Teacher Guide

Make the most out of the planetarium experience with activities that fit your curriculum!

One World, One Sky

Big Bird's Adventure

SESAME STREET 123

芝麻街 123

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liberty science center

Open Your Eyes to the Sky!

Invite the Sun, stars, and Moon into your program and you will open the door to a wonderful world of learning!

As you open children's eyes to the sky, you will help them see how people all over the world are connected. With the help of Big Bird, Elmo, and a new friend from China, named Hu Hu Zhu, children will discover that everyone everywhere shares the same sky.

As a teacher, you can inspire children to ask questions and guide them on an exciting adventure, filled with learning and fun.

This exciting multiple-media, trilingual (English, Spanish, and Mandarin) program was created through the combined efforts of Sesame Workshop, Adler Planetarium, Beijing Planetarium, and Liberty Science Center. It provides fun activities and hands-on centers to build on children's natural curiosity about the Sun, stars, and Moon.

As you use these materials, you'll:

- Join Big Bird, Elmo, and Hu Hu Zhu on an exciting trip to the Moon as you watch and discuss *One World, One Sky: Big Bird's Adventure*
- Engage in large group activities and hands-on centers that expand upon the learning in the show and further explore:
  - Sunlight and shadows
  - Exciting star stories and constellations from around the world
  - What it would be like on the Moon
- Discover new ways to bring the Sun, stars, and Moon into the classroom, through indoor and outdoor explorations and books, and find exciting ideas for take-home tips that encourage parent involvement

So, get ready to discover the sky together. Ready, set…let's explore!

Introduction to the Teacher Guide

This Planetarium Teacher Guide is a wonderful tool to help you begin exciting explorations of the Sun, stars, and Moon with your program!

It is easy to use and provides fun activities that build upon your class curriculum and fit into your everyday routines. It is filled with exciting questions for you and children ages 4-6 to explore, both indoors and outdoors.

USING THESE MATERIALS

Before the show begins, use the **Get Ready for the Adventure** section to spark children's imaginations about the Sun, stars, and Moon and get them excited about the adventure they're about to begin with their *Sesame Street* friends.

- View the exciting *One World, One Sky: Big Bird's Adventure* planetarium show with your students when the mobile tour visits your school/center.
- After the show, use the **Remembering the Adventure** section to encourage children to talk about what they learned and share some of their own experiences with the Sun, stars, and Moon.
- Once children have had a chance to share, get ready to extend the learning with exciting, hands-on activities!

THE ACTIVITIES ARE DIVIDED INTO THREE SECTIONS:

- Exploring the Light of the Sun
- Finding Patterns in the Stars
- Astronaut Adventures and the Moon

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Introduction (continued)

Make these materials your own! You know your class best, so choose activities that work for you. Select any one of the topics or all three! No matter what you choose, you will find fun-filled explorations that children will enjoy.

IN EACH SECTION YOU WILL FIND...

- **Large Group Activity** (15-20 minutes)
- **Hands-On Centers** (10-15 minutes) Extend children's learning with hands-on activities to link learning about the Sun, stars, and Moon to other curriculum areas.
- **Keep Exploring** Exciting ideas for continuing the learning inside and outside the classroom
- **Take-Home Tip** Easy ways to encourage parent involvement
- **Books Bring Learning to Life** Great books to use for Read Alouds or Independent Reading about the Sun, stars, and Moon

We encourage you to build upon the ideas and activities and enjoy learning and exploring together!

Contents

Go in depth with one topic or explore all three! You can choose the activities that work best for your group.

Exploring the Light of the Sun

No matter where we live in the world, the Sun is a star that we all share. It looks bigger and brighter than other stars because it is closer to us than the stars we see at night. It provides light and heat for all the people, plants, and animals in our world. This section is full of exciting ways for you and your children to explore the light of this special star and the shadows it creates.

Try any or all of the following activities:

- **Large Group Activity:** Me and My Shadow
- **Hands-On Centers:** Play and Math
- **Keep Exploring:** Follow the Shadow! and Shadow Tag
- **Take-Home Tip:** Fun in the Sun

Books Bring Learning to Life

LARGE Group Activity

Me and My Shadow

Children all over the world enjoy playing in the Sun. What happens when the Sun's light shines on people and objects? Investigate this exciting question with your children!

CHILDREN WILL:

- **Discover that we need light to make shadows**
- **Investigate how sunlight creates shadows**
- **Explore how to make their own shadows move and change**
- **Create different shadows with their bodies**

YOU WILL NEED:

- Children and a sunny day

BOOK TIP: Add to this activity by reading *Guess Whose Shadow?* by Stephen R. Swinburne.

National Science Education Standard*
Content Standard K-4. A **Science as Inquiry**: Understanding about scientific inquiry

ASK CHILDREN:

- **Big Bird taught us that the Sun is a star that we can see during the day! Isn't that amazing? It's bigger and brighter than the stars we see at night because it's much closer to us.**
  - How can you tell when it's nighttime? What is it like outside at night?
  - How can you tell when it's daytime? What is it like outside during the day?
  - When you stand outside, have you ever noticed shadows? What shadows have you seen? Did you see them during the day or at night?

INVESTIGATE TOGETHER:

1) The best time to explore shadows outdoors is mid-morning or mid-afternoon. Choose a sunny day and invite children to an open outdoor space. Before going outside, remind them that it is not safe to look directly at the Sun.

2) Ask children to look for their own shadows and explore various movements. For example:

- What happens to your shadow when you move?
- What happens to your shadow if you crouch down low or reach your hands up high?

3) Encourage children to work in pairs and observe each other's shadows.

- Can your shadow cover up your partner's shadow?
- What body parts do you see in your partner's shadow? His eyes? His nose? His hair?
- What color is your partner's shadow? Can you see the color of your partner's clothes in his shadow?
- Try to make your shadows shake hands without your hands actually touching!

4) Challenge children to work together to make larger shadow creatures. Try to make shadows of big creatures with lots of arms and legs! Show how you can add ears or a long tail!

5) Talk about all the things children notice about their shadows. Ask children: What is creating all of these shadows? What do you need to create shadows? Invite them to ask questions and share ideas for further exploration.

*National Committee on Science Education Standards and Assessment, National Research Council. (1996). National Science Education Standards. Retrieved from http://www.nap.edu/catalog/4962.html on October 10, 2008.

Exploring the Light of the Sun

HANDS-ON Centers

Get Hands-On

Play Center

CHILDREN WILL:

- **Compare and contrast the types of things they do during daytime and nighttime**
- **Engage in an art activity that develops storytelling skills**

YOU WILL NEED:

- Overhead projector or flashlight
- Drawings of Hu Hu Zhu, Elmo, the Sun, child silhouette, and Big Bird (on pages 8-9)
- Glue
- Construction paper
- Craft stick or ruler

ACTIVITY:

- Invite children to create Shadow Puppets to perform a play about the Sun. They can use the drawings on page 8-9 to create puppet characters and props. They can color the pictures and draw themselves. After coloring, they can glue the drawings onto construction paper, cut them out, and attach a handle (e.g., a craft stick or ruler) to the back. Invite them to move the puppets and props in front of an overhead projector or a flashlight pointed at a wall. They can show the sunrise and have their puppets act out what they like to do during the day, or the sunset, or at night.

