



east tennessee  
**DISCOVERY CENTER**

## Program Resource Guide

2007-2008  
3<sup>rd</sup>-5<sup>th</sup> Grade



SCIENCE  
DISCOVERY

### Science Discovery Center

516 N. Beaman Street/P.O. Box 6204  
Knoxville, TN 37914

Located in Chilhowee Park near the Zoo  
(865) 594-1494

## Science Discovery Center General Scheduling Information

Call (865) 594-1494 to schedule Science Discovery programs for a group of 10 or more. Small groups of 10 or less may schedule programs at a cost of \$40.

### Location

516 N. Beaman Street (in Chilhowee Park next to Knoxville Zoo)  
Knoxville, TN 37914

### Hours

Monday-Friday            9:00 a.m.—5:00 p.m.  
Saturday                    10:00 a.m.—5:00 p.m.

### Group Rates for Field Trips

School-age children/adults	\$4
Preschool children	\$3
Knox Co. Public School groups	\$3
Outreach Programs	\$4 + mileage invoice

No charge for teachers & bus drivers accompanying a school group; other adult chaperones admitted free within a ratio, depending on the age of the students.

### Gift Shop

Our gift shop sells science-related items including rocks, minerals, star charts, insects, magnets, pencils and more. Prices start at 25 cents.

### Barrier-Free Facility

All areas at the Science Discovery Center are handicap accessible. If your group has special needs, please let us know beforehand.

### Knox County Science Curriculum Instructional Goals

Every Science Discovery Center program has been specifically developed to reinforce the instructional goals of the Knox County School System. We have included the list of programs and the science goals they meet to assist you in planning your trip. For a full description of these instructional goals, visit our website at [www.etsdiscovery.org](http://www.etsdiscovery.org) and click on the science goals link.

## **Science Discovery Center Planetarium Programs**

### **The Sky Tonight Grades 3-5**

**30 minutes**

Join our Planetarium Facilitator for a simulated look at our nighttime sky. Learn how to find the stars and constellations that are currently visible in our nighttime sky and hear the stories of how some of these constellations got their names. This live program can be tailored to meet the needs of your students.

### **Planet Talk Grade 3**

**45 minutes**

Students learn the basic characteristics of each planet in the solar system. They are compared and grouped into broad categories. After learning about the planet Pluto, the students take a "spaceship ride" back to Earth.

### **Advanced Planet Talk Grade 4**

**45 minutes**

This extended Planet Talk presentation takes a more in-depth look at each of the planets. Students will also learn about comets and asteroid impacts here on Earth.

### **Weather Machine Grades 4 & 5**

**45 minutes**

Learn about common weather elements on Earth and how they affect our weather patterns. Topics include wind, clouds, tornadoes and hurricanes. Hear how these elements of Earth's weather compares to the weather on other planets. Narrated in part by WATE-TV6's chief meteorologist Matt Hinkin.

### **The Universe Grade 5**

**45 minutes**

Students learn about solar systems, galaxies and the universe as a whole in a slide presentation led by our Planetarium Facilitator.

### **Videos Grades 3-5**

**30 minutes**

We have a wide variety of Magic School Bus, Eyewitness, and other science-related videos that may correspond with your area of study; these videos can be shown in the Akima Planetarium as a substitute to a planetarium show.

## **Science Discovery Center In-House Classroom Programs**

These programs are available only at the Discovery Center; please see the Outreach section for programs that come to you.

### **Bats Abound! Grades 3-5**

Learn the truth about bats around the world! Age-appropriate activities will leave your students "flying." See bat skins from native Tennessee bats and a bat skeleton. Discover the survival skills bats use to live successfully.

### **Forces & Motion Grades 3-5**

Discover how forces of friction & gravity affect our daily lives. Students will participate in fun activities to figure out what Newton's Three Laws of Motion really mean to us. Your students will love demonstrating these principles by racing cars, hitting homers and wheeling around on a skateboard!

### **Our Planet & Moon Grade 3**

Students will learn about the movements of the Earth and Moon as they imitate the movements themselves. They will also learn how these movements affect the Earth, giving us day and night, and the four seasons. They will learn about the physical features of the moon and participate in an exercise to help them understand the moon's phases and its role in creating eclipses.

