

## WHY DO WE WANT THE STARLAB TO VISIT OUR SCHOOL?

The **STARLAB** is an inflatable, portable planetarium system that helps draw students into the amazing world of astronomy. It is an educational tool that gets students excited about learning and encourages them to participate and ask questions about the astronomy phenomena they are learning.



## STARLAB BASICS

- \* The ESP has five **STARLABS** for schools to use with K-12 students.
- \* The **STARLAB** domes come in two sizes: standard and giant. The standard dome can accommodate 25 students, and a giant dome can accommodate 50 students.
- \* ESP Teachers come to your school and teach the lessons to your students, unless a school has a teacher that is certified to use the **STARLAB** equipment.
- \* ESP annually certifies teachers to use our **STARLAB** equipment (contact ESP for more information).
- \* The **STARLAB** equipment is comprised of a lightproof dome, a projector, and teaching content supplied by ESP.
- \* The **STARLAB** is similar to a full scale planetarium at museums, except it can be transported from one school to another.



## STARLAB SERVICES

Description of Service	Lease Cost
STARLAB with ESP instructor (up to 5 lessons per day)	\$260.00 per day
Sunshine, Shadows, and Silhouettes (Kindergarten lesson—up to 6 lessons per day)	\$60.00 per lesson
STARLAB with District Supplied Instructor (must be certified by ESP)	\$135.00 per day
<b>**Available to schools in Monroe County only. ESP couriers deliver and pick up the equipment.</b>	

## FOR MORE INFORMATION:

### THE ELEMENTARY SCIENCE PROGRAM

38 Turner Drive  
 Spencerport, NY 14559  
 Phone: 585-352-1140  
 Fax: 585-352-1157

## THE ELEMENTARY SCIENCE PROGRAM



## STARLAB PORTABLE PLANETARIUM



## STARLAB LESSONS

ESP has developed lessons that meet the needs of your classroom. There are lessons that we often use with classrooms at specific grade levels. The description of these lessons are listed below.



### KINDERGARTEN

In this **STARLAB** lesson, Kindergarten students work together through a variety of activities to create shadows inside the **STARLAB** dome. The goal...to figure out the three main things needed to make shadows. Kindergarteners act as scientists as they make discoveries, ask questions, and draw conclusions. (30 minute lesson)

### 3RD GRADE

Third grade students extend the learning from their science classroom in the **STARLAB** by using models to demonstrate astronomy concepts (rotation and revolution of the Earth, moon phases, and eclipses). Viewing the night sky is always a highlight with students. The class will view constellations in the current night sky and listen to the legends that tell the story of each one. (50 minute lesson)

### 5TH GRADE

Fifth grade students also extend their science learning by using the **STARLAB**. Models of rotation and revolution of the Earth and moon phases/eclipses are reviewed. Students use models to investigate the relative size and distance of the planets in the solar system. No **STARLAB** lesson would be complete without viewing the night sky. The class will view and listen to stories about the constellations in the current night sky. (50 minute lesson)



## ADDITIONAL STARLAB LESSONS AVAILABLE

ESP has many cylinders that can be used with our **STARLAB** projector. An ESP teacher can work with teachers to develop a lesson that meets the specific needs of your classroom.

### CONSTELLATION CYLINDER

This cylinder can be used after discussing the night sky. It shows the patterns that are created when the stars appear connected.



### GREEK MYTHOLOGY, NATIVE AMERICAN MYTHOLOGY, AND AFRICAN MYTHOLOGY CYLINDERS

These cylinders project constellations as they are seen by each culture. They can be used to examine the stories and myths about the constellations from each culture and can be compared to those we now refer to in the night sky.

### CELESTIAL COORDINATES CYLINDER

Stars have an "address in space", and we use it to find specific star locations. This cylinder can also be used to find where stars are located when viewing from different locations on the Earth.

### DEEP SKY OBJECTS CYLINDER

Go beyond constellations and locate deep sky objects within the constellations. These include: nebula, double stars, clusters, variable stars, and galaxies.



### CHINESE LEGENDS CYLINDER

This cylinder helps students see how ancient Chinese cultures used the appearance of different stars in the sky throughout the year to regulate human activities.

### PLATE TECTONICS CYLINDER

Investigate the Theory of Plate Tectonics by using this cylinder that makes students feel like they are sitting inside the center of the Earth looking out.

### GEOCENTRIC EARTH CYLINDER

This cylinder is an excellent tool to teach geography skills to students. It can be used to locate continents, oceans, hemispheres, lines of latitude and longitude, and use that information to find specific locations on Earth.



### BIRD MIGRATION CYLINDER

Use this cylinder as an extension to ESP's Bird Adaptations unit. Students will gain an understanding of why different birds travel the migratory routes they do, and discover the forces and influences that lead to their migrations.

### MOON CYLINDER

Extend student learning on the moon phases with this cylinder. Use the close-up pictures of the moon to locate various topographical features on the moon, including the side of the moon that we never see from Earth. Apollo landing sites are also mapped out on this cylinder.

### BIOLOGICAL CELL

Students feel as though they are "inside a cell". This cylinder is used to review and reinforce the function of the cell parts.

### WEATHER CYLINDER

Locate the positions of wind systems and how they are linked to hurricanes. Map out the path of some of the worst hurricanes in history on the **STARLAB** dome.

### SOLAR SYSTEM AND GALAXY (GALACTIC) CYLINDER

This cylinder provides another view of the size and position of the principal objects of the solar system. The moons of the various planets are also named. Students use this data to answer questions about the solar system.