Math Center

CHILDREN WILL:

- **Compare the height of an object and the length of its shadow**
- **Develop their measuring skills**

YOU WILL NEED:

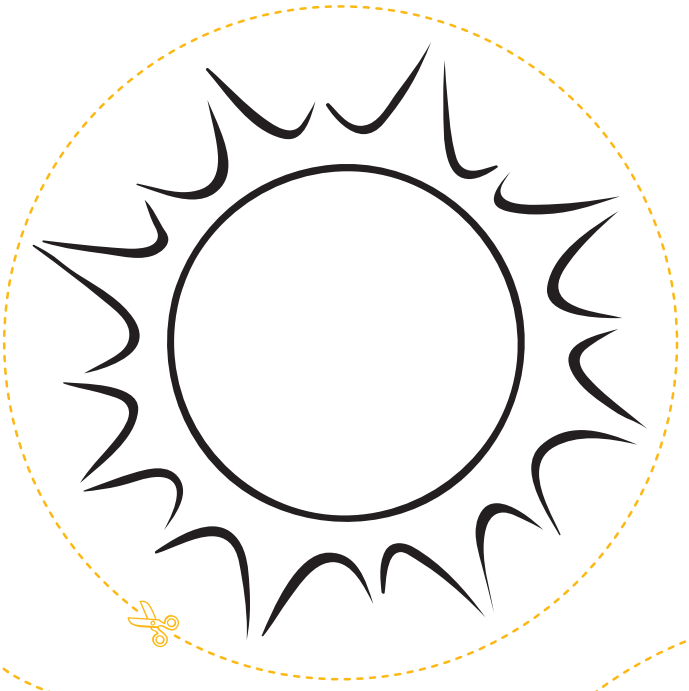
- Overhead projector or flashlight
- White paper
- Blocks

ACTIVITY:

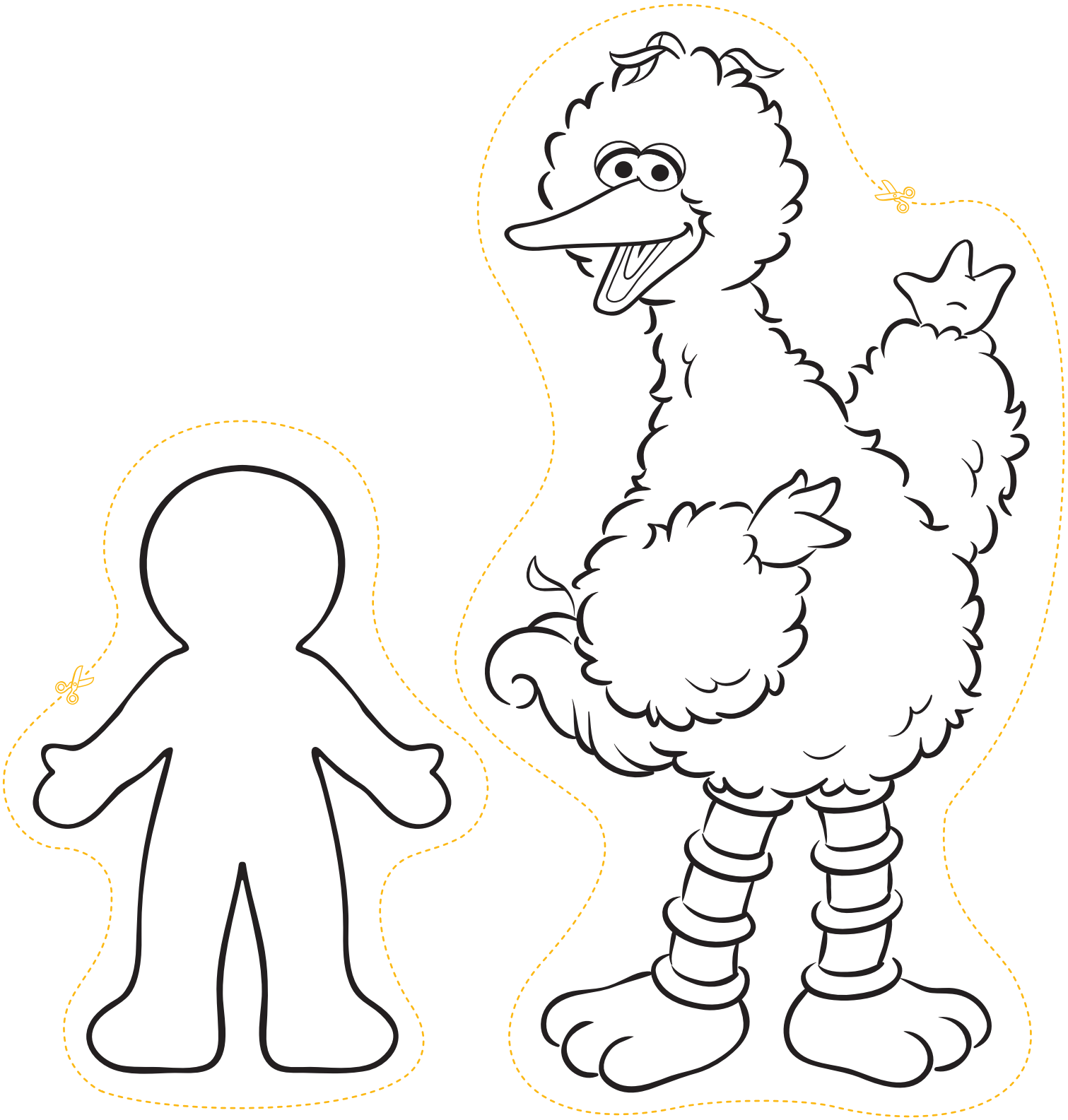
- Put an overhead projector or a flashlight on a table and shine the light to one side (dim the lights, or set up a shaded space). Cover the table with white paper and give children blocks to place in front of the beam of light. Challenge children to build a shadow tower. As they place one block on top of the other, what happens to the shadow they see? How many blocks do they have in their tower? Is the shadow the same size as the tower? Why do you think they are different sizes? What is creating the shadows?

Important Safety Note: Some of the following centers involve the use of an overhead projector. Please remind children not to touch the projector, as it may be hot!

