Planetarium/Star Show:
The Little Star That Could

Description:
The Little Star That Could is a story about Little Star, an average yellow star in search of planets of his own to protect and warm. Along the way, he meets other stars, learns what makes each star special. He discovers that some stars are alone, but others are found in pairs or groups of three or more. Very large groups are called star clusters and are very far away. And the largest collections of stars are called galaxies like the one he lives in – the Milky Way.

Eventually, Little Star finds his planets and each is introduced beginning with Mercury, the closest one to him. Each planet in turn provides basic information about themselves explaining why they each think they are special. Once he has met them all, the Little Star asks for a roll call and discovers that they all belong to his very own Solar System.

The show includes a live customized Digistar tour of the current evening sky and basic astronomy lessons.

Basic Information:
- Age Level: Grades K – 6th (Standards for 8th – 12th also covered)
- Maximum participants per session: 210
- Location: Planetarium Theater
- Running time: 40 minutes (add 20 min. for Star Walk)

Key Concepts Covered:
- Stars are formed from giant clouds of dust and gas.
- The universe is everything there is.
- All stars are made mostly of hydrogen and helium and other gases.
- Stars differ by size, color, and temperatures and these qualities are related to one another.
- Red stars are relatively cool, yellow stars are average temperature, and blue-white stars are very hot.
- Most stars occur in groups of two or more.
- Stars do not last forever; some stars burn out quietly while some explode as supernovae.
- Planets form from the same materials as stars.
- The Milky Way is a galaxy, which has many parts, and we are within it; there are many galaxies in the universe.
- Planets in our Solar System differ in size, distance from the sun, speed of movement, and other physical characteristics.
- Life on Earth depends upon sunlight and water.

**Sunshine State Standards Addressed:**

**Kindergarten:**
- Big Idea #5 - The Earth in Space and Time
  - K.E.5.2 Recognize the repeating patterns of day & night.

**1st Grade:**
- Big Idea #5 - The Earth in Space and Time
  - 1.E.5.1 Explain that there are many more stars in the sky than can be counted & they're not evenly scattered in the sky.
  - 1.E.5.4 Identify harmful & beneficial properties of the Sun.
- Big Idea #6 – Earth Structures
  - 1.E.6.1 Recognize that water, rocks, soil & living organisms are found on Earth's surface.
- Big Idea #12 – Motion of Objects
  - 1.P.12.1 Describe the various ways that objects can move: straight line, zig-zag, back & forth, fast & slow.
- Big Idea #14 – Organization and Development of Living Organisms
  - 1.L.14.3 Differentiate between living and nonliving things.

**2nd Grade:**
- Big Idea #6 – Earth Structures
  - 2.E.6.1 Recognize that Earth is made up of rocks; rocks come in many sizes and shapes.
- Big Idea #7 – Earth Systems and Patterns
  - 2.E.7.1 Compare & describe changing & repeating patterns in nature like weather, temperature, precipitation, day to day and season to season.
  - 2.E.7.2 Observe & measure how the Sun's energy directly & indirectly warms the water, land & air.
- Big Idea #8 – Properties of Matter
  - 2.P.8.4 Observe and describe water in its solid, liquid and gaseous states.

**3rd Grade:**
- Big Idea #5 - The Earth in Space and Time
  - 3.E.5.1 Stars have different sizes and brightness; all stars (except the Sun) are so distant that they look like points.
  - 3.E.5.2 Explain that our Sun is a star that emits light energy.
  - 3.E.5.3 Explain that the Sun looks big & bright because it is the closest star to Earth.
- Big Idea #6 – Earth Structures
  - 3.E.6.1 Demonstrate that radiant solar energy heats objects and when sun is absent, heat may be lost.
Big Idea #10 – Forms of Energy
- 3.P.10.1 Identify some basic forms of energy such as light, heat, sound electrical and mechanical.
- 3.P.10.4 Demonstrate that light can be reflected, refracted and absorbed.

Big Idea #11 – Energy Transfer and Transformations
- 3.P.11.1 Investigate, observe and explain that things that give off light also give off heat.

4th Grade:
Big Idea #5 - The Earth in Space and Time
- 4.E.5.3 Daily rotation of Earth about its axis; yearly revolution of Earth around the Sun.

5th Grade:
Big Idea #5 - The Earth in Space and Time
- 5.E.5.1 Recognize that a galaxy consists of gas, dust & many stars; include objects orbiting stars. Identify Milky Way galaxy as our home.
- 5.E.5.2 Major common characteristics of all planets. Compare & contrast properties of inner & outer planets.
- 5.E.5.3 Identify solar system objects: Sun, planets, moons, asteroids & comets. Identify Earth's place in the Solar System.

Big Idea #10 – Forms of Energy
- 5.P.10.1 Investigate & describe some basic forms of energy including light, heat sound, electrical, chemical and mechanical.

6th Grade:
Big Idea #13 – Forces and Changes in Motion
- 6.P.13.1 Investigate & describe types of forces including contact forces and forces acting at a distance such as electrical, magnetic and gravitational.
- 6.P.13.2 Explore the Law of Gravity by noting that every object exerts a gravitational force on every other object and that the force depends on the masses of the objects and the distance between them.

8th Grade:
Big Idea #5 - The Earth in Space and Time
- 8.E.5.1 Recognize the huge distances between objects in space; relate these distances to our knowledge of light & space travel.
- 8.E.5.2 The Universe has billions of galaxies, each containing billions of stars.
- 8.E.5.3 Distinguish hierarchical relationships between planets, sun, solar system, galaxy & universe;
  - Include distance, size & composition.
- 8.E.5.4 Law of Universal Gravitation; the role of gravity in the formation of stars & planets and gravity's role in their motions.
- 8.E.5.5 Properties of stars: apparent magnitude, color, temperature, size & luminosity (absolute magnitude).
- 8.E.5.7 Compare properties of Sun, planets & moons to those of Earth such as distance from Sun, speed and temperature.

9th – 12 Grade:
Big Idea #5 - The Earth in Space and Time

- 912.E.5.3 Explain how a star's initial mass determines its evolution.

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