### **Flip The Switch Grades 3-5**

"Flip the switch" on learning about electricity. What makes a light bulb turn on? Have you ever seen a magnet dance? Why do we sometimes shock ourselves when we touch a doorknob? Students will explore the answers to these questions by playing games and participating in experiments. Students will discover how power is generated and how we harness electricity in our homes.

**Science Discovery Center  
In-House Classroom Programs (cont'd)**

**Wind, Water & The Four Seasons  
Grades 3-5**

This program demonstrates how Earth's movements create the four seasons & discusses characteristics of each season. Students will learn how wind is formed and how it can make objects move. They will explore the water cycle and discover the different types of clouds and precipitation. Students experiment with thermometers as they learn about Fahrenheit and Celsius temperature scales.

**Light, Color & Stars  
Grades 3-5**

This program allows students to investigate the properties of light & the color spectrum. Students will experiment to see what kinds of materials light will travel through and how light from different angles can change a shadow. Students will also explore mixing colors of light together to create different colors. 4th and 5th graders will also examine glowing gases in the same way that astronomers do when studying the stars.

**Science Discovery Outreach Programs**

The following programs are available to come to your school or group.

**BRAND NEW THIS YEAR!!**

**Classroom Health Outreach Programs**

**Dental Health Thru Nutrition                      60 minutes  
Grades 3-5**

The importance of proper tooth brushing techniques are emphasized as the means to prevent cavities, gum disease and tooth loss. A fun Food Pyramid game will teach children the role of healthy foods in maintaining healthy teeth.

**You Are What You Eat!    60 minutes  
Grades 3-5**

A mystery bag of foods and the Food Pyramid game will teach students how to create a balanced meal. Learn about the digestion system, how to "burn" calories and the importance of reading "nutrition labels." "Fat Belts" will allow children to feel how extra weight affects their movement. Fast food healthy choices are emphasized along with fun songs that show how exercise can be fun.

**Classroom Science Outreach Programs**

**Earth, Sun & Moon    60 minutes  
Grade 3**

Students will really use their heads as they create phases of the moon, eclipses and the seasons of the year. Learn how to model these effects and the movements of the earth, sun and moon that cause them.

**Backyard Basic Training    60 minutes  
Grade 3**

The consequences are life or death, as students become the animals and essential habitat components of their own backyard. Compare and contrast the way in which these animals develop and adapt for survival.

**Bats, the Flying Mammals    60 minutes  
Grade 4**

Learn the what, when, where, why and how of bats! Do they really sleep upside down? Are they really as bad as many people seem to think? Separate bat facts from fiction as you discover the truth about these winged mammals.

**Batteries, Bulbs and Wires    60 minutes  
Grade 4**

Be ready for a fun-filled hour of "shocking" science. Students see dancing magnets, learn about static and current electricity and solve problems in order to create a circuit. Test the conductivity or insulating properties of different materials and make an electro-magnet.

**Make It Move**  
**Grades 4 & 5**

**60 minutes**

Kids love sports and this action-packed, sports-themed program will get them interested in science as well! With the instructor as the referee, students will use a variety of sports equipment to learn about gravity, friction, force and Newton's Three Laws of Motion.

**Geology Rocks!**  
**Grades 4 & 5**

**60 minutes**

Students will explore the structure of the Earth and how it continues to change. The differences between rocks and minerals will be discussed, and students will examine and test actual rock, fossil and mineral samples.

## **Lego Outreach Programs**

**Lego 1**  
**Grades 3-5**

**90 minutes**

Students will build machines using Lego "Technic 11" sets, learning in a very hands-on way about how motion is transferred through belts & pulleys, gears and chains. The program provides a great opportunity for students to enhance their fine motor skills and reinforces the value of working cooperatively. Degree of difficulty increases with grade level.

## **Starlab Outreach Programs**

Starlab is a portable, inflatable planetarium that brings the nighttime sky to your school. The sky is projected on the inside of an inflatable dome where students investigate the stars and constellations.