Exploring the Light of the Sun



Exploring the Light of the Sun



Keep Exploring

Try these fun activities to continue the learning about shadows inside and outside:

- **Follow the Shadow!** Ask children to form a line behind you and pretend to be your shadow. As you walk and move your body in different ways, they should copy your movements. If you raise your right hand, or kick to one side, can your "shadows" move as you do? Have them take turns being the leader!
- **Shadow Tag** Invite children to tag each others' shadows. The person who is "It" can chase his friends' shadows. When "It" manages to step on a friend's shadow, that friend becomes "It." (Remind the children to be careful not to run into each other.)

Take-Home Tip

- **Fun in the Sun** Invite families to explore how blocking the Sun's light creates shadows. Outside on a sunny day, they can move their bodies and observe the different shadows they create. They might make shadow puppets with their hands or stand next to each other and compare their shadows. How are their shadows the same? How are they different? What parts of their body can they see in their shadows? What parts of their body can't they see?

Books Bring Learning to Life

Here are some books that will extend the learning. Read them aloud to your group or invite children to use them for Independent Reading to further explore shadows, the Sun, and day and night.

SUN/SHADOWS LITERATURE: NONFICTION

- ***Guess Whose Shadow?***
  by Stephen R. Swinburne
  A photo-essay on how light creates shadows.

- ***Shadow Play: Making Pictures with Light and Lenses***
  by Bernie Zubrowski
  This lively science activity book has more than 50 imaginative experiments that help you explore some of the basic properties of light and discover how studying shadows led to the invention of the camera.

SUN/SHADOWS LITERATURE: CULTURAL LORE

- ***Arrow to the Sun: A Pueblo Indian Tale***
  by Gerald McDermott
  This beautiful story portrays the Indian reverence to the Sun with vibrant full-color illustrations that capture the boldness and color of Pueblo art.

- ***Why the Sun and the Moon Live in the Sky***
  by Elphinstone Dayrell
  Sun and his wife, the Moon, lived on Earth and built a large house so that the water people could visit. But so many poured in that they were forced to move to the sky.

- ***Raven: A Trickster Tale from the Pacific Northwest***
  by Gerald McDermott
  Raven, a Pacific Coast Indian trickster, sets out to find the Sun.

SUN/SHADOWS LITERATURE: FICTION

- ***Nine O'Clock Lullaby***
  by Marilyn Singer
  A series of bright vignettes provides an ingenious response to children's curiosity about what youngsters in other parts of the world are doing while they themselves are going to bed.

- ***Oscar and the Moth: A Book about Light and Dark***
  by Geoff Waring
  As Oscar the kitten watches the Sun set one evening, he has lots of questions about light and dark. Who better than Moth to help out? Moth shows how sources of light are as different as the Sun, stars, fireflies, streetlights, and airplanes and also explains how shadows are made and why darkness comes at night.

- ***The Sun Is My Favorite Star***
  by Frank Asch
  Celebrates a child's love of the Sun and the wondrous ways in which it helps the Earth and the life upon it.

- ***What the Sun Sees/What the Moons Sees***
  by Nancy Tafuri
  Contrasts the world as viewed in sunlight with the quiet night world in moonlight.

Finding Patterns in the Stars

Children all around the world look up at the night sky and find patterns in the stars. They might connect stars to imagine shapes like a triangle or a square or even the outline of an animal. Spark children's imaginations as you explore star patterns, constellations, and some of the myths and stories they've inspired.

Try any or all of the following activities:

- **Large Group Activity:** Connect the Stars
- **Hands-On Centers:** Art and Math
- **Keep Exploring:** Group Star Patterns and Star Song
- **Take-Home Tip:** 'Fun'nel Planetarium

Books Bring Learning to Life

LARGE Group Activity

Connect the Stars

It can be fun for children to "connect the dots" while looking into a starry sky. No matter where children live, they can look up and use their imaginations to make patterns with the stars they see.

CHILDREN WILL:

- **Discover that stars can form patterns in the sky**
- **Use white, circle cutouts to create star patterns**
- **Share their star patterns**

YOU WILL NEED:

- Big Dipper Star Chart (page 14)
- Emperor Star Chart (page 15)
- Ursa Major Star Chart (page 16)
- Black or dark-blue construction paper
- White, circle cutouts (about the size of a penny, 8-10 per child)
- Glue sticks
- Chalk or white crayons

BOOK TIP: Add to this activity by reading *Her Seven Brothers* by Paul Goble.

National Science Education Standard* Content Standard K-4. E **Science and Technology**: Understanding about science and technology

ASK CHILDREN:

- Big Bird used his imagination to make different shapes by connecting stars in the sky.
  - What shapes did Big Bird imagine when he looked at the starry sky? (Show the Big Dipper Star Chart on page 14.) He connected one, two, three, four, five, six, seven stars to make a big soup spoon in the sky — the Big Dipper! In China, Hu Hu Zhu can see this same star pattern!
  - Let's listen to some stories about the Big Dipper and see what shapes or patterns *we* can make by connecting stars!

INVESTIGATE TOGETHER:

1) Explain that people often tell stories and sing songs about the patterns they see in the stars. In ancient China, people believed that the North Pole of the sky was a great emperor who went around the world in his carriage. (Show the Emperor Star Chart on page 15.)

2) In the United States, people share a different story about these same seven stars. (Show the Ursa Major Star Chart on page 16 and tell children that the Big Dipper is part of a bigger star pattern that looks like a bear.) Native Americans tell a story similar to this one about the bear:

A girl changed herself into a bear and chased after her little sister and seven brothers. The seven brothers flew up into the sky to hide. They became the seven brightest stars of the Great Bear. They are the stars that make up the Big Dipper.

3) Now, invite children to create their own star patterns. Provide each child with 8-10 circle cutouts and a piece of dark-colored paper. Have them place the circles on their paper any way they like, without having the circles overlap. Then, ask them to glue the circles in place one at a time.

4) Ask children to pretend the circles are stars in the nighttime sky. What patterns do they see in their "stars"? They could use their imagination to connect some of the "stars" to make straight or curvy lines. They could also use three "stars" to make a triangle.

