of pitch and volume. There is no Porter Center visit included with this lesson; therefore no extra cost for busing.

Cost: \$100/class.....Includes 90 min visit to school only

### 6<sup>th</sup> Grade

**Biotech Disease Module** – In a laboratory setting, students participate in a Dreaded Red Disease simulation, and a common cold investigation. Bacteria will be collected from various locations in their classrooms and placed in agarose gels. Students will analyze the colonies of bacteria growth upon their visit to Porter.

Cost: \$200/class.....Includes 30 min pre-visit, 2 hr Porter visit

### 7<sup>th</sup> Grade

**Watershed I:** Students gain an understanding of how watersheds are defined and the role that the hydrological cycle has on watershed health. They will practice assessing stream health by investigating biotic and abiotic factors and testing water quality.

Cost: \$200/class.....Includes 2 hr Porter visit

### 8<sup>th</sup> Grade

**Biotech I:** In our biotechnology laboratory, students are forensic scientists using modern laboratory techniques and equipment to solve a crime. This is an *introductory class* to state-of-the-art technology used by biotechnologists in the field of forensic science. Students will extract DNA and learn how to obtain a fingerprint DNA by using agarose gel electrophoresis.

Cost: \$200/class.....Includes 2 hr Porter visit

### 9<sup>th</sup> Grade

**Watershed II:** Students gain an in-depth understanding of watersheds and the role the hydrological cycle has on watershed health. Topics discussed will include how local land use, chemical waste, nutrient waste and population growth can affect the quality of water. Students perform a series of water chemical tests on collected samples and compare and discuss their results.

Cost: \$200/class.....Includes 2 hr Porter visit

### Advanced Biology: Honors & AP Students

**Biotech II:** In our biotechnology laboratory, upper level & college bound high school students discover the science of proteomics, genetic engineering, and generate protein profiles from several different species of fish by running SDS\_PAGE gel electrophoresis.

Cost: \$300/class.....Includes 3 hr Porter visit





a program of the Lake County Educational Service Center  
at the Lake Metroparks Environmental Learning Center