**Starlab requires 22x22 feet of floor space and an 11-foot ceiling.** The ideal class size for Starlab is 20, but it can hold a maximum of 25 3<sup>rd</sup>-5<sup>th</sup> graders.

**Seasons of the Stars**  
**Grades 3-5**

**45 minutes**

Students will learn how to find the Big Dipper, and how to use it to locate other constellations. They will discover some of the constellations visible during each of the four major seasons of the year. Along the way they will hear some of the different myths associated with these constellations.

**Multicultural Mythologies**  
**Grades 3-5**

**45 minutes**

Many cultures around the world imagined star patterns in the sky. These cultures often told stories about the star patterns that helped explain why we see them the way we do. Most people are familiar with the star myths told by Greeks, but many other cultures told stories that helped explain the constellations to their societies. Students will see the star patterns as the Greeks saw them, but will hear stories about how other cultures viewed them.

**Starry Skies**  
**Grade 5**

**45 minutes**

Students learn to locate constellations and get tips on how to identify each constellation in the proper season. Stories about stars and constellations give clues to their names and locations.

## **Science Discovery Center** **Knox County Science Instructional Goals**

Every Science Discovery Center program has been specifically developed to reinforce the instructional goals of the Knox County School System. Following is the list of programs and the instructional goals they meet. For a full description of these goals, visit our website at [www.etediscovery.org](http://www.etediscovery.org) and click on the science goals link.

### **Planetarium Programs**

**Sky Tonight**

**5th grade** goals 1, 2 & 7 in Earth & Space Science unit

**Planet Talk**

**3rd grade** goal 1 in Investigating the Sun, Moon & Earth unit

**Weather Machine**

**4th grade** goals 1, 4 & 7-11 in Weather unit

**The Universe**

**5th grade** goals 1, 3 & 4 in Earth & Space Science unit

### **In-House Classroom Programs**

#### **Bats Abound**

**3rd grade** goals 3 & 5 in Life Cycles unit; goals 1, 2 & 4-6 in Roles of Living Things in Their Environment unit

**4th grade** goals 2-7 in Animals unit

**5th grade** goals 3 & 4 in Ecosystems unit

#### **Forces & Motion**

**3rd grade** goals 1, 3 & 6 in Exploring Energy unit

**4th grade** goals 1-3 & 5 in Simple Machines unit

**5th grade** goals 1-3 in Energy unit

#### **Flip the Switch**

**3rd grade** goals 1, 8 & 9 in Exploring Energy unit

**4th grade** goals 1, 3-5 & 7 in Electricity & Magnetism unit

#### **Our Planet & Moon**

**3rd grade** goals 1-4 & 6 in Investigating the Sun, Moon & Earth unit; goals 1 & 8 in Exploring Energy unit

#### **Wind, Water & The Four Seasons**

**3rd grade** goals 1-3 in Exploring Water unit; goal 6 in Investigating the Sun, Moon & Earth unit

**4th grade** goals 1, 2, 5, 7, 9 & 10 in Weather unit

#### **Light & Color**

**3rd grade** goals 1 & 4 in Exploring Energy unit; goal 5 in Investigating the Sun, Moon and Earth unit

**5th grade** goals 1, 2, 6 & 7 in Light & Sound unit

### **Classroom Outreach Programs**

#### **Earth, Sun & Moon**

**3rd grade** goals 1, 3, 4 & 6 in Investigating the Sun, Moon & Earth unit

#### **Backyard Basic Training**

**3rd grade** goals 3, 5 & 6 in Life Cycles unit; goals 1-6 in Roles of Living Things in Their Environment unit

#### **Bats, the Flying Mammals**

**4th grade** goals 2-7 in Animals unit

#### **Batteries, Bulbs & Wires**

**4th grade** goals 1, 2, 4, 5 & 7 in Electricity and Magnetism unit

#### **Make It Move**

**4th grade** goals 1, 2 & 5 in Simple Machines unit

**5th grade** goals 1-3 in Energy unit

#### **Geology Rocks**

**4th grade** goals 4, 5 & 7 in Earth's Land Resources unit

**5th grade** goals 1-7 in Earth's Structure unit

#### **Lego Outreach Program**

**5th Grade** goals 2 and 3 in Interactions unit.