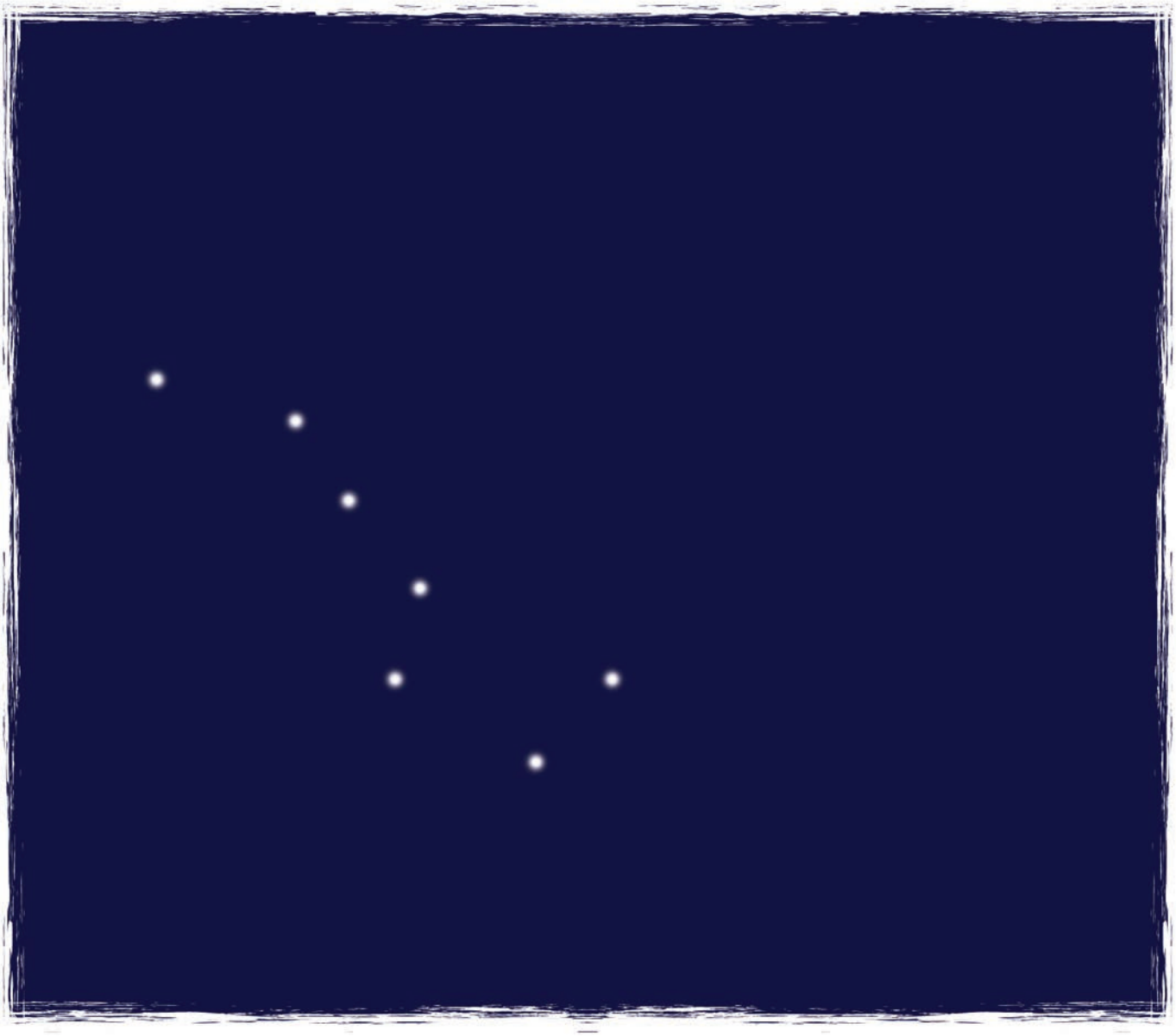
5) Give children pieces of chalk or white crayons, and invite them to connect the "stars" into the patterns they see.

6) Encourage them to share their star patterns with the class. How many stars did they connect to make each pattern?

*National Committee on Science Education Standards and Assessment, National Research Council. (1996). National Science Education Standards. Retrieved from http://www.nap.edu/catalog/4962.html on October 10, 2008.

Finding Patterns in the Stars

LARGE Group Activity



Big Dipper Star Chart

Finding Patterns in the Stars

LARGE Group Activity

Emperor Star Chart

Finding Patterns in the Stars

LARGE Group Activity

Ursa Major Star Chart

HANDS-ON Centers

Get Hands-On

Art Center

CHILDREN WILL:

- **Explore their creativity while creating a starry night**

YOU WILL NEED:

- Dark-blue construction paper
- Star-shaped cookie cutter
- Paint or glue
- Glitter

ACTIVITY:

- Provide pieces of dark-blue construction paper and invite children to create their own starry nighttime sky! They can dip a star-shaped cookie cutter into paint and make star prints on their paper. If they dip the cookie cutter into glue and make a print, they can sprinkle the print with glitter so it shines. Display the starry nights on a wall for all to enjoy.

Math Center

CHILDREN WILL:

- **Observe similarities and differences between shapes**

YOU WILL NEED:

- Shapes of different sizes

ACTIVITY:

- A "star" shape is an interesting figure for children to compare to geometric shapes. Provide children with a variety of circles, triangles, squares, rectangles, and stars of different sizes and different numbers of corners. Ask them to sort the shapes and make comparisons. How many corners does each star have? Which other shapes have sharp corners? How many corners does every triangle have? Which shapes have no corners at all?

Keep Exploring

Try these fun activities to continue learning inside and outside:

- **Group Star Patterns** Invite children to work together to create a group star pattern outside. Each child can draw a star on the ground with chalk. Together, stand back and see if you can find patterns in the stars they've drawn. Encourage children to take turns to connect the stars. After they've drawn the shape of their star pattern, each child can stand on their star so they can "be" part of the star pattern. Can they stand with their legs apart and their arms up to show the light shining from their star?
- **Star Song** Elmo and Hu Hu Zhu sang "Twinkle, Twinkle, Little Star!" to Hu Hu Zhu's favorite star, the North Star. Sing this song together, and ask children to show how the star shines by opening and closing their hands on the word "Twinkle."

  Twinkle, twinkle, little star,
  How I wonder what you are.
  Up above the world so high,
  Like a diamond in the sky.
  Twinkle, twinkle, little star,
  How I wonder what you are!

Children will be interested to learn that stars actually are enormous balls of very hot gas. They are so hot that they shine brightly enough for us to see them even though they are far, far away. Only one star — our Sun — is close enough to warm us and light up our sky during the day. If you look closely, a star may appear to twinkle or flicker in the sky. That happens when the star's faint light is being bounced around a tiny bit by the air above us. (On the airless moon, the stars don't ever seem to twinkle in the sky — and we would never have thought of this song!)

Take-Home Tip

- **'Fun'nel Planetarium** Families can work together to create their own planetarium show! Cover the large opening of a funnel with aluminum foil, and secure it with tape or a rubber band (the bottom of an oatmeal or bread crumb canister will also work). Next, poke small holes in the aluminum foil. You may even poke holes in the pattern of the Big Dipper. Then, turn off the lights, and lie under a table. As you shine a flashlight through the small end of the funnel and aim the "projector" at the underside of the table, you will behold the star patterns you've created!

Books Bring Learning to Life

Here are some books that will extend the learning. You can read them aloud to your group or invite children to use them for Independent Reading to further explore the stars.

STARS LITERATURE: NONFICTION

- ***Stars***
  by Steve Tomecek
  Introduces stars and what they are made of, how they shine, their positions with relation to Earth, and more.

