

Teacher Idea Kit for

Skies of Jamestown



A Space Science Program For Grades 1-5

Presented by

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The Skies of Jamestown

Suggested for Grades 2-4

Objectives

After visiting the planetarium for The Skies of Jamestown, the student should be able to:

1. Identify the constellation Ursa Major, the Big Dipper, and the North Star; explain the significance of these objects to the 1607 settlers; and discuss similarities and differences between the star lore of the Native Americans and the star lore of the British settlers.
2. Compare and contrast the skies we see today to those visible to the local Powhatan people and the 1607 settlers.

State Standards of Learning Objectives

This planetarium presentation addresses the following Virginia State SOLs:

Science: 2.2, 3.3

History: VS.1, VS.2, VS.3, VS.4

Vocabulary

asterism:	A picture made of stars in the sky; an unofficial constellation. The Big Dipper is an asterism.
astrolabe:	From the Latin meaning literally “star taker”. Used for navigation, an astrolabe is a device by which one can measure the height above the horizon of a star. Quadrants, sextants, and octants are all descendants of this device.
astrology:	A belief system in which one holds that the stars and other celestial objects, or their relative positions, can be used to predict the future.
astronomy:	The scientific study of space and the objects found within it.
Big Dipper:	A pattern of seven stars easily seen in the northern sky from the Northern Hemisphere. The Big Dipper can be used to help one find the North Star.
celestial navigation:	A process by which one can determine one’s position on the surface of the Earth by measuring the position of stars. One can then use this information to chart a course across the surface of the Earth.
compass:	A device used for navigation. A compass indicates the direction North by reacting to the Earth’s magnetic field.
constellation:	One of 88 official patterns of stars in the sky as determined by the International Astronomical Union. Ursa Major is a constellation.
North Star:	The star located most nearly above the Earth’s North Pole. This star remains fixed in the sky to observers in the Northern Hemisphere.
traverse board:	A board with a compass rose engraved upon it and a series of holes bored into it. A sailor would place a peg in the board every half hour to show the average direction of travel of the ship during that time.

Background Material for The Skies of Jamestown

In today's modern world, we often take for granted such comforts as homes, electricity, clean running water, and personal safety. In the early days of this country, however, none of those things were guaranteed. The men who traveled to the New World encountered numerous hardships, both during the perilous sea voyage, and during their first years living in this new land.

While children may be aware of many of the dangers faced by the early colonists, they may not be aware of just how great a role the sky and knowledge of its constellations played in the founding of America. The stars above were a vital tool for navigation, a point of commonality to aid in communication with their Powhatan neighbors, and most likely a comforting sight as well, being the only thing their new home would have had in common with England at first.

In this program, students will hear from the colonists themselves, via quotes woven into the program, about the dangers of the ocean crossing, and the tools used by the colonists to navigate across the Atlantic. They will also explore the vital role played by astronomy in the journey to and survival in the New World. During the live portion of the program, students will have the opportunity to hear the sky lore of both the colonists and the native Powhatan people, as well as investigate the skies above Jamestown as we see them today. A question and answer period is also included.

Concepts Covered During the Planetarium Visit

1. The journey from England to the New World was extremely dangerous in the 1600s. Sailors relied on their knowledge of the stars and a variety of instruments to help them navigate their way across the ocean. Once they arrived, the Jamestown settlers used the stars to help them find their way around on land, and also shared their understanding of the sky with their Powhatan neighbors.

2. The sky above Jamestown today is basically the same as it was back in 1607. We still see the same constellations as the colonists and the natives did. The planets move within in our solar system, therefore, the planets are not in the same locations as they were 400 years ago. Various constellations, objects, and stories (both colonial and Native American) will be discuss as appropriate to the season of your visit.

Pre-Visit Activities

We recommend that you conduct at least one of these activities with the class before your visit to the planetarium theater. Be sure to raise questions that can be left unanswered until the discussion period in the show.

1. Talk about basic life needs. What things do you think you would need to survive a four month journey at sea? How would you make sure you arrived where you wanted to go?

2. Study the night sky. Can you identify any constellations? Watch the sky through one evening. Do you see any changes taking place during the night?
3. Imagine you meet someone from another country. You speak different languages, and no one around you speaks both languages. How would you communicate with each other?

Post-Visit Activities

We recommend that you conduct at least one of these activities with your class following their visit to the planetarium theater.

1. Investigate how Native American culture has influenced our culture today. One place we clearly see the Native American influence is in the names of things in our region. Chesapeake, Appomattox, Mattaponi, and many other such names all come from the native language spoken by the Powhatan and other tribes. Find out what these names mean in English!
2. Survival in the early days of Jamestown is much like what our astronauts will face as we prepare to establish a base on Mars. Think about the challenges faced by the colonists, and see if you can find parallels to what we will need to do to establish and maintain a human presence on another planet. There are numerous NASA websites that can help you get started!
3. Go outside at night and locate the Big Dipper and the North Star for yourself! You can call the Virginia Living Museum Astronomy Staff at (757) 595-1900 x256 to find what time the Big Dipper will be easiest to see in the sky.

Recommended Books and Web Sites

Planisphere: A planisphere is a device used to find objects in the sky. It shows the user a picture of the night sky at the precise day and time in question. Planispheres can be purchased from many sources including the Wild Things Gift Store.

NASA Exploration: Then and Now: http://www.nasa.gov/audience/foreducators/5-8/features/F_Exploration_Then_and_Now.html

The Sky Observer's Guide: A Golden Guide by R. Newton Mayall, Margaret Mayall and Jerome Wyckoff, Golden Press, New York.

Stars by Herbert S. Zim, Robert H. Baker, and Mark Chartrand.

StarDate: <http://stardate.org/>

Virginia Living Museum: <http://www.thevlm.org>