



Teacher's Guide for:

"In My Backyard"

OBJECTIVES:

- To introduce young skywatchers to the day and night sky.
- To observe the changes we see as the seasons change.
- To observe that the Moon changes with time.

This show conforms to the following state science standards: 12.F.1a, 12.F.1b, 12.F.2a, 12.F.2c. Next Generation Science Standards: 1.ESS1.1

BRIEF SHOW DESCRIPTION:

"In My Backyard" is a program originally produced at the Calgary Science Center and narrated by songwriter Fred Penner. The show is a wonderful introduction to the day and night sky through the words, poetry and music of Mr. Penner. Several songs are interspersed throughout the program and the children are encouraged to participate in several areas. Using the Staerkel Planetarium's digital projection system, we appear to be "in" Fred's backyard through each of the different seasons.

PRE-VISIT ACTIVITIES/TOPICS FOR DISCUSSION:

- Make a list of the things you can see and do in your backyard. Have students compare their lists. How would a summer list compare to a winter list?

POST-VISIT ACTIVITIES/TOPICS FOR DISCUSSION:

- Find out (on a calendar) when a thin crescent Moon will appear in the sky at dusk. Have students (and their parents) make a drawing of the Moon each clear night and also note where it is at in the sky. How does the Moon change? Is it in the same spot? You'll find that, although the Earth's rotation appears to carry the Moon from east to west, the Moon is actually moving from west to east in its orbit.
- Model the phases of the Moon by putting a light source in the middle of the room and handing each student a small (3-inch) styrofoam ball on a stick. Their heads represent the Earth and the ball is the Moon. If they hold the ball as far as they can away from them and watch it as they move it around their heads, you can see the changing phases. The Moon song in the show says "does it look like a cookie with a bite taken out." Use large cookies and some hungry students to make all the Moon phases . . . of course the student with full Moon will be hungry!!!
- Take a sheet of paper with some random dots on it and devise your own constellation. Then make up a story about your constellation to share with the class. Put your finished constellation on a transparency machine to project it on the wall (which is essentially what the planetarium does!). You can also poke holes out of a soup can or a film canister to make constellations
- Here's the "Solar System Rap" that the kids are taught in the show:

Close to the Sun, the Moon is it not,
This planet is Mercury, rocky and hot.

Hotter than Mercury, second from the Sun,
To live on cloudy Venus, wouldn't be fun.

We live on this planet, with grass that needs mowing,
On Earth we drive cars, to get where we're going.

This planet is red, and has no cars,
Fourth from the Sun, this planet is Mar.

This world is huge, opposite of small,
Jupiter is fifth, and the largest of all.

This planet is big, too, but you'll notice its rings,
Saturn is pretty, fit for a king.

Far beyond Saturn, it spins on its side,
With thin, rocky rings, Uranus is wide.

The second to last, planet, an icy cool blue,
Neptune is special, and he has rings, too.

The most distant planet, so far out in space,
Lonely, small Pluto, is a frozen dark place.

VOCABULARY LIST:

Seasons Rainbow Sun Phases
Binoculars Constellation Moon Planet

INTERNET RESOURCES:

- "What do you see when you look at the Moon?" <http://tycho.usno.navy.mil/vphase.html>
- NASA's Space Place for kids: <http://www.spaceplace.nasa.gov/>
- Kid's Astronomy page: <http://www.KidsAstronomy.com>
- More moon phases: <https://www.generationgenius.com/phases-of-the-moon-for-kids/>
and an interactive guide: http://www.harcourtschool.com/activity/moon_phases/
- Astronomy in your Hands
activities: <http://www.astronomyinyourhands.com/activities/activities.html>
- StarChild Learning Center: <https://starchild.gsfc.nasa.gov/docs/StarChild/StarChild.html>