- ***The Big Dipper***
  by Franklyn M. Branley
  Explains basic facts about the Big Dipper, including which stars make up the constellation, how its position changes in the sky, and how it points to the North Star.

- ***The Sky Is Full of Stars***
  by Franklyn M. Branley
  Children will be able to learn about the color and brightness of the stars, the location of major constellations, and making their own planetariums with things they can find at home.

STARS LITERATURE: CULTURAL LORE

- ***Coyote Places the Stars***
  by Harriet Peck Taylor
  Coyote arranges the stars in the shapes of his animal friends.

- ***Her Seven Brothers***
  by Paul Goble
  Retells the Cheyenne legend in which a girl and her seven chosen brothers become the Big Dipper.

- ***How the Stars Fell Into the Sky: A Navajo Legend***
  by Jerrie Oughton
  This retelling of a Navajo folktale explains how First Woman tried to write the laws of the land using stars in the sky, only to be thwarted by the trickster Coyote.

- ***Twinkle, Twinkle, Little Star***
  by Iza Trapani
  An expanded version of the 19th-century poem in which a small girl accompanies a star on a journey through the night sky, examining both heavenly bodies and the Earth below. Includes music on the last page.

Astronaut Adventures to the Moon

The Moon is a source of awe and wonder for children all over the world. There is so much to learn about the Moon, from exploring how people and objects move on the Moon to finding out why astronauts wear special suits. Build on children's natural curiosity and see what you can discover together!

Try any or all of the following activities:

- **Large Group Activity:** A Trip to the Moon!
- **Hands-On Centers:** Math, Dress Up, and Art
- **Keep Exploring:** Astronaut Tag and Moon Hunt
- **Take-Home Tip:** Moon Talk

Books Bring Learning to Life

Astronaut Adventures to the Moon

LARGE Group Activity

A Trip to the Moon!

Children from around the world have often wondered, "What would it be like to be on the Moon?" Explore this fascinating question with your children as you investigate the different ways things look, feel, and move on the moon!

CHILDREN WILL:

- **Take an imaginary trip to the Moon**
- **Discover that the Moon is far away and very different from Earth**
- **Move to music and experience how people move differently on the Moon**
- **Learn about the surface of the Moon**

YOU WILL NEED:

- The "Going to the Moon with Elmo and Hu Hu Zhu!" story (pages 23-29)
- Picture of the Full Moon (page 29)
- Open space for children to move around
- Play dough or clay
- A radio or CD player to play music
- Small ball

BOOK TIP: Add to this activity by reading *Moon* by Steve Tomecek.

National Science Education Standard* Content Standards:
- K-4. D Earth and Space Science: Objects in the sky
- K-4. G History of Nature and Science

ASK CHILDREN:

- **After Elmo and Hu Hu Zhu looked at the stars in the sky, they took a special trip to the Moon!**
  - Elmo and Hu Hu Zhu didn't have a spaceship. What did they use to get to the Moon? Right! They used their imagination!
  - Would you like to visit the Moon? What do you think you would see there? What would you like to find out about the Moon?
  - Let's use our imaginations and take a trip to the Moon with Elmo and Hu Hu Zhu!

INVESTIGATE TOGETHER:

1) Read the interactive story, "Going to the Moon with Elmo and Hu Hu Zhu!" (pages 23-29) and share the pictures with children.

2) At the end of the story, pretend to land on the Moon, and explore together:

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*National Committee on Science Education Standards and Assessment, National Research Council. (1996). National Science Education Standards. Retrieved from http://www.nap.edu/catalog/4962.html on October 10, 2008.

LARGE Group Activity

A Trip to the Moon! (continued)

Elmo and Hu Hu Zhu didn't have a spaceship. What did they use to get to the Moon? Right! They used their imagination!

➜ **How could you move on the Moon?**

- Ask children what happened when Elmo and Hu Hu Zhu tried to run on the Moon. That's right, they hopped and jumped!
- You can jump *really* high on the Moon. Let's try it! Ask everybody to jump as high as they can. Now, do it again!
- Explain that it would feel different to walk on the Moon. You would feel almost like you can float with every step. Make believe your whole body is very light and pretend to walk slowly on the Moon.
- Now, try it with music! Play some music and encourage children to move like they are walking on the Moon. When the music stops, they can freeze in place. When the music starts, they can moon walk again.

3) Get back in your spaceship together and prepare for your blastoff back to Earth. 10, 9, 8, 7, 6, 5, 4, 3, 2, 1! Blastoff! Act out riding in your spaceship and pretend to land back on Earth. Take off your helmets and breathe in Earth's air!

ONLINE LINKS: During this activity, take a look at these videos to see examples of real astronauts moving on the Moon:

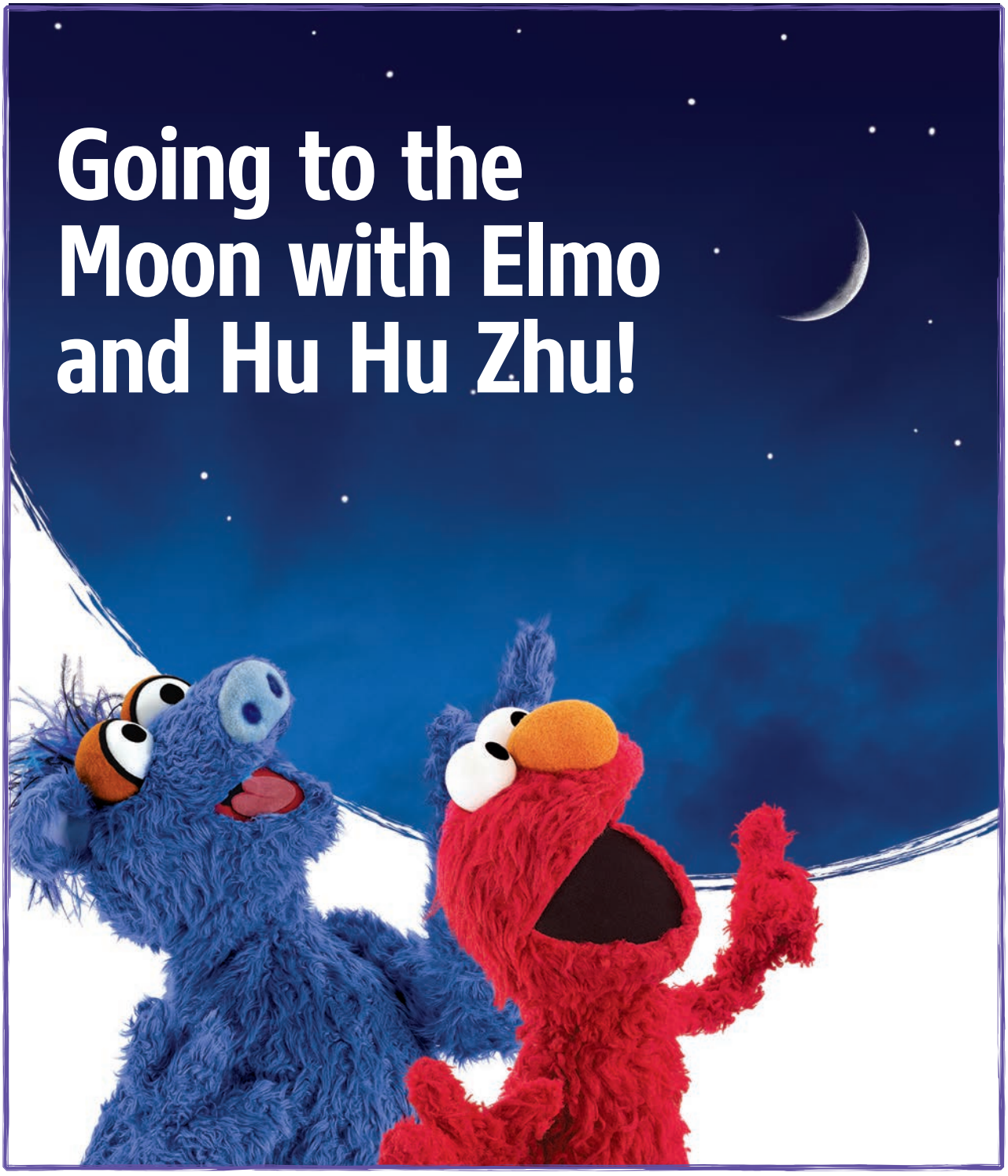
➜ **http://www.youtube.com/watch?v=efzYblYVUFk&feature=related**
Take a look at how the astronauts move and jump. Then, take a look at the flag. Is it waving? Why isn't it waving? That's right! It isn't moving because there is no air on the Moon!

