

# **Sky Stories Curriculum**

## **Kindergarten through 2nd grades, 30 to 45 minutes**

### **Notice**

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### **Objectives**

Students will learn:

- What a constellation is;
- Shapes and stories of some Greco-Roman constellations;
- Why recognizing constellations was and still is important to many cultures; and
- Why we can't see all the stars all the time.

### **Materials required**

- Flashlight and extra batteries
- Earth on a stick (globe with handles at north and south poles to represent axis)
- Poster of the sun or other star
- Posters of several constellations, including Ursa Major
- Light and laser pointers
- Digitalium<sup>®</sup> system set for the current date and time

## I. Introduction (10 mins)

A) Inform students that you will be studying astronomy today. Ask students what the words 'astronomy' and 'astronomer' mean. Discuss what astronomers might study. If time permits, briefly discuss some current *[and age-appropriate]* astronomy research.

B) One of the things they'll be learning about is stars. *[Show poster of the sun or other star.]* Why can we see the stars? What are stars made of? What is the closest star to Earth? Why is the sun so important to us?

C) Some stars have been grouped into pictures called constellations. Show posters of some constellations they'll be seeing inside the planetarium. Inform students that the posters show pictures that the ancient Greeks and Romans made, and that they'll be hearing ancient Greek and Roman stories inside the planetarium. Why did people create pictures in the sky? *[Many reasons: for navigation, harvesting and planting crops, to judge time, etc.]* Were the ancient Greeks and Romans the only ones to make pictures and stories in the night sky? *[Absolutely not, but their view has become dominant. Virtually every known culture has created constellation legends.]*

D) Prepare to enter the planetarium--rules, method of entry, etc.

## II. Tonight's Sky (15 to 30 mins)

A) *[When all are in and seated, speed up time to let the sun set, then turn off atmospheric effects and landscape.]* Inform students that they're looking at tonight's sky as it would appear at about \_\_\_ p.m./a.m. What do they see? Where's the sun? Do the students see any patterns they recognize? Why can't we see other stars during the day?

B) Inform students that you will all first find a group of stars they are probably quite familiar with. It looks like a gigantic spoon in the sky. What do we call that? Yes, the Big Dipper. *[Point out the stars of the Big Dipper.]*

C) To turn the Big Dipper into the picture that the ancient Romans made, we have to add more stars. The Romans imagined an animal with sharp teeth and claws that liked to eat fish and berries. *[Outline the stars of Ursa Major, describing what parts of the bear they make, then turn on the line drawing and finally artwork for it.]* Tell your favorite Greek or Roman story about Ursa Major.

D) But Ursa Major is not the only bear in the sky. There's a little bear

as well. Any ideas what group of stars makes the little bear, Ursa Minor? Right, the Little Dipper. We can use two stars in Ursa Major to help us find a very important star in our sky—Polaris, the north star, which is the tip of the tail of the little bear. *[Demonstrate how to use the pointer stars to find Polaris.]* Here's how you find the rest of the little bear. *[Outline the stars of Ursa Minor, describing what parts of the bear they make, then turn on the line drawing and finally the artwork for Ursa Minor. If you know a story for Ursa Minor, share it.]*

E) Show two to five more constellations in different parts of the sky, tell stories about them, and show the line drawings and artwork.

F) Now that we've heard a few legends, let's go back to first group of stars we found, the Big Dipper. Why do you think the Big Dipper is so important to us here in the northern hemisphere? *[It's easily recognizable; it's visible all year long for much of the northern hemisphere; slaves used it to find their way north to freedom; etc.]* From much of the northern hemisphere we can also see it all night long, and it can help us find that special star, Polaris, which we saw earlier in Ursa Minor, the little bear. *[Speed up time, being careful to point out that the earth's rotation and revolution give us this changing view.]*

Polaris doesn't appear to move very much because it's in line with Earth's north pole. *[Hold up the 'Earth on a stick' and tilt its northern axis toward Polaris.]* What's happened to the other constellations they saw? *[If they are still visible in the sky, point them out to the students.]* Why aren't they in the same places they started in? *[Briefly discuss Earth's two movements, rotation and revolution, using the Earth on a stick to demonstrate these.]* Turn on all the constellation artwork as a grande finale.

G) Prepare students for exiting the planetarium and regroup outside the dome.

### **III. Conclusion (5 mins)**

A) When all are outside and seated, review what the students have learned today. What does the word constellation mean? How have people used the constellations to help them? What were some constellations they saw? What's special about Polaris?