Planetarium/Star Show:
More Than Meets the Eye

**Description:**
After looking through a telescope have you ever thought, "But I thought it was gonna look real big and colorful . . . that fuzzy blotch is all there is"?

Too often science programs and printed media show only the ultra-colorful high resolution images of planets and galaxies, taken from spacecraft or big observatories. It’s perhaps understandable then to be dismayed that what we see through the eyepiece doesn’t quite match up.

To bridge the gap, Loch Ness Productions and artist Tim W. Kuzniar teamed up to produce *More Than Meets the Eye* using visuals depicting various planets and deep sky objects as we can actually expect to see them using binoculars and backyard telescopes. *More Than Meets the Eye* features that artwork, then compares the naked-eye views from our back yard with observatory astrophotos and spacecraft images.

We briefly discuss the effects of atmospheric turbulence; that stars have different colors; and how only time exposures produce brilliant colors in galaxies and nebulae. The point is made that, although we don’t see celestial objects in glorious color from our back yard, to know that a faint smudge is really a stellar city or a place where stars are born can spark the imagination, and make the search worthwhile.

*More Than Meets the Eye* includes winter, spring, and summer night-sky scenes, so something mentioned in the show will be prominent in the sky on the night of your visit.

*Sponsored in part by the State of Florida, Department of State, Division of Cultural Affairs and the Florida Arts Council, and the National Endowment for the Arts*

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

**Basic Information:**
- Age Level: General Audience (Grades 5+)
More Than Meets the Eye

- Maximum participants per session: 210
- Location: Planetarium Theater
- Running time: 30 minutes (add 20-25 min. for Star Walk)

**Sunshine State Standards Addressed:**

**Kindergarten:**

**Big Idea #5 - The Earth in Space and Time**
- K.E.5.3 Recognize that the Sun is only visible in the daytime.
- K.E.5.4 Note the Moon can sometimes be seen at night and sometimes during the day.
- K.E.5.5 Note that some things look big and others look small as seen from Earth.
- K.E.5.6 Note that some things are far away and others are nearby as seen from Earth.

**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.5.3 Explain how magnifiers make things look bigger & allow us to see things not visible to our eyes alone.

**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.5.4 Demonstrate that gravity is a force that can be overcome.
- 3.E.5.5 Explain that many more stars are visible in a telescope than can be seen with eyes alone.

**Big Idea #10 – Forms of Energy**
- 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.5.1 Constellations drift across the sky during the night. Different constellations are visible in different seasons.
- 4.E.5.2 Monthly change in the shape of the Moon.

**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.

**7th Grade:**
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Big Idea #10 – Forms of Energy

- 7.P.10.1 Illustrate that solar radiation contains many wavelengths including infrared, visible and ultraviolet and that white light is composed of many colors.

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.5.5 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.
- 8.E.5.10 Assess how technology is essential to access to space & other remote locations, sample collection, measurement, data storage and communication of information.

9th – 12th Grade:

Big Idea #5 - The Earth in Space and Time

- 912.E.5.8 Explain how historical tools as well as new observational tools utilize electromagnetic radiation.