➜ **http://www.youtube.com/watch?v=MU0Rgpdujzo&NR=1**
It isn't easy to keep your balance on the Moon when you are wearing a heavy backpack. Take a look at what happens to this astronaut as he tries to move on the Moon.

➜ **http://www.youtube.com/watch?v=8V9quPcNWZE&feature=related**
This fun video shows astronauts singing on the Moon as they talk by radio about the different ways they can move!

Astronaut Adventures to the Moon

LARGE Group Activity



Astronaut Adventures to the Moon

LARGE Group Activity

Today is a very exciting day for Elmo and his good friend from China, Hu Hu Zhu. They are going to take a pretend trip to the Moon and...they'd like you to come too!

"Oh boy, oh boy," shouts Elmo, "is it time to go to the Moon?"

"Not yet, Elmo," says Hu Hu Zhu. "We have to answer a big question before we go."

"What?" asks Elmo. "Elmo bets Elmo knows the answer. Then, Elmo and Hu Hu Zhu can go to the Moon right away!"

"How do we get there?" asks Hu Hu Zhu.

"Oh," said Elmo quietly, "Elmo does not know." Just then, Elmo had an idea. He and Hu Hu Zhu would just need to find out how astronauts go to the Moon and then they could do those very same things.

page 1

Astronaut Adventures to the Moon

LARGE Group Activity

Elmo and Hu Hu Zhu need some astronaut answers. Can you help? First they need to know what astronauts travel in when they go to the Moon.

What's that you say...you say astronauts travel in a spaceship when they go to the Moon?

"Oh goody," says Elmo. "Now Elmo and Hu Hu Zhu can go to the Moon. We have the answer! Moon, here come Elmo and Hu Hu Zhu!"

"But it's not just that," says Hu Hu Zhu. "The Moon is really far away. You might not believe it, but it takes several days to get there! When people first went to the Moon, it took them about four days."

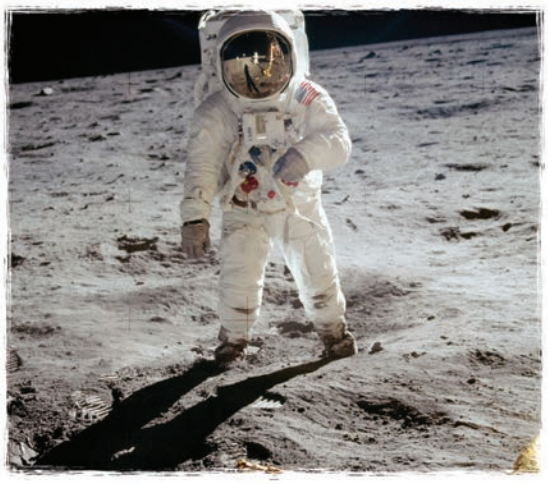
"Elmo thinks that if it is going to take four days to get there, Elmo and Hu Hu Zhu better get in the spaceship now!" says Elmo.

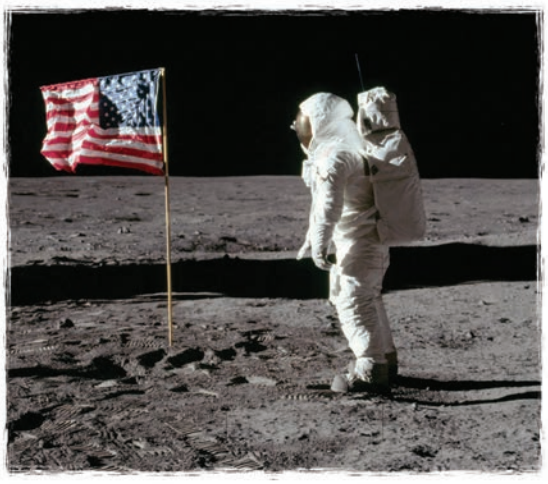
"But, wait, Elmo," says Hu Hu Zhu. "We are not ready yet!"

page 2

Astronaut Adventures to the Moon

LARGE Group Activity





"We have another question to answer," says Hu Hu Zhu. "What do astronauts wear when they go to the Moon?"

It's time for more astronaut answers. Do you know what special clothing astronauts wear to the Moon? Look at these pictures of real astronauts on the Moon. What are they wearing? Helmets and boots, you got it!

"Wow," says Elmo. "Elmo loves helmets and boots. And they wear big backpacks too!"

"The backpacks are big because they need a special air tank," says Hu Hu Zhu. "And they need helmets to help them breathe on the Moon because there isn't any air up there."

"Oh, Elmo and Hu Hu Zhu know just what to wear and just how to travel. Now, can Elmo and Hu Hu Zhu go to the Moon?" asks Elmo.

"Well...if we have some friends to travel with...will you join us?" asks Hu Hu Zhu.

Looks like Elmo and Hu Hu Zhu need your help again, so get ready to put on your space suits!

"Yes," says Hu Hu Zhu. "Put one foot in, then the other, and pullll your space suit up. Now ziiiiiiip it and don't forget to put your big round helmet on to help you breathe!"

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Astronaut Adventures to the Moon

LARGE Group Activity

Elmo is so excited. He just can't wait any longer. "Are Elmo and Hu Hu Zhu and everybody ready to go to the Moon NOW?" shouts Elmo.

"Yes!" says Hu Hu Zhu. "Okay, everybody, it's time to get in our pretend spaceship and buckle our seat belts. Let's count down for the blastoff together! 10, 9, 8, 7, 6, 5, 4, 3, 2, 1! Blastoff! What do you think a spaceship sounds like when it blasts off into space? Let's make the sound of the spaceship blasting off! ROAR!!!!!"

To really get the spaceship going, Elmo and Hu Hu Zhu need you to pretend that you are riding in a spaceship and flying through space. Whoooooosh!

"Elmo thinks the spaceship is going super fast. How is your pretend spaceship ride?"

"Mine feels really fast and really bumpy. Everyone hold onto your seats," says Hu Hu Zhu. "Oh, now it feels nice and smooth, we can relax."

Remember, it takes four days to get to the Moon. So, everyone pretend to go to sleep and wake up four times — that means four days have passed — to get to the Moon with Elmo and Hu Hu Zhu!

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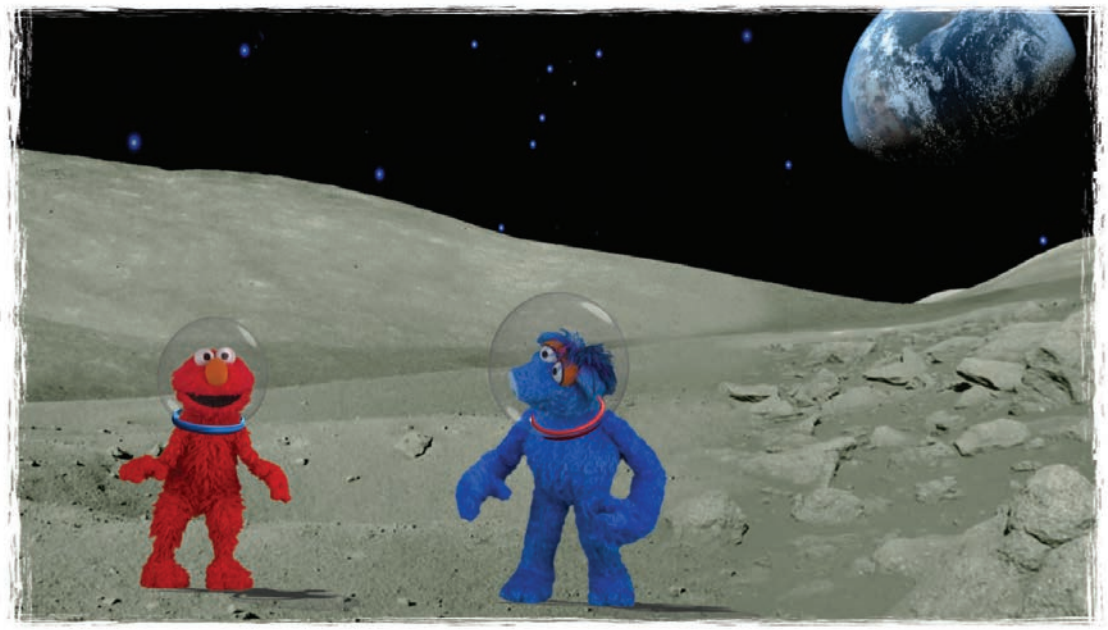
Astronaut Adventures to the Moon

LARGE Group Activity



"Wake up," says Elmo. "Elmo sees the Moon out the window! Do you? Elmo and Hu Hu Zhu and everybody finally made it to the Moon!"

"Not quite yet," says Hu Hu Zhu.

"What now?" says Elmo.

"Now we have to pretend to land on the Moon," says Hu Hu Zhu.

"Oh goody!" says Elmo as he takes a pretend step onto the Moon.

"This is what Elmo has been waiting for. Hello Moon," he says.

"Ni Hao Moon," says Hu Hu Zhu.

Now it's your turn. Take a big giant step and say hello to the Moon! Have fun exploring!

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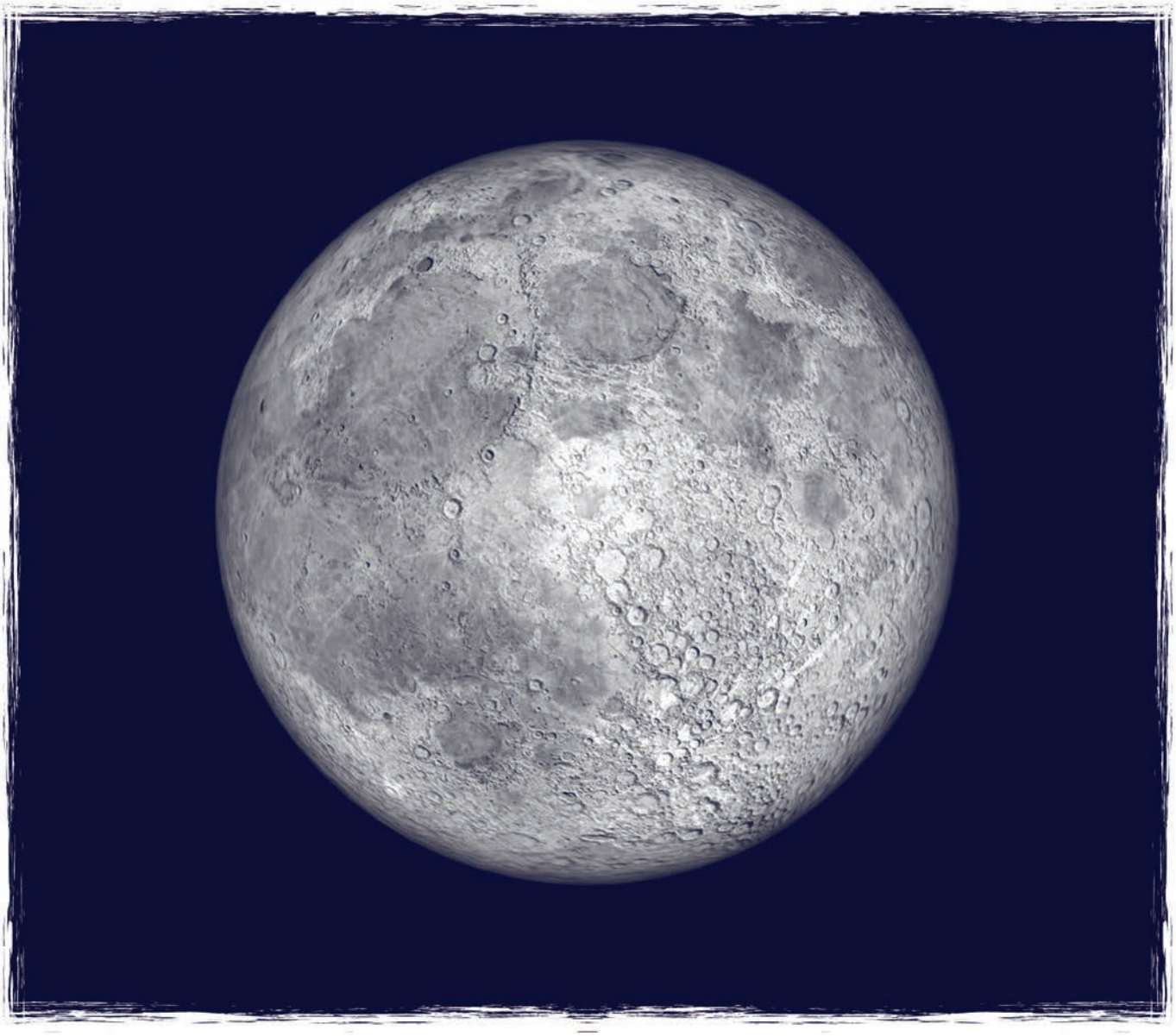
Astronaut Adventures to the Moon

LARGE Group Activity



Luna llena

A veces podemos ver la Luna completa en el cielo. Se ve grande, redonda y brilla mucho. Llamamos a esta forma Luna llena.

Astronaut Adventures to the Moon

HANDS-ON Centers

Get Hands-On

Math Center

CHILDREN WILL:

- **Practice counting backward**

YOU WILL NEED:

- Three containers
- Crayons or blocks

ACTIVITY:

- Children counted down from 10 before their imaginary spaceship took flight. Challenge them to practice counting backward by providing them with a model of a spaceship (or a paper airplane) and three containers of 10, 15, and 20 objects (e.g., crayons or blocks). After they count the objects in each container, they can count backward before blasting the model spaceship into space!

Dress Up Center

CHILDREN WILL:

- **Engage in pretend play**

YOU WILL NEED:

- Sunglasses
- Helmet
- Pants
- Gloves
- Boots

ACTIVITY:

- Let children experience what it's like to be an astronaut by trying on special astronaut clothing. You don't need a real space suit, just a pair of sunglasses, a helmet, snow pants, gloves, and some boots. Once children have on their space suits, they're ready to walk on the Moon!

Art Center

CHILDREN WILL:

- **Draw a picture of a spaceship**

YOU WILL NEED:

- Paper
- Crayons

ACTIVITY:

- Invite children to draw a picture of the imaginary spaceship they used for their trip to the Moon. Provide pictures of real spaceships for them to use as inspiration. Hang the drawings on a bulletin board, between a picture of the Earth and a picture of the Moon, to show the spaceships flying to the Moon. This will be a great visual reminder of their astronaut adventure!

Keep Exploring

Try these fun activities to continue learning inside and outside:

- **Astronaut Tag** Add a new twist to an old favorite. Invite children to play a game of tag. When you call out "Moon," however, everyone moves as if they were on the Moon by hopping and taking giant steps. When you call out "Earth," they can go back to running again.
- **Moon Hunt** Let's see the Moon during the daytime! The best time to look is on a clear day with low humidity. Try in the afternoons, about a week after the New Moon. Check the newspaper or a calendar to find a good day for your hunt, and look up! To plan for your hunt, you might also go to: http://stardate.org/nightsky/almanac/

Take-Home Tip

- **Moon Talk** Encourage families to look for the Moon before bedtime and talk about what it would be like to go to the Moon. Provide parents with a list of the things children have been learning, and encourage them to ask their children questions such as, "If we took a trip to the Moon together, how would we get there?" "What would we need to wear?" "What might we see on the Moon's surface?" and "How is the Moon different from Earth?"

Books Bring Learning to Life

Here are some books that will extend the learning. You can read them aloud to your group or invite children to use them for Independent Reading to further explore the stars.

MOON LITERATURE: NONFICTION

➜ ***Moon***
by Steve Tomecek
Find out about humans' first trip to the moon and what we found there. Learn about Moon craters, Moon dust, and Moon bouncing.

➜ ***The Moon Seems to Change***
by Franklyn M. Branley
Explains the phases of the Moon — the changes that seem to happen to it as it goes around Earth.

MOON LITERATURE: CULTURAL LORE

➜ ***Moon Rope/Un lazo a la luna***
by Lois Ehlert
An adaptation of the Peruvian folktale in which Fox and Mole try to climb to the Moon on a rope woven of grass.

➜ ***Armadillo Ray***
by John Beifuss
Curious about the true nature of the Moon, Armadillo Ray asks different animals for their opinion.

MOON LITERATURE: FICTION

➜ ***And If the Moon Could Talk***
by Kate Banks
As evening progresses into nighttime, the Moon looks down on a variety of nocturnal scenes, including a child getting ready for bed.

➜ ***I Took the Moon for a Walk***
by Carolyn Curtis
Lyrically written and beautifully illustrated, this memorable moonlight journey will leave all who read it marveling at the serene beauty of the world at night.

➜ ***Kitten's First Full Moon***
by Kevin Henkes
Working in bold black lines and the silvery palette of moonlight, he creates a lovable, expressive character in the determined kitten, and his dramatic contrasts of light and dark capture the excitement of a nighttime adventure.

➜ ***Moongame***
by Frank Asch
During a game of hide-and-seek, Moon hides behind a cloud, leaving his friend Bear very worried.

➜ ***Regards to the Man in the Moon***
by Ezra Jack Keats
With the help of his imagination, his parents, and a few scraps of junk, Louie and his friends travel through space.

➜ ***Squawk to the Moon Little Goose***
by Edna Mitchell Preston
Little Goose is told to go to bed. Curious about the night, she disobeys her mother, sneaks out of the house, and is nearly swallowed by a fox. Using a quick wit, and the reflection of the Moon in the pond, the clever Little Goose gets away!

➜ ***The Moon Might Be Milk***
by Lisa Shulman
Rosie wonders: What is the moon made of? Gran knows best. Using milk, butter, sugar, and other ingredients, she shows Rosie how to bake moon-shaped cookies and captures a magical piece of the moon in her very own kitchen.

➜ ***The Sun, the Moon, and the Stars***
by Nancy Elizabeth Wallace
A collection of more than 30 poems, some by the compiler, others by Walter de la Mare, Russell Hoban, Frank Asch, Jane Taylor, and others.

Bringing It All Together!

Keep the learning going by encouraging children to share their work with their families at home, and remind them to look up to the sky!

Congratulations! Together with children you have explored:

- How the light from the sun creates shadows
- Exciting star patterns and stories from around the world